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SUMMARIES OF THE 8TH SRUOG CONGRESS,
1-3 OCTOBER 2020

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Myelomeningocele – clinical case presentation

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Introduction. Myelomeningocele, commonly known as open spina bifida, is a devastating congenital malformation of the central nervous system. The neural tube defects are of two types: open and closed. The defect of the open neural tube means that the defect is not covered at all or only covered by a membrane. The open neural tube defects cover 80% of all neural tube defects. They are characterized by the failure of the neural tube to close the sacral lumbar region during the embryonic development, leading to herniation of the meninges and spinal cord through a vertebral defect. **Methodology.** A 20-year-old patient, GI, P0, with 23 weeks of pregnancy, with non-directly observed therapy, is directed from a municipal hospital to the Maternal-Foetal Medicine Department of the "Cuza Vodă" Maternity Iași, after the ultrasound suspicion of a foetal lumbar-sacral defect. The foetal morphological evaluation reveals a foetus with open lumbar-sacral spina bifida, borderline ventriculomegaly, banana sign. After counselling the patient, she decides for termination of pregnancy and medicine abortion is induced. **Results.** The patient aborts a product of unviable conception, male, weighing approximately 500 g, with obvious spinal defect, located at the lumbosacral level. Macroscopically, we observe the interruption of the tegument continuity, with the direct visualization of the spinal defect, not covered. The pathological anatomy confirms the diagnosis of myelomeningocele. **Conclusions.** The diagnosis is usually obvious due to the visible lesion of the spine and the associated indirect ultrasound signs from the first trimester. The ultrasound characteristics of the myelomeningocele depend on the location, the presence of hydrocephalus and other associated abnormalities of the central nervous system. Although the prenatal ultrasound evaluation of the first trimester of pregnancy by a specialist in maternal and foetal medicine is considered gold standard in the case of ultrasound suspicion of spina bifida, the addressability to the specialist doctor at the beginning of pregnancy in our country is low.

Keywords: open spina bifida, myelomeningocele, prenatal diagnosis

The role of ultrasound in the diagnosis of rare forms of ectopic pregnancy after assisted human reproduction

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Introduction. The incidence of extrauterine pregnancies after *in vitro* fertilization (IVF) compared to those obtained naturally is 2.5 to 5 times higher. Among these, difficult diagnostic problems include ovarian pregnancy, cervical pregnancy, heterotopic pregnancy, interstitial pregnancy, abdominal pregnancy and uterine scar pregnancy, with transvaginal ultrasound playing a decisive role. The objective of the study was to present the role of ultrasound in the diagnostic algorithm. **Methodology.** We conducted a retrospective study on 2180 patients who performed IVF, in the period 2014-2018, in a private center. **Results.** The rate of biochemical pregnancy was 52.9%. In that period, there were eight extrauterine pregnancies, difficult to locate, representing 40% of the total ectopic pregnancies. Of these, we note four heterotopic pregnancies, one cervical pregnancy, one ovarian pregnancy, one abdominal pregnancy and one remaining tubal stump pregnancy. The ovarian pregnancy was diagnosed using ultrasounds by the presence of a hyperecogenic ring in the ovary, surrounded by its cortex, separated by the yellow body, in the context of the absence of the intrauterine gestational sac. In the cervical pregnancy, the gestational sac under the internal cervical orifice was visualized, the uterine cavity being empty. The four heterotopic pregnancies were ultrasound diagnosed, but three under conditions of hemodynamic instability, due to the concomitant presence of the intrauterine gestational sac, and: in the first case, the embryo with cardiac activity present laterally was highlighted, in the second case a suggestive image was seen – hydrosalpinx, accompanied by liquid in Douglas, and in the other two cases a heterogeneous, inhomogeneous mass, laterouterin, separated by the yellow body was visible. The abdominal pregnancy could only be diagnosed intraoperatively, in hemodynamic instability. **Conclusions.** Ultrasound plays an essential role in the diagnosis of rare localizations of extrauterine pregnancies after *in vitro* fertilization. Early diagnosis, before installing hemodynamic instability, allows the avoidance of surgical treatment and the rescue of concomitant intrauterine pregnancies.

Keywords: ectopic pregnancy, *in vitro* fertilization, heterotopic pregnancy

The association of congenital cardiac malformations with *in vitro* fertilization

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Introduction. The incidence of *in vitro* fertilization (IVF) pregnancies increases from year to year, reaching in some developed states approximately 4% of the total births. The American Cardiology Association considers fetal echocardiography mandatory in these situations. *Methodology*. In our retrospective evaluation, from 2011 to 2017, there were included 2471 women who performed IVF in a private center. The number of clinical pregnancies in this group was 989 (40%). All analyzed pregnancies were obtained by transfer of fresh embryos. The purpose of the study was to see the incidence and type of congenital cardiac abnormalities in them. **Results.** Of the total number of pregnancies, 75.8% were single, 22.9% were twin, and 1.3% were triple. The incidence of cardiovascular congenital abnormalities in the studied group was 0.8%. Of the eight cardiac abnormalities, three occurred in the context of chromosomal changes: a Down syndrome with atrioventricular septal defect, a Down syndrome with Fallot tetralogy, an Edwards syndrome with ventricular septal defect (DSV). The other cardiac abnormalities, without chromosomal changes, were two severe and three minor. The severe cardiac abnormalities were: a case of tricuspid valve atresia with DSV and pulmonary artery hypoplasia (PA), at a diamniotic, dichorionic pregnancy and a case of transposition of large vessels. The minor congenital heart defects were DSV. In the twin pregnancy, the affected fetus was stopped selectively, the evolution of the second one being normal, in the transposition of large vessels, the fetus died at birth, despite the postnatal surgery. The fetuses diagnosed with DSV evolved favorably. The pregnancies with concomitant cardiac and chromosomal abnormalities were discontinued with parental consent in the second trimester of pregnancy. **Conclusions.** The probability of congenital heart malformations is increased in the fetuses obtained by IVF, which is why fetal echocardiography should be performed at these routine tasks.

Keywords: congenital cardiac malformations, *in vitro* fertilization, fetal echocardiography

Uterus-ovar ultrasound and supresed FSH values: case report

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Introduction. Primary amenorrhea is related to a complex panel of causes including central hypogonadism (with low FSH-LH values). Uter-ovar ultrasound is mandatory. We aim to introduce an adult case newly diagnosed with Kallmann syndrome. **Methodology.** Case report. **Results.** A 33-year-old patient, with a history of subtotal thyroidectomy at the age of 17 for benign condition, is currently evaluated for primary amenorrhea. At the age of 19, she had for a few months medication with oral contraceptives with positive response of menses, a medication which was stopped by the patient and no other investigations were done at that moment. Uterus-ovarian ultrasound showed uterus of central position, of maxim 4.5 cm, and the assays of gonadic axes showed central suppression of FSH/LH 0.3/0.1 mUI/mL, hypo-estrogenism of 5 pg/mL, normal prolactin of 4 ng/mL (normal <23), no androgen excess (total testosterone =0.153 ng/mL, normal: 0.0804-0.481), and thyroid function (TSH=3.6 µUI/mL, normal:0.5-4.5 under 25 µ levothyroxin/day) as adrenal (ACTH=9 pg/mL, normal: 3-66, plasma morning cortisol = 9.74 µg/dL, normal: 6-21). Hypoosmia is detected with pituitary hypoplasic aspect at magnetic resonance imaging. Estro-progestive substitution is recommended during the reproductive age. **Discussion.** Due to the fact that the patient had amenorrhea for so long, secondary osteoporosis was also confirmed at the patient. **Conclusions.** Ultrasound helps even the central hypogonadism panel of investigations.

Keywords: ultrasound, primary amenorrhea, hypogonadism

The role of Doppler of the uterine artery in pregnancy (weeks 22-24) in the prediction of preeclampsia

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Introduction. The study of color Doppler velocimetry on the uterine artery has shown to be useful in pregnant women susceptible to develop preeclampsia. An abnormal color Doppler wave reflects increased impedance of the uterine circulation, which is thought to be due to an error of trophoblastic invasion in the spiral arteries. Thus, a pathological increase in placental vascular resistance, which will be detected by abnormal Doppler flow on maternal uterine arteries in 22-24 weeks of gestation, may be a predictive factor in the occurrence of preeclampsia. **Methodology.** A retrospective study was performed, over a period of one year (January 2019 – December 2019), at the "Dr. I.A. Sbârcea" Clinical Hospital of Obstetrics and Gynecology, Brașov, on 254 pregnant women, whose Doppler parameters of the uterine artery were evaluated at the gestational age of 22-24 weeks. **Results.** Of the 254 pregnancies in which Doppler was performed on the uterine artery, a normal resistance index (RI) was found in 58% of cases. In 42% of cases, an increased RI and the presence of notch were detected, and 31% of these pregnant women developed preeclampsia until birth. It was observed that the association between an increased RI and the presence of notch had a higher predictive value. **Conclusions.** The identification of a risk group allowed the early prediction of preeclampsia, a pathology with a significant impact. However, the predictive value of RI and the presence of notch have increased significantly in pregnant women at risk, compared to those in the primary population. For this reason, it will be considered to perform screening of the Doppler parameters on the uterine artery in these women.

Keywords: Doppler, uterine artery, preeclampsia

Prenatal diagnosis and the incidence of fetal dextrocardia

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Introduction. Dextrocardia is a rare congenital anomaly, characterized by the location of the fetal cord in the right hemithorax. This pathology is usually associated with a large spectrum of complex cardiac anomalies and for that it is hard to understand and to diagnose it. The objective of this paper is to determine the incidence of fetal dextrocardia associated with other cardiac anomalies and to set up an imaging technique for early diagnose. **Methodology.** For the paper there were analyzed 11 studies from the literature, in the period 1998-2016, which examined 70,086 pregnant women, with gestational ages ranged from 16 to 36 weeks of pregnancy. All the pregnant women have been evaluated through ultrasound and fetal echocardiography. **Results.** From the total of 70,086 patients examined, 386 were diagnosed with fetal dextrocardia, which indicates an incidence of 0.53%. The most frequent subtypes were: *situs inversus*, *situs solitus* and *situs ambiguus*. **Conclusions.** The progress of ultrasound technology and the increased experience in fetal echocardiography led to increased specificity and sensitivity of echocardiography and to a more accurate diagnosis of cardiac congenital pathology. Still, the prenatal diagnosis of cardiac displacement and of other cardiac congenital anomalies is difficult to achieve. There is a large spectrum of cardiac malformations and the incidence varies with the atrial situs. The majority of diagnosed fetuses with dextrocardia are associated with other cardiac congenital illnesses.

Keywords: dextrocardia, cardiac displacement, fetal echocardiography

Ultrasonographic diagnosis of renal pathology in fetus – a rare case of giant kidney cyst

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Introduction. The fetal urinary tract can be visualized by ultrasound from the 11th week of gestation. The finding of developmental anomalies of the urinary tract or kidneys requires additional investigation and/or genetic counseling. Simple kidney cysts are an uncommon phenomenon in the fetus, and generally follow an obstruction located in the inferior urinary tract. The objective of this review paper is to present the case of a fetus diagnosed with a giant kidney cyst at the 39th week of gestation. **Methodology.** This paper aims to present the case of an unmonitored 39-week secundiparous with the age of 16 year old, with a recent previous caesarean section, who arrived in labor at the Emergency Room of the "Dr. I.A. Sbârcea" Clinical Hospital of Obstetrics and Gynecology, Brașov. The pregnant patient was examined using a Voluson E8 Expert Ultrasound Machine (GE Healthcare, Milwaukee, WI), and a fetal kidney anomaly was identified. **Results.** The ultrasonographic examination revealed a live fetus, with biometric parameters corresponding to 39 weeks of gestation, with a normal amniotic fluid index. The fetal abdominal cavity examination identified a normal sized bladder, a right second-degree ureterohydronephrosis, and the right kidney containing a septed cyst of approximately 8 cm, with serous content that compressed the renal cortex. No other morphological anomalies were identified. The presumptive diagnosis was urinary obstruction through posterior urethral valve. The fetus was delivered through caesarean section. We extracted a male, 2960 g, Apgar score 9. In postpartum, the presumptive diagnosis was confirmed and the two-day-old newborn was transferred to the Department of Pediatric Surgery. **Conclusions.** The routine fetal ultrasonographic examination is mandatory during the pregnancy because it identifies disabling or incompatible life pathologies. The detection of renal morphological anomalies requires additional investigation and correlation between the ultrasound imaging and the paraclinical findings, in order to prevent the potential evolution towards chronic kidney failure or even death of the newborn.

Keywords: kidney cyst, ureterohydronephrosis, posterior urethral valve

Ultrasonographic diagnosis and prognosis in extraabdominal varix of the umbilical vein – case study and literature review

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Introduction. Varix is one of the umbilical cord pathologies that may associate as complication the vascular thrombosis. Sometimes, the intrauterine fetal death occurs consequently. The varix could develop intra- or extraabdominal and are defined by the presence of a dilatation area of at least 9 mm diameter. The early diagnosis is essential for an adequate therapeutic attitude, and the Doppler examination is necessary for the assessment of the fetal well-being. **Methodology.** We present the case of a 17-year-old primiparous patient, with undispensarized pregnancy, diagnosed with a varicose dilatation of the umbilical vein in the "Dr. I.A. Sbârcea" Clinical Hospital of Obstetrics and Gynaecology, Brașov. The patient was evaluated and diagnosed by ultrasound and the case was complicated by thrombosis. This study also synthesizes the results of previous articles based on the diagnosis and prognosis of this umbilical cord pathology. **Results.** A 17-year-old primiparous, without any medical or obstetrical pathological history, with incorrectly dispensarized pregnancy, presented at the "Dr. I.A. Sbârcea" Clinical Hospital of Obstetrics and Gynaecology, Brașov, for an obstetrical evaluation, at 30 weeks of pregnancy. The ultrasonography performed revealed the umbilical cord normally inserated into the fetal abdominal wall, with two arteries, but the umbilical vein presented a 9.5 mm diameter dilatation area, associated with a maximal systolic flow velocity of approximatively 98 cm/s, proximal of the dilated area. The patient refused the admission into the hospital. One week later, she presented at the hospital blaming decreased fetal movements. Compared to the previous examination, the ultrasonography revealed an increased dilatation area of the extraabdominal umbilical cord (10.7 mm) and higher maximal systolic flow velocity, up to 146 cm/sec. An emergency caesarean section was performed, and we extracted a male with a birthweight of 1650 g, and with an Apgar score of 6; macroscopically, the umbilical vein appeared with obvious thrombosis. **Conclusions.** The ultrasonographic screening is the key to the diagnosis of umbilical cord pathologies, including the umbilical vein varix, complicated or not by thrombosis. A dynamic and frequent assessment of the imaging features of the varicose dilatations of the umbilical cord, correlated with Doppler cerebrovascular indices, will determine the fetal status and the adequate therapeutic attitude.

Keywords: thrombosis, umbilical vein, varix

Key points and perspectives in multiple pregnancy

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The incidence of multiple pregnancies has increased significantly in the past decades, in different statistics reaching the double, triple or even exceed these numerical orders at a global level. There are at least two factors unanimously recognized in maternal-fetal medicine, which essentially contribute to the emergency of this aspect, namely the increasingly used techniques of assisted human reproduction, on the one hand, and the increase of the maternal age at giving birth, on the other hand. Ultrasonography is absolutely indispensable for obstetric examination, but in the case of multiple gestation, it has certain indisputable features. This paper aims at presenting the key elements and the current perspectives regarding multiple pregnancy: chorionicity is essential, monochorionic twins are at risk until birth, twin pregnancy is now quite common, malformations are not uncommon, screening for genetic abnormalities is similar, fetal growth should be carefully evaluated, placental location rigorously confirmed, cervical length constantly verified, and individualized obstetric approach.

Keywords: twins, chorionicity, screening

Errors to avoid in obstetrical ultrasonography. How important are the medical documents?

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Introduction. Ultrasound is the most widely used diagnostic method in obstetrics. As proved by specialized studies, fetal malformations can be distinguished by the antepartum in varying percentages, depending on the type of malformation and the presence of certain difficulties related to the actual examination. Therefore, at present, there are a number of prenatal non-diagnosed cases. The objective of the paper is to present aspects related to the individual medical responsibility, related to the completion of the medical documents in order to release an ultrasound result. **Methodology.** This paper presents some case studies in which we aimed at highlighting certain aspects of medical practice that could be the cause of possible litigation and the behavior recommended for each of the situations presented. The study was conducted within the clinical sections of Obstetrics-Gynecology I and II of the "Pius Brînzeu" County Emergency Clinical Hospital, Timișoara. **Results and conclusions.** Ultrasound screening for malformations is recommended in the first trimester, and then in the second trimester. Litigations related to the acquisition of inadequate images, errors of interpretation or reporting and lack of technical support for the imaging study may arise. Compliance with the recommendations in the national guidelines in force regarding the ultrasound screening of fetal malformations during pregnancy and the preparation of the medical report improve the quality of the medical document and limit the exposure to situations of malpraxis. The case studies presented emphasize the importance of defensive medicine in obstetric ultrasound, so that the physician can perform his activity without the permanent stress of a possible litigation.

Keywords: ultrasound, malformations, malpraxis

Ultrasound brain injuries patterns detectable in neonatal encephalopathy

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Neonatal encephalopathy is defined as a disturbance of neurological functions, first of all in the consciousness state of the newborn. Hypoxic ischemic encephalopathy (HIE) is an important cerebral injury that arises from the lack of oxygenation of the brain, caused by mechanisms whose action interferes in the perinatal period. With all the progress in the last decades in following pregnancy and newborn care, this remains an important perinatal and neonatal factor of mortality and neuromotor, cognitive and sensorial disabilities. Head ultrasound is one of the routine evaluation tools of newborns brain with perinatal hypoxic lesions. Even though cerebral MRI is the gold standard in the assessment and monitoring of the hypoxic injuries, this is not a routinely available tool in any health service and sometimes the health condition of the patient doesn't allow it. Head ultrasound becomes an alternative in newborns with HIE evaluation. Using multiple echographic windows available on newborn and variable frequency transducers, these have improved the sensibility and specificity of the method. In this paper, we want to review the most common ultrasound images associated with perinatal hypoxic events and neonatal encephalopathy and their evolution in time, highlighting the importance of the method for the diagnose and, nonetheless, for their follow-up.

Keywords: hypoxic ischemic encephalopathy, intracerebral hemorrhage, cortical atrophy

Ectopia cordis within a plurimalformative syndrome detected at 9 weeks

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Introduction. *Ectopia cordis* is a rare malformation that is most often included in the malformation spectrum of the Cantrell pentalogy. In incomplete forms of this complex malformation, postnatal surgical treatment can be performed. If *ectopia cordis* is part of an association of pluriorgan malformations, the therapeutic resources are exceeded. **Methodology.** We present a case of plurimalformative syndrome detected at 9 WE (weeks of amenorrhea) that associates *ectopia cordis*, complete laparoschizis, anencephaly and malformations of the limbs. 2D transvaginal ultrasound was performed using color Doppler mode, as well as genetic investigations. Due to the complex malformations incompatible with life, there was a medical interruption of the pregnancy by cervical dilation, fetal extraction and aspiration. The fetus was macroscopically examined. **Results.** The association of complete laparoschisis with *ectopia cordis* raises the suspicion of Cantrell pentalogy and the multiorgan malformations include anencephaly and limb malformations. 2D and Doppler ultrasound show the position of the heart outside the fetal body, as well as other malformations. Genetic investigations do not reveal chromosomal abnormalities. **Conclusions.** Considering the small size of the fetus, a classic anatomical-pathological examination is difficult to perform and would lead to the destruction of the material. We consider that micro-MRI may be an alternative to the classic autopsy in this case. In the future, studies are needed to elucidate a possible genetic involvement in the mechanism of occurrence of these complex malformations, for which there are no therapeutic resources.

Keywords: *ectopia cordis*, anencephaly, ultrasound

Pregnancy outcome after fetal reduction in women with a dichorionic twin pregnancy

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The most severe fetal cardiovascular malformations are lethal or require complex surgery. Early detection by ultrasound screening of the antenatal routine performed in pregnant women with a gestational age between 18 and 22 weeks allows their adequate management in tertiary care centers, with adequate expertise. In case of multiple pregnancies, there is the possibility that they may be discordant, respectively one of the fetus may have a major malformation or a chromosomal abnormality. In such situations, after the prenatal diagnosis confirming the anomaly of one of the fetuses and the correct counseling of the future parents, one can opt for selective feticide. Thus, only the normal task that can evolve without complications until the term is preserved. Numerous studies have shown that selective fetal reduction decreases the risk of preterm birth, which results in better outcomes for both mothers and newborns. The method consists of inserting a needle under ultrasound guidance through the vagina or, more commonly, through the abdominal wall into the chest of the deformed fetus. Intracardiac potassium chloride is commonly used, although some doctors prefer saline. Post-procedurally, the parents should be properly advised. We presented the case of a 33-year-old patient, IIG, IIP, with spontaneously obtained bichorial-biamniotic twin pregnancy, which was detected with complex cardiac malformation of one of the fetuses during the ultrasound screening in the second trimester. Following the counseling, the patient opted for selective feticide. The intervention was performed at 23 weeks of gestational age and the subsequent evolution was without complications, the task being completed on time. Therefore, ultrasound-guided selective feticide is an effective and safe procedure to be considered in certain cases of twin pregnancies.

Keywords: heart malformation, twin pregnancy, feticide

Ecographic markers used in the prediction of premature birth

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Introduction. Ultrasound plays an important role in obstetrics, highlighting the sonographic markers used in the prediction of premature birth. Cervical modification plays an important role in the initiation of labour, so cervical evaluation is a major part of the prediction of premature birth. The shortening of cervical length reflects cervical maturation and it is a valuable criterion, therefore we propose to assess the risk of premature birth by calculating the cervical index in the second trimester and the qualitative dosage of fetal fibronectin from the cervical-vaginal secretion. **Methodology.** The study includes 45 patients with pregnancy between 24 weeks and 34 weeks, with certain risk factors: premature birth, under 34 weeks or spontaneous abortion in the second trimester, cervical cerclage; conization; presence/absence of ultrasound changes in the uterine orifice (funneling); presence/absence of sludge. The pregnant patients were then reassessed every two weeks. **Results.** The study includes patients between the ages of 20 and 38 years old. The age category with the highest rate of premature births was above 35 years of age, with a percentage of 28%. For the patients with LC<25 mm, in which the fetal fibronectin test was performed from the cervical-vaginal secretions and the result was positive, 14 pregnant women gave birth prematurely, at approximately two weeks after the test, and 6 pregnant women gave birth after one week. Regarding the consistency index of the cervix, it is significantly lower, with an average value of 52.1% in patients who gave birth between 28 and 34 weeks of gestation compared to 61.5% for full-term births. **Conclusions.** The correlation of the cervical length with the cervix consistency index and supplemented by the qualitative dosage of fetal fibronectin from the cervical-vaginal secretions may be an important benchmark in the assessment of premature birth risk.

Keywords: premature birth, cervix

Trophoblastic gestational disease – the border between benign and malignant. Retrospective study of the cases between 2014 and 2019 in the "Dr. I.A. Sbârcea" Clinical Hospital of Obstetrics and Gynecology, Braşov

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Introduction. Trophoblasitc gestational (TD) disease includes a broad spectrum of pathologies that originate from the trophoblastic cells. The most representative subtypes of TD are hydatiform mole and choriocarcinoma. Although the trophoblastic condition might count as a rare pathology, the global incidence varies from 23 to 1300 at 100,000 cases, depending on the geographic area. **Materials and method.** We are presenting a retrospective study of the last five years (January 2014 – December 2018), which includes all the cases diagnosed in the "Dr. I.A. Sbârcea" Clinical Hospital of Obstetrics and Gynecology, Braşov. The study evaluates the incidence of the pathology and the associated features of the cases, such as age, personal and family record, rural versus urban environment, and the subtype of the trophoblastic disease. **Results.** From 2014 to 2018, 34 cases of the trophoblastic disease have been identified, respectively hydatiform mole and choriocarcinoma. Resembling the other studies on the subject, the ratio between those two variates of TD remains constant: 76.47% for hydatiform mole and 23.53% for choriocarcinoma. Hydatiforme mole is diagnosed at patients under the age of 15, whereas choriocarcinoma was found to be linked with menopausal state. A higher incidence was reported in smokers and in women with a personal or family history of TD. **Conclusions.** Trophoblastic disease is a very complex pathology, sharing both malignant and benign features, as the diagnosis and management become challenging. Extreme ages and low income tend to be contributory factors to those subtypes of the disease, and the treatment needs to be conducted by a multidisciplinary team, including the gynecologist, the oncologist and the pathologist.

Keywords: trophoblastic gestational disease, hydatiform mole, choriocarcinoma

Edwards syndrome – cases report

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Introduction. Edwards syndrome is a chromosomal abnormality, with an incidence of 1/6600 of the pregnancies with live newborns, mostly in the female sex. In the second trimester, 85% of the girls are aborted and those who are born alive usually die before 2 months. Fetal abnormalities in Edwards syndrome are: mental retard, dolichocephaly, heart malformations, low insertion ears, micrognathia, syndactyly, renal abnormalities, bone system malformations. Pregnancy complications: polyhydramnios or oligohydramnios, single umbilical artery, reduced fetal activity, IUGR, choroid plexus cyst. **Methodology.** Between January 2016 and December 2019, the patients were examined by performing the blood examination, as well as the morphological ultrasound of trimesters I and II. **Results.** Six cases of Edwards syndrome were found: two pregnancies stopped in evolution in the first trimester, one case with diaphragmatic hernia, diagnosed at 18 weeks, one case with anomalies of the face and limbs, one case with Cantrell pentalogy, and one case with ventriculomegaly. **Conclusions.** It is important to perform the first-trimester ultrasound screening for the early diagnosis of Edwards syndrome. In the cases aforementioned, two of them presented late to the doctor and were diagnosed in the second trimester. Only one case preferred (for religious reasons) to continue the course of the pregnancy and the newborn died at 7 days postpartum.

Keywords: Edwards syndrome, fetal anomaly

Caesarean scar defect – methods of diagnosis

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Introduction. Incomplete healing of the scar after caesarean section may be the cause that will complicate future pregnancies due to risk of uterine rupture, abnormal placenta, various gynecological symptoms, or it may be the cause of infertility of uterine origin. Caesarean scar defect (CSDs) is characterized by myometrial discontinuity of the anterior uterine wall (in the lower segment), located at the level of the scar after caesarean section. The defect may partially or totally affect the surface of the scar after caesarean section. In the specialized literature, it can be found under different names, such as: uterine diverticulum, deficiency, uterine isthmocele, niche, uterine pouch, and uterine scar dehiscence. The clinical manifestations of the patients are diverse: dyspareunia, brown vaginal secretions after coitus, intermenstrual bleeding, dysmenorrhea, infertility. The author Vaate describes several types of CSDs and recommends the description of the CSDs shape, the width of the CSDs, the depth of the CSDs, as well as the thickness of the remaining myometer. Other invasive CSDs evaluation methods are: saline hysterosonography, hysterosalpingography, hysteroscopy, and nuclear magnetic resonance. **Materials and method.** In all cases of CSDs, the diagnostic method was transvaginal ultrasound, being a noninvasive imaging method that can easily detect myometer changes and the presence of tissue discontinuity. **Results.** The patients included in this article have a history of obstetric birth through repeated caesarean section. The diagnosis of CSDs was established by 2D transvaginal ultrasound, supplemented by clinical manifestations and personal history. The reason for the consultations of these patients is the bleeding with postmenstrual onset with a fluid liquid appearance of brown color with variable duration, which appears after intercourse and physical exertion. Pregnancy complications that result from an isthmocele include ectopic pregnancy, low implantation and uterine rupture. Vaginal repair are the best options depending on the isthmocele's characteristics. **Conclusions.** The diagnosis of caesarean scar defect can be established exclusively by imaging methods, transvaginal ultrasound being the gold standard imaging technique for diagnosis. Caesarean (repeated) surgery is a risk factor in the development of CSDs.

Keywords: caesarean scar defect, isthmocele, uterine dehiscence

Angular pregnancy diagnosis in the first trimester

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Introduction. Angular pregnancy is the rare condition in which the gestational sac is implanted in the lateral angle of the uterine cavity. Howard Kelly, an American-born obstetrician, described this in 1898 for the first time. Angular pregnancy is considered potentially dangerous and can lead to complications during pregnancy and labor. The increased risk of preterm delivery, placental abruption, growth restriction and postpartum endometritis is associated with angular pregnancy. During pregnancy, pelvic pain, bleeding of different degrees, which may cause spontaneous abortion, uterine rupture may persist, and in the postpartum period it may manifest as placenta accreta, or placental retention associated with hemorrhage. **Materials and method.** Clinical case diagnosed in the firts trimester by 2D transvaginal ultrasound and confirmed by 3D ultrasound. **Results.** The evolution of an angular pregnancy can mimic various obstetric conditions that can manifest clinically in the three trimesters and/or exclusively in labor. Many cases may become undiagnosed because it is rarely encountered, and others are difficult to assess due to the lack of experience of the examiner, to primary ultrasound examination after 9 SA, and to professional underevaluation. **Conclusions.** 3D transvaginal ultrasound diagnosis can diagnose an angular pregnancy. Pregnancy occurring in patients with congenital uterine malformations should be carefully monitored and the correct differential diagnosis made.

Keywords: angular pregnancy, 3D ultrasound

Ovarian stimulation for *in vitro* fertilization

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Introduction. Female infertility remains a mystery that assisted human reproduction departments are trying to uncover. With the advancement of technology and assisted human reproduction techniques, half of the infertile couples have obtained pregnancies, and another half are waiting for fulfillment, following new treatment schemes. The evaluation of an infertile couple requires a complex investigation algorithm that contains a multitude of laboratory analyzes, imaging examinations, and it sometimes requires invasive manipulations for the purpose of diagnosis and treatment. The ultrasound examination always enters the infertility balance because it allows the morphology of the female pelvic organs to be evaluated, in order to identify the etiology, but also to evaluate the ovarian reserve by counting the antral ovarian follicles. **Materials and method.** The method of monitoring ovarian stimulation in assisted human reproduction techniques is the ultrasound. The follicles are counted and measured using a high frequency transvaginal probe, and the ovary image must be magnified so that it occupies at least half the screen. Banner movements must be slow, with constant speed. **Results.** In the cycles in which ovarian stimulation is performed, the ultrasound examination is useful and necessary to assess the effects of stimulation and to determine the right time for the ovarian puncture in the *in vitro* fertilization procedure. The good ovarian response represents the number of large ovarian follicles which at the time of ovarian puncture by ultrasound guidance will obtain an optimal number of mature oocytes. Ultrasound allows the identification of patients at high risk of ovarian hyperstimulation syndrome. **Conclusions.** Transvaginal ultrasound remains the gold standard method that allows the evaluation of the reproductive system within the techniques of assisted human reproduction. In particular, it has become essential for the *in vitro* fertilization in the monitoring process: ovarian stimulation, follicular puncture and embryo transfer.

Keywords: ovarian stimulation, ultrasound, human reproduction

Idiopathic infertility – disease or symptom?

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Introduction. Infertility of unknown cause is defined as idiopathic, if after the examination of a woman, an ovulatory menstrual cycle is found, and also a normal spermogram. In this state of infertility, no changes are detected in the laboratory investigations (hormonal, serological, infectious, genetic) of the partners, where even in minimally invasive operations in women (hysteroscopy, laparoscopy, hysterosalpingoscopy or hysterosalpingo-spelling) no changes are detected. The infertility dilemma increases when other clinical, paraclinical and laboratory investigations confirm the normality of the results. Then, we try alternative methods for the detection and treatment of infertility through consultation with the psychologist, counseling in sexopathology, various couples therapies, physio procedures, Bowen therapy, kinetotherapy, religious spiritual therapy, which in some cases help or complement the treatment of this condition, of unclear or otherwise confused etiology. The blockages of the reproductive system in women and men are often not only of physical cause, but also of psycho-emotional cause (personal frustrations and traumas from childhood, sexual experiences etc.), and can also be related to the environment, economic status, social involvement, life style and professional activity. **Discussion.** Doctors (gynecologists, andrologists, psychologists, sexopathologists etc.) should analyze idiopathic infertility not only as a probable disease, with a series of symptoms that may have different borderline psycho-psychiatric conditions associated with other external factors, which determines it. Normal results on analyses and a couple with difficulties of conception may suggest idiopathic infertility. **Conclusions.** Infertility strongly affects the couple and has a destructive effect on them. Psycho-emotional burden exacerbates the reproductive potential and mimics idiopathic infertility that can sometimes manifest as a symptom, and sometimes as a disease.

Keywords: idiopathic infertility, unknown etiology

Ultrasonographic diagnosis of cervical ectopic pregnancy – case report and literature review

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Introduction. The ectopic cervical pregnancy represents the abnormal implantation and evolution of the zygote at the level of the cervical os. The incidence of the cervical pregnancy varies from 0.5% to 1% of the total of ectopic pregnancies. It is associated with a high potential of morbidity and mortality because of the histological structure and the topographic anatomy of the cervix. The early diagnosis in the first trimester of pregnancy, before the apparition of hemorrhage, is indispensable for the appropriate management, in order to avoid major complications. **Methodology.** We present the case of a 31-year-old patient, with 7 weeks of amenorrhea, diagnosed after a routine obstetrical examination with an ectopic cervical pregnancy. This study also incorporates anterior results referring to: ultrasonographic diagnosis of cervical pregnancy, its importance in early diagnosis, and the innovative modalities of treating this type of pathology. **Results.** The 31-year-old patient, primiparous, with a positive pregnancy test and with 7 weeks of amenorrhea, presents to the "Dr. I.A. Sbârcea" Clinical Hospital of Obstetrics and Gynecology, Brașov, for pregnancy confirmation. Transvaginal ecography revealed a gestational sac implanted at the level of the anterior wall of the cervix, under the internal orifice of the cervical os, under the level of the uterine arteries, which contained an embryo with CRL corresponding to 6 weeks and 4 days of amenorrhea, with fetal cardiac activity present. The patient was hospitalized, and manual vacuum aspiration and uterine curettage were carried out under transabdominal ultrasonographic guidance. The evolution after the intervention was favourable, and the patient was discharged. The percentage of complications of these pregnancies varies between 10% and 62%. In literature, the therapy with methotrexate, the histeroscopic treatment, vaginal hysterectomy and the tamponament with double balloon represent innovative therapeutic approaches to this pathology. **Conclusions.** Transvaginal ultrasonographic exam allows the early diagnosis of cervical pregnancies and allows the early intervention for avoiding severe complications. Ultrasonography also allows the differential diagnosis of cervical pregnancies with other pathologies, such as miscarriage, cervical tumors or degenerated cervical leiomyoma.

Keywords: cervical pregnancy, ultrasonographic exam, secondary amenorrhea

Cervical teratoma – a case report

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Introduction. Cervical teratoma is a rare tumor, accounting for 3% of the incidence rate in newborn teratoma cases, and having a reserved prognosis. **Methodology.** A healthy 31-year-old patient with a 29-week pregnancy sought out our clinic for a routine ultrasound. The fetal evolution has been previously monitored in an inconsistent and aleatory manner. Ultrasound examination showed a wide tumoral mass in the front of the fetal neck, with a mixed cystic/solid component, and the MRI examination confirmed the suspicion of cervical teratoma. The EXIT birth procedure has been proposed, but not practised. **Conclusions.** Although prenatally detected, cervical teratoma and its complications (obstruction of fetal airways, significant extension of the lesion with damage to neighboring structures, fetal hydrops) maintain their reserved and even lethal prognosis, with or without respiratory assistance *ex utero* intrapartum.

Keywords: cervical teratoma, polyhydramnios, exit

Fetal ovarian cyst – a case report

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Introduction. Ovarian cyst represents the most common type of abdominal cystic mass discovered before birth in female fetus, usually in the third trimester of pregnancy. Adapting adequate therapeutic management – without being tempestuous while carefully monitoring the fetus to identify the first signs of complication – allows the favorable prognosis, with the preservation of the affected ovary. **Methodology.** During a routine prenatal ultrasound scan, an intraabdominal cyst was identified in a 31-week fetus, with a diameter of 68 mm, associated with bladder compression and with secondary hydronephrosis. **Results.** Pregnancy is ultrasound-monitored until birth, when the diagnosis of ovarian cyst is confirmed. Because in the first days of life, the renal distension decreases progressively and the newborn has a favorable evolution, it is recommended to adopt a conduct of expectancy with ultrasound monitoring of the cyst up to 6 months. Currently, the newborn is being monitored and the cyst has diminished in size. **Conclusions.** The decision of adopting a therapeutic management approach in the case of a fetal ovarian cyst is made by a team of medical professionals (obstetrician, neonatologist, pediatric surgeon) and depends on the size and structure of the cyst, and the presence and severity of the complications (torsion, hemorrhage, secondary hydronephrosis).

Keywords: ovarian cyst, abdominal cystic tumor, ultrasound

Pre- and postnatal diagnostic discrepancies in the aortic coarctation – case report

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Introduction. The antenatal detection of congenital cardiac abnormalities allows the anticipation and prompt foundation of appropriate postnatal medical managements, with the correct and early involvement of the family regarding the child's condition. The aortic coarctation is one of the most difficult conditions to diagnose before birth, with an incidence rate of 6-8% in congenital heart diseases, which most often goes misdiagnosed, not only during fetal life, but also during the neonatal period. **Methodology.** During a routine prenatal ultrasound, a discrete isolated aortic coarctation was identified in a 32-week gestation fetus. No abnormalities had been identified before and during the routine scans; however, at the 32-week screening ultrasound, a ventricular asymmetry, an abnormal image of 3 vessels and trachea, and a small isthmus could be observed. The diagnosis has been confirmed by the fetal echocardiography performed by the pediatric cardiologist when asked for a second opinion. **Results.** After birth *via* caesarean section, echocardiography indicated the discreet narrowing of the aortic isthm, distal from the left subclavian artery and mild ventricular asymmetry. The newborn has been monitored by ultrasound and by clinical follow-ups, and during the one-month check-up the caliber of the aorta showed normal dimensions. **Conclusions.** The coarctation of the aorta remains a difficult diagnosis to be determined prenatally, and prenatal and postnatal therapeutic approach is decided by a team of medical professionals (obstetrician, neonatologist, pediatric cardiologist), allowing the improvement of the prognosis on short, medium and long term.

Keywords: congenital heart disease, coarctation of the aorta, echocardiography

Aspects of ultrasonography in cervical pregnancy

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Introduction. Cervical pregnancy is a rare form of ectopic pregnancy, and its management varies from one author to another. In addition, the specialized literature is mainly based on case reports. Even though hysterectomy is the reference treatment in cervical pregnancies (especially in advanced forms of pregnancy or in bleeding that may endanger the patient's life), technical improvements in ultrasonography make it possible to diagnose asymptomatic forms, which could be conservatively treated to maintain fertility. **Methodology.** We present the experience of the Gynecology-Obstetric Clinic from Sibiu in the treatment of cervical pregnancy, asymptomatic by early ultrasound diagnosis, by the initial administration of methotrexate intravenously and, subsequently, in the ovule sac, with ultrasound monitoring of trophoblast involution and vascularization in uterine and cervical arteries. **Results.** The administration of methotrexate intravenously and in the ovule sac leads to a slow, progressive reduction of beta-HCG levels throughout several weeks, with maintenance of trophoblast at the cervical level. In case of cervical pregnancy inserted in the post-caesarean section of the scar, the restoration of the quality of the scar by laparoscopic surgical intervention is necessary in order to maintain the reproductive prognosis of the patients. **Conclusions.** Ultrasound is a valuable method of early diagnosis in cervical pregnancy and in monitoring the evolution during the treatment, and also in evaluating the quality of the post-caesarean surgical scar, when appropriate.

Keywords: cervical pregnancy, ultrasonography

Applications of Doppler ultrasonography in the diagnosis of ovarian tumors complications

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Introduction. Ovarian tumors include masses with a fluid or parenchymal cystic character, characterized by typical or abnormal epithelial proliferation. They present an extreme diversity, the classification being realized according to several criteria. Ovarian tumors may be benign or malignant, cystic or solid, uni- or bilateral, secretory or non-secretory, primary or secondary. Ultrasound examination remains the gold standard imaging procedure used in ovarian mass evaluation. Doppler examination evaluates arterial and venous blood flow. The most commonly used Doppler spectral wave parameters are the resistivity index and the pulsatility index. The most commonly encountered complications of ovarian tumors are torsion of the ovary or adnexa, intracystic hemorrhage, as well as their malignant transformation. Although the diagnosis of adnexal torsion is most commonly based on the clinical examination of the patient, color Doppler evaluation may be useful by demonstrating the absence of arterial and venous flow. In case of intracystic hemorrhage, the resorption of the blood within the ovarian cyst determines the distinct ultrasound features, ranging from hyperecogenic aspects identified at the onset of hemorrhage, to hypo-/anecogenic images later. The model of the internal echoes will undergo changes with the passage of time and resorption of the clot. Doppler examination in the presence of intracystic hemorrhage will not reveal internal vascularization. Suggestive criteria for malignant ovarian masses are thick, multiple septations, papillary projections, solid stuctures within the tumor mass and ascites. Doppler ultrasound in malignant tumors identifies vessels of neoformation, which have low pulsatility and resistivity index. **Conclusions.** Color Doppler ultrasound can provide additional information to 2D ultrasound examination regarding the nature of the lesions, their malignant potential, and the presence of the torsion of the adnexa or ovary. The specificity and the positive predictive value of the 2D ultrasound examination in the diagnosis of the ovarian tumor complications increase when an extra examination using color and spectral Doppler is performed.

Keywords: adnexial tumor, Doppler, ultrasound

Small fetal stomach – qualitative or quantitative ecographic analysis?

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Introduction. The amount of fluid in the fetal stomach varies significantly in case of normal fetuses. Changes in fetal stomach volume may be associated with multiple malformations. In case of reduced fetal stomach size, the most frequent associated pathology is esophageal atresia. Although some studies have attempted to make nomograms regarding fetal stomach size, there is currently no consensus on this and many authors still describe a "small or absent" stomach bubble or an "absent or collapsed fetal stomach", without quantification. The ultrasonographic evaluation of the size of the stomach bubble remains subjective, being operator-dependent. This results in an increased number of false positive diagnoses, which leads to patient anxiety, an increase in the number of additional investigations, as well as to higher costs. The objective was to carry out a review of the literature regarding the lower limit of the normal size of the stomach bubble and the implications of this parameter in establishing the positive diagnosis. **Methodology.** We searched for articles from the last five years in the PubMed database using as keywords: small fetal stomach bubble, esophageal atresia, prenatal ultrasound, fetal anomaly scan. **Results.** Prenatal diagnosis of esophageal atresia remains a challenge for sonographers. The main signs identified at ultrasound examination are: small or absent fetal stomach, polyhydramnios and "pounch sign". The prenatal detection rate of esophageal atresia using ultrasonography was reported to be between 24% and 32%. When analyzing the studies, most authors defined the small fetal stomach only as subjective, mentioning either only the "small stomach bubble" or "absent fetal stomach". A quantitative measurement, according to the nomograms, is not used. Nine studies analyzed the detection rate of "absent fetal stomach" or "small stomach bubble" in identifying antenatal esophageal atresia. This ultrasound mark was identified in 50% of cases. The incidence of false positive diagnosis was about 70%. **Conclusions.** With the improvement of other diagnostic modalities in the case of esophageal atresia, the detection rate increases, but ultrasonography remains the easiest method of diagnosis, due to the increased availability. Certain diagnostic criteria, using nomograms of fetal structures, could increase the rate of detection of fetal abnormalities.

Keywords: small fetal stomach bubble, esophageal atresia, prenatal ultrasound, fetal anomaly scan

Association of first-trimester cystic hygroma appearance and chromosomal abnormalities

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Cystic hygroma or lymphangioma was first described in 1843 and represents a lesion that can occur in any anatomical structure of the fetus, but is most frequently found in the cephalic region (75%), especially on the left side of the body. The incidence of the condition is reported as ranging from 1/6000 to 1/16,000 cases. Karyotype abnormalities are found in 20-75% of cases, the most frequently involved conditions being Turner, Down, Klinefelter, Edwards and Patau syndomes. Other nonchromosomal abnormalities associated with cystic hygroma are Noonan, Fryns, multiple pterygium syndomes and achondroplasia. Also, an important association between maternal alcohol consumption and this condition has been observed. We present a series of four cases diagnosed in the first trimester with cystic hygroma and their genetic determinance. The first patient, aged 42, IG, IP, was diagnosed at 11.6 weeks of gestation with a large cystic hygroma covering the entire fetus, omphalocele, atrio-ventricular septal defect, and arthrogriposis. The patient decided to terminate the pregnancy and the karyotype of the abortion product revealed Down syndrome. The second patient, aged 33, VIIG, IIP, with a personal history of a term birth by caesarean section followed by five misscariages in the first trimester, presented at 8.5 weeks of gestation an ultrasound aspect of large cystic hygroma causing double contour suggestive for fetal hydrops and no fetal heartbeat. The karyotype of the abortion product revealed Turner syndrome. Couple karyotyping and genetic counselling were recommended, showing a 46,XX/47,XXX mosaicism in the mother, respectively an addition in the 9th pair of chormosomes in the father – 46,XY,add(9)(p12), for which arrayCGH was recommended in order to detect a possibile chromosomal balanced translocation. The third patient, aged 38, IIIG, IP, with a personal history of two first-trimester misscariages and two failed IVF procedures, presented with a spontaneous pregnancy. At 11.6 weeks of gestation, the ultrasound revealed cystic hygroma, medium size omphalocele, micrograția and small nasal bone. The parents decided pregnancy termination and kayrotyping, which is still in progress. The fourth patient, aged 32, IG, IP, was diagnosed in the first trimester with a large latero-cervical cystic mass, consistant with a lymphatic cyst. The periodic follow-up showed no other abnormalities, and amniocentesis revealed a normal fetal karyotype. The neonate was born at 38 weeks of gestation by caesarean section and presented a normal weight and good adaptation to neonatal life, being programmed for surgery in order to remove the left sided cervical lympahtic cyst sized 12 cm. In conclusion, our small number of cases of fetuses with cystic hygoma suggests a relatively high association with genetic defects, especially in patients with personal history of obstetrical failure, which justifies us to recommend in these cases the genetic testing.

Keywords: cystic hygroma, genetic testing, obstetrical outcome

The role of the 3D/4D ultrasound in fetal routine ultrasound assessment

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Introduction. The 3D/4D ultrasound scan in obstetrics and gynecology has been a research topic ever since its advent in the 80's. If at the beginning its use interested only aspects of maternal-fetal interaction, such as fetal facing, the nowadays technology ensures the assessment of anatomic structures with a resolution similar with the 2D ultrasound. **Methodology.** We analyzed the use of 3D/4D ultrasound in fetal assessment during a 10-year period (2010-2019). We studied the percentage of the cases where the 3D/4D ultrasound was used and also the anatomic structures assessed during our study period – for what purpose these techniques were applied. **Results.** The use of the 3D/4D ultrasound (in various forms: TUI, rendering, STIC) increased during our 10-year study period. The techniques aforementioned allowed a higher analysis of our cases by offering some scanning planes inaccessible to 2D ultrasound. Also, the 3D/4D images were much more suggestive for the patients and very useful in their counseling. The main targets of these techniques were the fetal nervous system, face and heart. **Conclusions.** The 3D/4D has become an integrated part of obstetrical assessment, the storage of volumes capable to sustain the diagnosis and improve the counseling of the patient being its most important aim.

Keywords: 3D/4D ultrasound, fetal ultrasound, prenatal diagnosis

The 11-13 +6-week ultrasound scan in the era of NIPT

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The basic combined test (CRL+NT+blood test) and NIPT (non-invasive prenatal testing) do not have the ability to identify morphological anomalies. New ultrasound machines with improved resolution that provide a good 2D image allow the visualization of the smallest details and together with experienced sonographers increase the detection rate of first trimester anomalies. The 11-13+6-week scan is an accessible investigation that allows preventive and therapeutic measures in certain cases. A normal scan is important for reassurance, especially for patients having an increased risk. We analyzed cases from 2016 to 2019 that had an NIPT performed followed by an ultrasound scan at 11-13+6 weeks. A special attention was given to cases with negative NIPT and chromosomal anomalies diagnosed invasively/postaborum after ultrasound. Between 2016 and 2019, we had 323 patients who had a NIPT screening at 10 weeks and presented for an anomaly scan at 11-13+6 weeks. Among these, we encountered three cases of chromosomal anomalies diagnosed after termination of pregnancy – due to multiple anomalies, one case of spina bifida, and four cases of single umbilical artery. NIPT has become a widely used tool in both high- and low-risk pregnancies and it is obvious that parents expect an honest and complete answer regarding their fetus. Studies available so far show that about 50% of major fetal anomalies can be detected at the 11-13+6-week scan and a complete anatomy scan – for this gestational age – is possible in most cases.

Keywords: NIPT, ultrasound, prenatal diagnosis

Congenital tracheoesophageal fistula: case presentation

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Introduction. Esophageal atresia is the most frequent and most severe congenital anomaly of the esophagus, with an incidence of 1:2500 to 1:4500 births. There are five types of esophageal atresia known, with the most recent form being associated with tracheoesophageal fistula. **Materials and method.** Case presentation. A 27-year-old primiparous patient who performed prenatal screening for fetal malformations, for the first trimester, requested second-trimester morphology ultrasound. On this occasion, minor plihidramnios and unilateral renal agenesis were detected, without any suspicion regarding esophageal malformations. The patient refused to perform third-trimester morphology ultrasound. Although no prenatal diagnosis was established, postnatally, esophageal atresia was suspected at about 4 hours after birth and, subsequently, the association of esotraheal fistula was confirmed. **Conclusions.** Prenatal diagnosis of esophageal atresia is difficult. The suspicion of the existence of this malformation should be considered when other abnormalities are detected, such as the single umbilical artery, polyhydramnios or renal anomalies. Prenatal diagnosis offers parietal counseling, as well as planning for birth and subsequent reconstructive operations, thus reducing the risk of postnatal aspiration pneumonia caused by premature and inadequate breastfeeding of the newborn.

Keywords: tracheoesophageal fistula, single kidney, congenital

Isthmocele from diagnosis to management – literature review

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Introduction. Caesarean section is one of the most common surgeries worldwide, with a progressive increase in incidence over the last decade, approximately 30% of all births being resolved in this way. The isthmocele is a defect of the uterine wall at the level of hysterotomy/raffia that is diagnosed via ultrasound by the presence of a hypoecogenic area with myometrial discontinuity as an indentation of at least 2 mm in the level of a post-caesarean section. Large niches are rare and are defined as having a depth of at least 50-80% of the anterior myometrium or a remaining myometrial thickness of less than 2.2 mm evaluated at transvaginal ultrasound. Small niches may be common and of no clinical significance, while large niches most commonly have long-term complications: abnormal uterine bleeding, infertility, pelvic-abdominal pain, or other obstetric complications such as uterine rupture, invasive forms of ectopic placenta or pregnancy at the level of the old scar. **Materials and method.** In this review, we analyze the hypotheses of the formation of isthmocele, such as the techniques of closing the hysterotomy, the incomplete closure, the location of the hysterotomy wound, the formation of adhesions between the vesicular-uterine peritoneum and the anterior abdominal wall, the specific factors of the patients affected by healing, diagnostic methods such as transvaginal ultrasound or sonography, as well as methods of medicine or surgical treatment by hysteroscopy, laparoscopy, laparotomy or vaginal corrections. **Conclusions.** The high incidence of births by caesarean section also increased the number of complications, such as isthmocele. The recognition of the factors that determine its formation can lead to the adoption of a medical conduct meant to reduce its incidence. On the other hand, its diagnosis and a possible therapeutic approach can reduce the rate of complications which the presence of an isthmocele can cause.

Keywords: isthmocele, niche, caesarean section, transvaginal ultrasound

Difficult counseling in maternal-fetal medicine – achondroplasia

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Introduction. Achondroplasia is a genetic disease mainly caused by the mutation of the FGFR3 gene (in approximately 97% of cases), located on chromosome 4. The consequence of this mutation is the ceasing of bone growth and development in the intrauterine period, resulting in the "disharmonic" dwarfism. It affects especially the limbs. Routine ultrasound evaluation may raise the suspicion of the diagnosis of achondrodisplasia, in the case of a qualitative bone anomaly, or of a short femur for the gestational age, anomalies of the fetal profile, the shape and presence of the vertebral bodies, as well as the aspect of the limbs. Prenatal genetic diagnosis can be made using amniocentesis, biopsy of chorionic villus sample and the determination of free fetal DNA in the maternal blood. **Methodology.** We present the case of a patient at the age of 40 years old, primiparous, pregnant in 30 weeks, with suspicion of fetal malformation in the group of achondrodysplasia, who came to the "Dr. I. Cantacuzino" Clinical Hospital for a second opinion, type specialized consultation. Both the patient and her husband have a normal stature, with no significant family history known. The patient had been monitorized from the first trimester of pregnancy in another specialized service, with a normal course of pregnancy, up to 26 weeks of gestation, when she performed a routine ultrasound. The ultrasound results revealed a femur length <1%, without other developmental anomalies. **Results.** The ultrasound performed at 30 weeks of gestation showed a length of the femur and humerus below the 1% percentile, as well as biparietal diameter increased above the gestational age limit. The patient is presented with the possibility of performing genetic tests, but she refused, willing to request a second opinion abroad. **Discussion.** Achondroplasia is a genetic disease, with dominant autosomal transmission, with full penetrance. The incidence of achondroplasia is between 5 and 15 per 100,000 births. The accurate diagnosis is particular, since it is mostly a diagnosis of the second or even third trimester, and the counseling is difficult.

Keywords: achondroplasia, ultrasound diagnosis, genetic tests, bone anomalies

Ultrasound exam of urinary stress incontinence after surgical procedure – case report

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Introduction. Anatomical changes of pelvic structures represent the most important causes of pelvic disorders and dysfunction of organs from this region. Urodynamic tests represent the most important method for the diagnosis of urinary incontinence, but still there are no standard indicators described. Mictional cystography helps to identify the anatomical changes. Ultrasound is useful to identify anatomical and position changes of urethra and has the advantages of being a cheap and noninvasive procedure. In addition, ultrasound is useful for the evaluation of pelvic disorders after surgical procedure, especially for surgical techniques which used polypropylene mesh. In these cases, ultrasound identifies certainly the location of polypropylene mesh and the function of pelvic structure in rest and in stress. **Methodology.** We report the case of a 64-year-old woman who undergone surgical procedure in 2013 for urinary stress incontinence reappeared after two surgical interventions in 1990 and 1994 (Marion-Kelly uretroplasty and anterior colporaphia). The last intervention for the correction of urinary incontinence was a retro pubic procedure with polypropylene mesh. The patient comes for a routine exam after 7 years after the last surgical procedure. The clinical exam with a volume of urinary bladder of 180-200 ml proves urinary continence for Valsalva exam and cough. For the ultrasound exam, we used a convex probe of 6 MHz placed at vaginal intro. **Results.** The sections obtained in mediosagital section in rest and during Valsalva exam prove the normal function of proximal urethra, the stability of middle urethra according to pubic symphysis and a correct position of polypropylene mesh. **Conclusions.** Ultrasound is useful to identify pelvic static disorders. Transperineal or transvaginal ultrasound (at vaginal intro) can reveal important information after surgical procedure considering the efficiency of surgical technique especially for the correction of urinary incontinence with polypropylene mesh.

Keywords: urinary stress, transperineal ultrasound

Ultrasonography of the fetal adrenal gland – premature birth marker. Stage results

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Introduction. The activation of the fetal hypothalamo-pituitary-adrenal axis (HPA) with the switch in the synthesis of DHEA/DHEAS/cortisol in the fetal area under the influence of placental CRH is a trigger of birth in mammals and humans. The fetus influences the duration of gestation, increased myometrial contractility by changing fetal cortisol/DHEA and maternal progesterone/estradiol ratios from the hypothetical estradiol-fetal HHS axis. 2D/3D measurement of fetal adrenal volume – an indirect measure of the exacerbation of function – shows a correlation between its increasing size and triggering birth. **Working hypothesis.** Enlargement of the fetal area appreciated in the posterior antero diameter is a sonographic marker for the time of birth in 5-7 days. **Objective.** Measuring the fetal area (ZF) from week 26 in order to predict birth. **Materials and method.** Prospective study at the "Dr. I. Cantacuzino" Maternity on three groups with single pregnancies (A – apparently normal, B – with preexisting diabetes mellitus, C – premature membrane rupture, from group A), sonographically evaluated at 26-28, 30-32, 34- 36 weeks for calculating the ZF ratio (ZF depth measured in a sagittal plane) with estimated fetal weight (EFW) at the mentioned gestational ages. **Results.** In group A, ZF increased (0.32 to 0.84 at 26-29s; 0.4 to 0.7 at 30-34s; 0.91 to 1.03 at 36 weeks) parallel to EFW, the EFW/ZF ratio ranged between 2.3 and 1.34/26-29 s; 4.2 and 4.44/30-34s and 3.08 at 2.71/36s. In diabetic patients, ZF increased from 0.29 to 0.56/30-32s; the EFW/ZF ratio decreased from 6.39 to 5.18. In group C, both parameters increased, and the ratio decreased from 2.5 to 1.9. Premature birth in two cases (A and B) at an interval of 7 days, a ratio of 4.76 and 5.18, respectively. **Conclusions.** ZF sizes increase from 26 weeks, more in diabetic pregnant patients (30-32 weeks), without correlating with the membrane rupture. Data are consistent with those from the specialised literature in the case of asymptomatic/symptomatic pregnant patients for premature birth. In reduced number of cases, the prediction of birth cannot be made.

Keywords: fetal adrenal gland, diabetes, membrane rupture, birth

Is pelvic MRI a necessary complementary examination to ultrasound?

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Adnexal masses are frequently detected by ultrasound and pose diagnostic problems, because sometimes benign and malignant characteristics overlap. MRI is preferred as a second imaging method for the evaluation of an insufficiently defined adnexal mass, in order to provide the best care. Magnetic resonance imaging allows more accurate and complete diagnosis and staging than ultrasound, especially in cases of deep pelvic endometriosis. In addition, MRI can identify implants at sites difficult to access by laparoscopy. The first-line examination of pelvic venous insufficiency, frequent in multiparous women, is ultrasound and Doppler, but MRI, which is less invasive than venography, allows even a 3D study of pelvic varicose veins. In assessing the pelvic diaphragm, ultrasound and MRI are comparable and demonstrate a moderate value. Non-visualization of ovaries by ultrasound and magnetic resonance-guided focused ultrasound in the non-invasive treatment of uterine fibromas represent other situations that prove the increasingly frequent need to associate pelvic MRI with ultrasound.

Keywords: MRI, 3D study

Single umbilical artery as a risk marker in first trimester morphology. Series of recent cases in the "Dr. I. Cantacuzino" Clinical Hospital

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Introduction. The single umbilical artery (SUA) is characterized by the absence of an umbilical artery. This anomaly has a reported incidence of up to 1% of pregnancies. The ultrasound discovery of the existence of a single umbilical artery requires careful evaluation in order to identify any associated fetal malformations, the incidence of which is increased. In the absence of the association of other ultrasound anomalies, it is not necessary to perform the fetal karyotype. **Materials and method.** We monitored four patients observed directly in the "Dr. Ioan Cantacuzino" Clinical Hospital, 1st Clinic of Obstetrics-Gynecology, detected with fetal AOU at the first trimester morphological screening. **Results.** Between 1.02.2017 and 20.12.2019, at the first trimester ultrasound, four pregnant patients were diagnosed with SUA and without other obvious malformations. One patient refused aneuploidy screening and any other supplemental analysis, except for simple pregnancy monitoring, and the remaining three had an increased (1/1/28) or intermediate (below 1/250) risk of aneuploidy, from which one case of trisomy 21 was confirmed. **Conclusions.** In the four cases with SUA, three cases were tested and all were associated with an increased risk of first-trimester aneuploidy, out of which one was confirmed with trisomy 21. In the specialized literature, cases where SUA is the only anomaly have a good evolution, the most frequent complication being intrauterine growth retardation, but they are also associated with cardiovascular malformations, renal or gastrointestinal malformations, therefore a detailed anatomical evaluation and rigorous monitoring of fetal growth is recommended, with adequate maternal counseling.

Keywords: single umbilical artery, morphological ultrasound, first trimester, risk of aneuploidy

Ultrasonographic diagnosis and prognosis of ureterohydronephrosis in twin pregnancy – case study

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Introduction. The fetal urinary tract anomalies appear to be among the most frequent ultrasonographic diagnosis. Usually, the pathologies consist of obstructive uropathies. Congenital abnormalities of the urogenital tract have a higher incidence in monochorionic twin pregnancies. The importance of an early diagnosis relies in an improved fetal prognosis and in the precocity of the therapeutic attitude in critical obstructions, thus leading to diminishing complications such as kidney failure. **Methodology.** We analyzed the case of a monochorionic, diamniotic twin pregnancy, with male fetuses, in a 28-year-old secundiparous, in the "Dr. I.A. Sbarcea" Clinical Hospital of Obstetrics and Gynecology, Braşov. The ultrasonographic examinations were performed monthly and included fetal biometry and morphology assessment, using a General Electric SSH equipment. Two ultrasound examinations were performed by an obstetrician with fetal morphology competence, at 22 and 25 gestational weeks, and a urinary tract anomaly was detected. Morphological changes of fetal kidneys: ectases versus hydronephrosis, amniotic index changes, as well as biometric differences of the two fetuses were compared during the subsequent examinations. **Results.** Both fetuses evolved without differences in the symmetry or weight estimation at the time of examination. The separation being verticalized, the first fetus was considered to be the one on the left side, and the second one on the right side of the mother. The left postero-lateral placenta in the middle position with respect to the sagittal axis was maintained throughout the dispensation with maturity degree 0 in the Grannum classification. At 22 gestational weeks, a bilateral pielo-caliceal anomaly was diagnosed in the first fetus. At 25 weeks of gestation, the obstructive anomaly was confirmed and the ultrasound diagnosis of fetal bilateral hydronephrosis was established, probably by bilateral ureteral stenosis. At 31 weeks, a decrease in the amniotic index was observed by diminishing the amniotic bundles of the abnormal fetus. Fetal extraction was proposed once lung maturity was reached. **Conclusions.** Ultrasonographic screening is absolutely necessary for the diagnosis of urinary tract anomalies. Frequent and dynamic examination of pyelocaliceal features, correlated with Doppler cerebrovascular indices, will determine the fetal status and the adequate therapeutic attitude.

Keywords: pielo-caliceal dilation, ureterohydronephrosis, twin pregnancy

Recurrence of borderline ovarian tumor – case report

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Introduction. Borderline ovarian tumors (BOT) or low malignant potential tumors (LMP) are epithelial tumors having a low potential of evolving as metastatic diseases and a low incidence. They represent 10% of all ovarian epithelial cancers and they have intermediate histological and biological characteristics, common to both clear, benign ovarian cysts and invasive carcinomas. **Methodology.** We present the case of a 27-year-old female who presented in our department accusing moderate abdominal pelvic pain. The obstetrical history was negative and the patient was known to have polycystic ovary syndrome, spaniomenorrhea and dysmenorrhea. CA125 value was 316 U/mL, and CA19-9 – 2000 U/mL. Transvaginal ultrasound (TV-US) showed an unilateral tumor, encapsulated, mainly fluid, with a complex US structure, 70/60 mm in diameter (right ovary). Typical images of papillary projections were present, and the color Doppler score was 2. Normal ovarian parenchymaadjacent to the tumor formation could not be demonstrated. The left ovary and the myometrium were normal, and there was no fluid in the pouch of Douglas. Both computed tomography scanning and magnetic resonance confirmed the ultrasound features. No adenopathy or secondary determinations were detected. **Results.** Laparoscopic surgery was offered. The intact capsule tumor of the right ovary was found, with no other pathological processes in the peritoneal cavity. Right adnexectomy, partial omentectomy, left ovarian biopsy, appendectomy, right parieto-colic space brazing and right subdiaphragmatic brazing were performed. Extemporaneous examination confirmed the borderline serous tumor. Subsequently, periodically assessment was performed, by means of serum markers testing and imaging methods. Three months later, a new tumor was found on TV-US, located on the left ovary. It had only 20 mm, but the US features were similar. One only papillary projection was seen and the color Doppler score was 0. Partial left ovarian resection was performed, also using the laparoscopic approach. The histopathological examination confirmed the borderline serous tumor. Currently, the patient is asymptomatic by means of clinical exams, serum markers testing and imaging. **Conclusions.** The positive diagnosis of LMP remains histological, but the imaging assessment has a critical role in staging and managing the disease. TV-US holds the place of first-line testing, due to cost efficiency and suitability. The distinctive feature of this case is the early occurrence of the contralateral ovarian borderline serous tumor, which required the partial contralateral ovariectomy following adnexectomy, in a very young patient having no obstetrical history. This raised difficult issues for long-term fertility counseling and management.

Keywords: borderline ovarian tumor, recurrence, transvaginal ultrasound

Fetal intraabdominal cystic formations: antenatal diagnosis and follow-up. A few cases from the experience of the Obstetrics-Gynecology Clinic of the "Dr. Ioan Cantacuzino" Clinical Hospital

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Introduction. Fetal abdominal masses represent a wide spectrum of pathological entities, which may represent important causes of morbidity or may develop asymptomatically until they disappear, without significant sequelae. **Methodology.** We present a series of seven cases followed in the Clinic of Obstetrics-Gynecology of the "Dr. I. Cantacuzino" Clinical Hospital during the period 1.03.2015 – 1.02.2020, when intraabdominal cystic formations during pregnancy were detected ultrasonographically. The patients were followed-up antenatally through serial ultrasound, and all cases benefited from multidisciplinary counseling (neonatologist, pediatrician and obstetrician). In cases where the formation persisted postnatally, the newborns benefited from postnatal follow-up. **Results.** During the period 1.03.2015 – 1.02.2020, seven pregnant women, aged between 20 and 35 years old, were followed-up, during which fetal intraabdominal cystic formations were detected during pregnancy. In all seven cases, the diagnosis was made during the second or third trimester. Out of the seven cases, six fetuses presented ovarian cysts out of which: four cases with cystic formation of over 5 cm – two benefited from surgical intervention; two cases with cystic formations below 5 cm with spontaneous antenatal regression; one case presented a cystic formation <5 cm, located on the median line – urachal cyst, in dimensional regression up to 7 mm at 37 weeks. Two of the four cases that had ovarian cyst >5 cm associated other ultrasound anomalies – one of the two fetuses presented unilateral renal agenesis and the other one associated a renal cyst formation (simple renal cyst) in dimensional regression during pregnancy. **Conclusions.** The intraabdominal cystic lesions revealed antenatally in the fetus represent a vast pathology, with different embryological origin and evolution. In the experience of our clinic, most asymptomatic cases develop favorably, without significant sequelae, only the fetuses with large, complicated cystic formations, benefiting from postnatal surgical treatment.

Keywords: cystic formations, pregnancy, antenatal diagnosis

Uterine carcinosarcoma – case presentation. Short review of literature

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Introduction. Uterine carcinosarcoma (UCS) represents an extremely rare pathology, approximately 2-4% of all uterine malignancies. The 5-year prognosis is poor, with a survival rate of only 10-30%. We report a case of UCS diagnosed in a 62-year-old female patient who presented a postmenopause vaginal bleeding. The management of UCS remains difficult, more extrapolated from dedicated studies for endometrial neoplasia and uterine sarcoma. This paper offers a short critical review of literature, pertinent from the point of view of the pathology, diagnosis and management of patients with UCS. **Methodology.** In the presented case, the histological diagnosis of UCS was a post-surgery surprise diagnosis. All the modern imagistic methods of diagnosis failed to provide suggestive information for the presumed diagnosis of this type of lesion. We present a short review of literature using the Medline database of the past 20 years. Due to the rarity of this type of tumor, studies are limited by design and by number of patients. **Results.** UCS represents a type of endometrial carcinoma with its own pathogenesis and a different molecular profile. Usually, UCS imitates an extrauterine condition that is identified during extensive surgical staging. Most patients diagnosed with UCS are good candidates for adjuvant chemotherapy. The role of radiotherapy is still under discussion. Combined therapy, even though it is frequently used, is still in study. The high rate of recurrence and the poor global prognosis of this condition suggest the necessity of specific clinical trials of UCS. **Conclusions.** UCS is a distinct subtype of uterine malignancy with different diagnostic and therapeutic approaches. We recommend all practitioners to have an increased vigilance in the early diagnosis of this lesion, as well as in the proper therapy.

Keywords: uterine carcinosarcoma, UCS, rare pathology

The utility of real-time elastography in diagnosing cervical cancer and cervical intraepithelial neoplasia – final results

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Introduction. The aim of the study is to analyze the utility of real-time elastography (RTE) in diagnosing cervical cancer (CC) and cervical intraepithelial neoplasia (CIN), using an experimental device (ED) made from a synthetic material as benchmark of rigidity. **Methodology.** Seventy-nine patients were involved in the study, being divided into three groups: Group 1 – benign cervix (n=39); Group 2 – CIN (n=32); Group 3 – CC (n=8). Seventy-nine identical silicone DEs were created. RTE was performed and the strain ratio (SR) method was used to quantify stiffness, representing the ratio of stiffness between the analyzed cervical tissue and ED. The average SR values corresponding to each group were compared. The diagnostic performance of the method was evaluated by generating the ROC curve and analyzing the area under the curve (AUC). Cut-off values were set. The histopathological results were the benchmark for data interpretation. **Results.** The average value of SR for Group 1 was significantly different from that of Groups 2 and 3 (p=0.001). After the exclusion of two aberrant values from Group 3, attributed to complicated cases with hemorrhagic necrosis, significant differences of the average SR between Groups 2 and 3 were observed (p=0.02). For Groups 1 and 3, the AUC was 0.966, with 95% CI (0.914-1.000); the cut-off value of the SR was 1.42, with a sensitivity of 100% and a specificity of 94.9%. The AUC was 0.752, with 95% CI (0.629-0876) for Groups 1 and 2; the sensitivity and specificity were 75%, respectively 74% for the cut-off value of 1.03. **Conclusions.** RTE, quantified by SR, using a synthetic reference material, seems a reliable method of differentiating the benign cervix from the malignant one; the technique proves promising results as a complementary method in CIN evaluation and diagnosis. Nevertheless, SR becomes inoperative in cases of cancer complicated by extensive hemorrhagic necrosis.

Keywords: elastography, CIN, cervical cancer

Ovarian endometrioma rupture during pregnancy – a rare complication? Case presentation and literature review

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Introduction. Ovarian endometriomas are benign tumors that modify their morphology and evolve differently during pregnancy, making these cases a real subject of interest. The present study will present a case of ovarian endometrioma diagnosed in the third trimester of pregnancy, focusing on complications and the management of the patient. We compared our results to those from the literature, following a thorough revision of the past studies. **Methodology.** We identified a rare case of ovarian endometrioma in a pregnant patient. Several ultrasound examinations were performed, correlated with serum concentration of CA-125 and HE4 to carefully follow any changes in the endometrioma's evolution. This study also included 20 other studies from the literature regarding the natural history, diagnosis and management of ovarian endometriomas in pregnancy. **Results.** The patient, aged 33, primigesta, was diagnosed with an ovarian cyst of 5 cm, early in pregnancy. The ultrasound aspect of the cyst pleaded for an endometrioma, but no other symptoms were recorded. During the first trimester of pregnancy, the tumor increased in size continuously. Serum concentrations of CA-125 and HE4 were constant at the beginning, but as the cyst was growing, so were the marker's levels. At 15 weeks of gestation, the transvaginal ultrasound examination revealed a 7-cm ovarian tumor and intraperitoneal fluid, as the patient was admitted to the hospital for an acute surgical abdomen clinical picture. The patient underwent surgery, an ovarian endometrioma rupture was identified, and the management consisted of removing the ovarian cyst. The clinical and paraclinical evolution was favorable, and the pregnancy reached the term. The histopathological exam confirmed the ovarian endometrioma diagnosis, and a decidual transformation was also observed. **Conclusions.** The progesterone during pregnancy usually shrinks the ovarian endometriomas. In the reported case, the increase of the endometrioma size might be due to serum levels of CA-125 and especially of HE4 – which ensures the differential diagnosis with malignant tumors. The rupture of endometriomas during pregnancy is a very rare complication. Their growth, which is an atypical phenomenon, predisposes to other acute complications.

Keywords: endometrioma, CA-125, HE4, pregnancy

Ultrasound diagnosis in twin pregnancy with intrauterine death of the first fetus – case presentation (poster)

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Introduction. Twin pregnancy consists in the development of two fetuses in uterus, being monozygotic or dizygotic. Because of multiple complications, twin pregnancy and birth are considered to be very risky. Repeated ultrasound examinations can show anomalies of the twin pregnancy. In some cases, the intrauterine death of a fetus is not accompanied by a suggestive symptomatology, but in other cases, it can be accompanied by a light bleeding. After the intrauterine death of one of the fetuses, a twin pregnancy can finish with the bith of a healthy child. **Methodology.** We present the case of a primiparous, with twin pregnancy biamniotic, dichorionic and with the intrauterine death of one of the fetuses at 24 weeks of gestation. The patient was followed-up at the "Dr. I.A. Sbârcea" Clinical Hospital of Obstetrics and Gynecology, Brașov. **Results.** A 22-year-old pregnant patient followed-up with a twin pregnancy from 9 weeks of gestation and examined in dynamics by ultrasonography showed a progressive discordant fetal development throughout pregnancy. After the discovery of only one umbilical artery and the generalized hydrops of the first fetus, amniocentesis was performed. At 24 weeks of gestation, the ultrasound examination showed no cardiac activity of the first fetus. The second fetus developed until 32 weeks and 5 days, without pathological particularities. The child was extracted through caesarean section, being a male newborn, weighting 1660 g, lengthening 40 cm and with an Apgar score of 8. **Conclusions.** Ultrasound technology plays an essential role in the management of multiple pregnancy. The comparative ultrasound examination of fetuses is useful and imperiously required since the first weeks of pregnancy in order to predict the discordant development of fetuses, the complications or the intrauterine death of one of the fetuses, and also the complications that come after. Careful monitoring allows us to reduce the maternal and perinatal mortality and morbidity.

Keywords: twin pregnancy, ultrasound examination, fetal intrauterine death

Ultrasonographic aspects in virilizing tumors: clinical-hormonal correlations

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Introduction. This paper presents the ultrasonographic appearance in virilizing ovarian tumors through abnormal local production of androgens in clinical and endocrine report. **Methodology.** The general data related to the objective are introduced. Three case studies on Leydig-Sertoli cell tumors, namely only Leydig or only Sertoli, will be exemplified. **Results.** In tumors with virilizing potential such as those with Leydig cells, rare neoplasms that are usually unilateral ultrasonographically, well delimited, often of small size, with appearance of intraovarian solid nodules with slightly greater echogenicity than the surrounding ovarian tissue with increased vascularization, the use of the Doppler signal is essential for diagnosis. Usually, these tumors are benign, so the border is well drawn and there are no local adenopathies. They may be pre- or postmenopausal, and the virilization syndrome with relatively sudden onset (alopecia, thickening voice, hirsutism, polyglobalgia, hypertension) is accompanied by elevated values of plasma testosterone (>X2-3 times) with suppressed FSH and does not correlate ultrasonographically. **Discussion.** Ultrasonographic limits in Leydig cell tumors are due to the fact that frequencies can escape localization by traditional screening examination. Moreover, the examinations of computer tomography type (possibly combined with positron emission tomography or PET-CT) or nuclear magnetic resonance increase the detection rate, but the ultrasonography remains the most useful diagnosis and monitoring method (transvaginal probe), while other imaging methods are used only when needed. If the hormonal panel excludes the androgenic adrenal source, intraoperative exploration is necessary for the adnexal region with the resection decision accordingly. A special note: the utility of the thyroid ultrasound for differentiated cancer related to DICER mutation in patients with virilizing tumor. **Conclusions.** Ultrasound is a *sine qua non* stage in the management of androgen-producing tumors.

Keywords: ultrasound, tumor, testosterone

Umbilical cord pathology

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Introduction. The umbilical cord is an important component of the fetal-placental functional unit, with a major role in fetal oxygenation. Prenatal diagnosis of umbilical cord anomalies helps to anticipate perinatal hypoxic-ischemic fetal distress and can guide the therapeutic attitude depending on the severity of fetal distress, being able to be responsible for premature birth, intrauterine growth restriction, low birth weight and death in the uterus. **Methodology.** For our work, we have selected a number of cases of umbilical cord pathology, also tracking their pathophysiological implications on the pregnancy, as well as the evolution of the intra- and postpartum fetus. **Results.** Umbilical cord pathology can be classified into tumor pathology, represented by aneurysms, varicose veins, cysts, vascular anomalies of the following types: supranumerous vessels, single umbilical artery, umbilical cord insertion anomalies, such as velamentous insertion, fetal cord insertion anomalies, twist or spiralation, true umbilical cord knots. **Conclusions.** The umbilical cord pathology can be diagnosed by ultrasound examination starting with week 8 of pregnancy, so that both the prognosis and the therapeutic status depend on the time of diagnosis.

Keywords: umbilical cord, fetal oxygenation, pathology

Intrauterine growth restriction in association with triploidy – case report and literature review (poster)

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Twenty percent of chromosomally abnormal first-trimester miscarriages are represented by triploidy. This chromosomal abnormality occurs in 1 of 3500 pregnancies at 12 weeks, 1 in 30,000 at 16 weeks, and in 1 in 250,000 at 20 weeks of gestation. There are just a few cases reported in the literature, because the vast majority of them are miscarried. We are presenting the case of a young female patient whose first-trimester screening echography didn't reveal any risk for trisomy 13, 18 and 21, but a further evaluation at 19 weeks of gestation found a seriously deterioration of the growth curve, with severe intrauterine growth restriction (IUGR), which led us to the indication of an invasive diagnostic method. The amniocentesis revealed a triploidy and the decision of the abortion was the one the patient has chosen. In case of severe IUGR in the absence of frequent syndromes, triploidy could be one of the causes and the amniocentesis could set the diagnostic and impose the subsequent approach.

Keywords: triploidy, first trimester, amniocentesis

MRI versus ultrasound in the diagnosis of endometrosis

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Introduction. Endometriosis is a chronic pathology, in most cases very painful, in which the functional endometrial tissue is located outside the uterine cavity, such as in the ovaries, the posterior pouch of Douglas and uterus-sacral ligaments. Endometriosis is a known cause of infertility, but nowadays, in clinical practice, it is challenging to diagnose this pathology because of nonspecific symptoms. **Methodology.** We conducted a systematic review, which included retrospective studies for the last three years, both on the sensitivity of transvaginal ultrasound and the sensitivity of MRI for the diagnosis of endometriosis. **Results.** Out of 112 patients with endometriosis, 43% of cases were diagnosed using transvaginal ultrasound examination and 57% with MRI. A single imaging method for diagnosis is not enough for the complete diagnosis of endometriosis and to establish the disease extension. Transvaginal ultrasound is the most effortless procedure to perform, being also used to identify the topography of endometriotic lesions. **Conclusions.** Examination by magnetic resonance imaging increases the accuracy of the diagnosis, which is excellent for the surgical management. It is worth mentioning that the examiner's experience has a great importance in the diagnosis of endometriosis.

Keywords: endometriosis, ultrasound, MRI

Premature cervical remodelling. Risk of premature birth

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Modifications of structural-molecular, biochemical, mechanical remodeling of the cervix stroma with an early onset, with progressive evolution in pregnancy, birth, postpartum, in four stages – "softening, ripening, dilation, repair" – parallelly with the myometrial, placental modifications of the amniotic fluid dictated by the embryo-fetal development are considered factors for premature birth and membrane rupture. Premature cervical remodeling which is similar, but not identical to the full-term one, differentiated by timing, may be correlated with premature fetal adrenal changes. Dynamic transvaginal ultrasounds at 16 to 23 weeks detect subtle changes of cervico-isthmic remodeling: cervix length, anterior cervical angle, sludge, dilation of internal orifice with funneling: percentage, T/Y/V/U shape, depth and width, protruding aspect of the lower pole membranes, and measuring the length of the closed portion of the remaining cervix when the lower pole membranes are clock top-like, are broken, or vaginal bleeding is active, the distance of the mucus/gelatinous plug. A cervix of ≤25 mm is associated with amniocorrhagic inflammation and a cervix of ≤15 mm at 22-30 weeks increases the risk of infection. Combining ultrasound with elastrography, a specially modified transducer applied at the level of the internal cervical orifice has been associated with a software system to estimate secondary/transverse/elastic S-acoustic waves (SWEI method) with the evaluation of cervix length and elasticity/consistency. In normal pregnancies, the constant reduction of weekly consistency from 12 weeks with 9% in the upper part and 2% in the lower part of the cervix was observed, that is a gradient of the shear wave speed along the cervix length, not influenced by the cervical angle and parity. The situation corresponds ultrastructurally to the orientation and displacement of collagen fibers from the stromal extracellular matrix of the cervix area, where, inadequate from a temporal point of view for the pregnancy, funneling develops prematurely. Vaginal progesterone increases cervical rigidity, the mechanical support through cerclage/pesar extends the single/multiple pregnancy sometimes until full-term, questioning the elective/urgent application – the initial/emergency phase – in cases of cervical incompetence. Prospective/retrospective, randomized, meta-analysis studies analyze them separately or progesterone and pesar as auxiliaries to the cerclage.

Keywords: cervical remodeling, prematurity, progesterone, cerclage, pesar

The use of ultrasonography in diagnosing intrauterine growth restriction by placentary vascular remodeling. Applied decision algorithm

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Introduction. Regarding placental vascular remodeling the main maternal and fetal complications: intrauterine growth restriction (IUGR) and preeclampsia. Since 2016, as a result of the studies developed by Figueras and Gratacos, there is a consensus for the IUGR diagnosis that can be clinically implemented by using the Fetal Barcelona decision algorithm. **Materials and method.** We illustrate three cases of Fetal Barcelona algorithm applied. This algorithm integrates the ultrasound findings and offers directions of conduct. The diagnosis of IUGR is performed eminently through ultrasound. **Results.** *Case 1:* IUGR complicated with premature abruption of the placenta normally inserted at the primiparous patient.A premature IUGR at 22 weeks, under aspirin prophylaxis; amniocentesis is practiced, genetic causes are excluded, and she is monitored according to the Fetal Barcelona algorithm. Birth at 28 weeks of a live fetus, 550 g, with death at two months. *Case 2:* premature IUGR complicated with premature membrane rupture, secondiparous, with a history of preeclampsia. Diagnosis at 26 weeks. Amniocentesis is practiced to exclude genetic causes and due to the detection of intraabdominal calcifications, normal molecular karyotype. IUGR Stage I, according to the Fetal Barcelona decision-making algorithm. At 34 weeks, spontaneous membrane rupture and the patient gave birth by caesarean section to a live female fetus, 1480g, Apgar score 8. *Case 3:* Severe premature IUGR with signs of placental insufficiency. A 33 year-old patient, primiparous, with pregnancy of 27 of weeks, complicated with severe premature IUGR. She has benefited from aspirin prophylaxis, 100 mg/day, since 12 weeks. At diagnosis, she was in stage 2. At 28 weeks, she reached stage 3 due to rapid Doppler deterioration, and at 28 weeks + 5 days, according to neonatology and after ensuring fetal neuroprotection, caesarean section, the patient gave birth to a live male fetus, 600 g, Apgar score 6. Premature death. **Conclusions.** Intrauterine growth restriction continues to be one of the most common pathologies in obstetrics, having fetal and neonatal effects, as well as in the adult. This condition remains the "practitioner's dilemma" because the current level of knowledge cannot establish an etiological treatment.

Keywords: intrauterine growth restriction, decision algorithm

Conjoined twins – early prenatal diagnosis

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Introduction. Conjoined twins represent a high-risk pregnancy for both the pregnant and the fetus. The objective of our paper is to present a rare case of conjoined twins diagnosed early in the first trimester of pregnancy. **Methodology.** We present a rare case of abortion in the first trimester in a pregnancy with conjoined twins, at 12 weeks of gestation. The abortion occurred without complications, and the two fetuses were analyzed anatomopathologically, thus correlating the ultrasonography data with the anatomy of the fetuses. **Results.** In our case, the twins presented multiple fusion areas in the chest, abdomen and pelvic area. The two fetuses did not present individual movements. **Discussion and conclusions.** The early diagnosis of conjoined twins is of major importance, the patient having the option to interrupt the pregnancy in the first trimester.

Keywords: conjoined twins, ultrasound diagnosis, early diagnosis

The diagnosis of uterine adenomyosis

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Introduction. Uterine adenomyosis is a common gynecological pathology characterized by islands of endometrial tissue in the hyperplasic and hypertrophic myometrium. The objective of this paper is to identify the diagnosis methods used to detect adenomyosis lesions, in order to apply the means of treatment to symptomatic patients. **Methodology.** Our study is a review of the literature regarding the means of imaging diagnosis available for adenomyosis. Therefore, we researched the PubMed and Medline databases, during the period January 1st 2000 – November 1st 2019, using the keywords: adenomyosis, imaging diagnosis, transvaginal ultrasound and nuclear magnetic resonance. **Results.** We identified a total of 189 studies referring to the diagnosis of uterine adenomyosis, and after applying the inclusion/exclusion criteria, there were 26 studies left. The most common diagnostic means are transvaginal ultrasonography, nuclear magnetic resonance and hysteroscopy. Ultrasound diagnostic criteria for adenomyosis, as well as disease detection rate were identified. **Conclusions.** Adenomyosis is an underdiagnosed and rarely treated gynecological condition. Our study identified the criteria for ultrasound diagnosis, with transvaginal ultrasonography being the easiest and most widely used for the diagnosis of adenomyosis.

Keywords: adenomyosis, ultrasound diagnosis, transvaginal ultrasound

Prognostic value of ultrasound markers of fetal cardiac dysfunction

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Introduction. The fetal cardiac function is affected both in cardiac malformations and in the adaptation to various pathologies, such as twin-to-twin transfusion syndrome (TTTS), intrauterine growth restriction (RCIU) and diabetes. Knowing the pathophysiological mechanisms helps to optimize the perinatal management. Therefore, the development of early and viable diagnostic techniques for fetal cardiac dysfunction is being attempted. The objective of the study is to identify the ultrasound markers of fetal cardiac dysfunction that influence the fetal prognosis. **Methodology.** The literature regarding fetal cardiac function and prognostic ultrasound parameters has been systematically reviewed, searching the PubMed website for articles published in English in the past 10 years following the algorithm (fetus OR fetal) AND echocardiography AND (cardiac function OR cardiac dysfunction) AND (prognosis OR prognostic OR outcome). **Results.** A total of 141 relevant articles were identified, published with a constant annual frequency and distributed as follows: review/opinion articles (14); heart malformations (65); normal structural cord (62): IUGR (16), diabetes (12), TTTS (8), arrhythmias (7), others (19). In the case of cardiac malformations, ultrasound parameters specific to each pathology were described. For the normal structural heart, diastolic dysfunction and abnormal myocardial deformation are the earliest signs, but they are still at the experimental level, so that abnormal flow through the venous duct continues to be the best predictor of fetal mortality. **Conclusions.** In the past 10 years, there has been a constant interest in characterizing fetal cardiac dysfunction. Currently, there is no valid universal protocol, each pathology requiring a punctual evaluation in order to establish the prognosis. Thus, the knowledge of several ultrasound parameters helps the clinician in more detailed characterization of the fetal cardiac function.

Keywords: fetal cardiac dysfunction, prognosis

The role and place of fetal echocardiography in the obstructive lesions of the left heart

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The obstructive lesions of the left heart are coarctation of the aorta, aortic stenosis and hypoplastic left heart syndrome. In the past few years, the number of cases diagnosed during the fetal period has increased, thus the prognosis of the newborns suffering of this pathology has improved. Despite the large number of cases with false diagnosis of coarctation of the aorta, this pathology has benefited fully from fetal diagnosis. On the other hand, the number of fetuses with an intrauterine diagnosis of valvular aortic stenosis is relatively low. The most severe lesion remains the hypoplastic left heart syndrome. Considering the progressive nature of the obstructive left heart lesions, it is important to establish not only an anatomical diagnosis, but a hemodynamic evaluation, and to select the cases which can benefit from fetal interventional therapy.

Keywords: fetal echocardiography, left heart syndrome, heart lesions

Early prenatal diagnosis of fetal facial malformations in the first trimester of pregnancy and the evaluation of fetal neurologic behavior

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Introduction. The development of 3-dimensional and 4-dimensional ultrasonography has led to remarkable advances in the visualization of the embryo and fetus, developing a niche area, that is sonoembryology. The facial segment represents a complex anatomical structure, with an equally complex embryological development. Modifying the development process can cause various structural anomalies, ranging from a mainly cosmetic deformation to serious illnesses that can endanger the life of the newborn. These anomalies may occur in isolation or may be associated with other intracranial, vertebral or dental anomalies. **Methodology.** We performed a comparative analysis of the specialized literature studies regarding the prenatal imaging methods of facial malformations in the first trimester of pregnancy. Invasive prenatal diagnostic techniques are advisable to exclude chromosomal anomalies. Recent technological advances in 3D and 4D ultrasonography has lead to a change in the prenatal diagnosis of fetal anomalies and syndromes, from the second trimester of pregnancy to the first trimester. **Results.** The use of 3D and 4D ultrasound is useful for prenatal diagnosis of facial malformations, being superior to 2D ultrasonography. Magnetic resonance imaging facilitates the evaluation of the fetal palatine vault, the presence of micrognathia, cranial sutures and other fetal structures. **Conclusions.** Three-dimensional ultrasonography allows both early prenatal diagnosis of cranial-facial anomalies and the evaluation of fetal neurological behavior. Currently, the conduct following the diagnosis is controversial.

Keywords: 3D, 4D Ultrasound, fetal malformation

Ultrasonographic evaluation of intrauterine and endometer adhesions in Asherman syndrome

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Introduction. Intrauterine adhesions are a common condition in women who have had recurrent miscarriages, previous abortions, postpartum abortions or hysteroscopic surgical treatments. They are often diagnosed in infertile women or in symptomatic cases. Even though nowadays hysteroscopy is considered the gold standard in the diagnosis of intrauterine adhesions and Asherman's syndrome, offering simultaneous treatment possibilities, in recent years high-resolution ultrasonography has gained more popularity in the diagnosis and evaluation of the uterine cavity. **Methodology.** We have conducted a search of the specialised literature for data published in Google Scholar, PubMed and Science Direct, in order to identify studies evaluating the reliability and effectiveness of high-resolution ultrasonography, as compared to other diagnosis techniques. The terms used in the search were: "intrauterine adhesions", "Asherman syndrome" and "ultrasonography". **Results.** The quality of the images offered by the new ultrasonographic devices has been significantly improved in the past years, concluding that ultrasound diagnosis is a noninvasive, economical and widely accessible method for intrauterine adhesions and endometrial evaluation. **Conclusions.** Uterine evaluation by three-dimensional transvaginal ultrasonography provides accurate diagnosis and evaluates endometrial destruction.

Keywords: adhesions, ultrasonography, Asherman

Monofetal congenital toxoplasmosis in dichorionic, diamniotic twin pregnancy

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Introduction. Toxoplasmosis is a parasitic infection caused by *Toxoplasma gondii*. In the case of infection during pregnancy, placental lesions are decisive in fetal injury. Normally, dizygotic fetuses are both affected. There have also been reported cases of discordant impairment among fetuses from diamniotic dichorionic pregnancies. **Methodology.** We present the case of a patient who contracted toxoplasmosis in the second trimester of pregnancy, having a diamniotic dichorionic twin pregnancy obtained after *in vitro* fertilization, who opted for the feticide of the affected fetus at 32 weeks of amenorrhea. **Discussion.** The 32-year-old patient, known with primary infertility, resorts to *in vitro* fertilization, resulting in a diamniotic dichorionic pregnancy. In the first trimester, the morphology and serology were within normal limits. At 17 weeks, a laterocervical adenopathy was discovered, which lead to the repetition of the IgM and IgG toxoplasma tests, which had high values. Invasive testing for toxoplasmosis and karyotyping was decided, fetus B being positive for Toxoplasma DNA, having a normal karyotype. Feticide is legal in Austria until the moment of the labor, under conditions of malformations incompatible with life. Feticide performed at 20 weeks has a 15-20% risk of spontaneous abortion or the impairment of both fetuses. At 30 weeks of amenorrhea, fetus B presented ventriculomegaly, ascites, growth restriction and polyhydramnios. MRI confirmed the diagnosis of brain impairment. In the 32nd week of amenorrhea, aspiration of 3150 ml of amniotic fluid from the amniosis of fetus B was decided, followed by feticide with intracardiac Xylonest®. The pregnancy was directly observed in our clinic, but 17 days after the feticide, the membranes broke spontaneously and the patient gave birth by caesarean section to a live fetus, female, 2600 g, IA 7/9, and to a deceased fetus, female, 1900 g, macerated degree 2/3. **Conclusions.** This reported case wishes to raise awareness upon the implementation of this procedure in the Romanian healthcare system, in order to be used in selected cases, even in cases of advanced pregnancies.

Keywords: toxoplasma, feticide, twin pregnancy

An atypical case of ovarian fibroma: a challenge of imaging diagnosis

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Introduction. Primary ovarian fibroma is a very rare benign tumor with a frequency of about 1% of all benign ovarian tumors, with a nonspecific symptomatology, representing a real challenge regarding the imaging diagnosis. **Materials and method.** We present the case of a 62-year-old patient who presented in our medical office under emergency conditions, accusing a nonspecific painful symptomatology with gastrointestinal disorders. The ultrasound examination showed a large pelvic formation, with nonspecific characters, but with an irregular solid component that required a complex differential diagnosis. The diagnosis management included examination by nuclear magnetic resonance and dosage of specific tumor markers. **Results.** The clinical-paraclinical context required the surgery, with the excision of the tumor formation, the anatomical-pathological examination highlighting the diagnosis of ovarian fibroma. **Conclusions.** The ovarian fibroma, although representing a rare situation, should be considered in the differential ultrasound diagnosis of mixed-structure ovarian tumors.

Keywords: ovarian fibroma, ultrasound, magnetic resonance imaging

Colposcopic and microscopic modifications of the associated lesional cervix high-risk HPV

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Introduction. There are several strains of human papillomavirus (HPV) and 14 of them have been associated with cervix cancer. High-risk strains cause most cervix cancer and preneoplastic lesions. Preneoplastic cervical lesions can be treated, and HPV infection may disappear under the action of the inflammatory system in a few months or up to two years. Persistent infections can turn the normal cervix into a pathological one. **Materials, method and results.** The 32-year-old patient presented to the ambulatory service for vaginal dyspareunia and minimal vaginal bleeding after sexual contact. The speculum examination revealed an exocervix increased in volume, presenting lesions, slightly bleeding upon touch. Samples were collected for the Pap smear in liquid environment. The result of the Pap smear revealed the presence of abnormal squamous cells (ASC-H) and HPV genotyping detected strains 42 and 59. The product was also sampled for the CIN Tech 2++ test, which was positive in rare epithelial cells. Colposcopy with biopsy was performed. Following the colposcopy and the histopathology results, the existence of cervical changes (cervical intraepithelial neoplasia CIN 1, 2) was demonstrated in an area of pavementous transformation, and electroresection with diathermy snare was decided. The excised fragments were subjected to microscopic study. By using immunohistochemistry, we demonstrated that 2/3 of the thickness of the epithelium was positive in the reaction with anti-Ki67 and anti-p16 antibodies, (CIN 1 – positive reaction with anti-Ki67 antibody in the basal layer; CIN 2 – positive reaction in the basal layer and in the intermediate layers). Also, in the classical stains we noticed the asynchronism between the nucleus and the cytoplasm in the dysplasically transformed areas. The patient was periodically monitored to avoid relapse. **Conclusions.** HPV infection may influence the transformation of normal cervical cells into preneoplastic or malignant transformation cells. The early detection and treatment of these modifications can cease pathological evolution and save lives.

Keywords: high-risk HPV, Pap smear

Morphological aspects of benign-borderline-malignant ovarian cystic tumors

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Introduction. Ovarian tumor formations represent a common pathology in gynecology. They are divided into malignant, benign, secondary and borderline ovarian tumors. The benign tumors develop locally, starting with the ovarian follicles, the luteal body etc. Malignant tumors are formations that can invade locally and disseminate at distance. Premalignant tumors are tumor formations that present a high risk for malignant transformation, without having to invade other organs. **Materials and method.** The study included 30 patients, 10 patients with benign ovarian cysts, 10 with borderline ovarian tumors and 10 with malignant ovarian tumors. The patients were between 19 and 72 years old, diagnosed and treated in the Clinic of Obstetrics-Gynecology II of the County Clinical Emergency Hospital of Craiova, between 2015 and 2019. The pieces obtained postoperatively were introduced in paraffin and studied from the histological and immunohistochemical point of view. The blocks resulted were sectioned using the microtome, the sections were applied on simple smears for the classical histological stains Hematoxylin-Eosin (HE)/Trichromic Masson (TM) and on smears with Poly-L-lysine for immunohistochemical stains. The antibodies used were as follows: anti-estrogen receptor (ER), anti-progesterone receptor (PR), anti-Cytokeratin 7 (CK7), anti-Cytokeratin 20 (CK20), anti-Ki67, anti-B Cell Lymphoma (BCL2), anti-Cluster of differentiation (CD34), and anti-cancer antigen 125 (CA125). **Results.** The classic HE and TM stains demonstrated the presence of cystic structures, while by means of immunohistochemistry we showed that these tumors are of ovarian epithelial type, being positive for CK7 and negative for CK20, making the differential diagnosis with a possible metastasis from the level of the digestive tube. Estrogen and progesterone receptors are present in the structure of these glands, influencing the therapeutic conduct. Cellular antiapoptotic genes were positive in the hyperplastically/neoplastically transformed areas, while cell proliferation was intensely positive in the malignant areas. Vascularization was intense especially in cases diagnosed with borderline tumors. **Conclusions.** The surgical intervention and the subsequent histopathological examination provide actual data regarding the diagnosis of tumor certainty, helping to establish the long-term prognosis and the application of other types of treatment.

Keywords: benign-borderline, ovarian crysts, tumors

Voluminous ovarian cyst in menopause (poster)

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Introduction. An ovarian mass is a common gynecological problem. In the United States of America, there is an estimated 5% to 10% risk for women undergoing surgery for suspected ovarian cancer. Adnexal masses can be found in women of all ages and there is a wide variety of types. The size of the tumor was considered useful, larger tumors being considered more susceptible to being malignant. The clinical suspicion of ovarian cancer is significantly higher in postmenopausal women. For postmenopausal women having an intermediate-risk or low-risk tumor, surgical exploration is required if a serum tumour marker is increased. CA-125 is the most commonly used tumor marker to detect epithelial ovarian cancer. Surgical exploration is recommended, rather than surveillance of women with a mass of ≥10 cm in diameter. **Methodology.** We present the case of a 63-year-old patient who addressed our medical office for abdominal meteorism and pelviabdominal pain. Following clinical and paraclinical examinations, she is hospitalized with the diagnosis of giant ovarian tumor formation. The histopathological examination diagnoses ovarian cystadenoma. **Conclusions.** The exclusion of malignancy is a main objective in the evaluation of an adnexal tumor. The most important means used to establish the clinical suspicion of malignancy of an adnexal tumor is the sonographic aspect of the mass.

Keywords: ovary, giant, menopause

Fetal neuroblastoma complicated with fetal anasarca: case report

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Introduction. Neonatal tumors account for 2% of all pediatric tumors. Congenital malignancies are rare, neuroblastoma representing the most common pathology producing in most cases extensive metastases before birth. **Methodology.** Presentation of a case of complicated fetal neuroblastoma with fetal anasarca. **Results.** A 30-year-old pregnant woman, gesta II, para II, is admitted to our clinic at 23 weeks of gestation, with the preliminary diagnosis of a 6-cm fetal tumor with abdominal localization and fetal anasarca. The patient is monitored by obstetric gynecology doctor from 6 weeks and 5 days of gestation, being investigated according to the protocol, with all the analyses in the normal parameters, the last prenatal visit taking place at 18 weeks and 3 days of gestation. The pregnancy stops evolving, the patient aborting spontaneously. The product of conception is investigated anatomically-pathologically, the final diagnosis being: non-differentiated neuroblastoma with multiple cutaneous, diaphragmatic, pulmonary, pericardial and pleural metastatic disseminations. **Conclusions.** The presence of fetal anasarca is unusual in the case of neuroblastoma, which in most cases is not associated with specific obstetric complications.

Keywords: neonatal tumors, neuroblastoma, fetal anasarca

Fetal annexes pathology – case report

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Introduction. Umbilical cord (UC) pathology includes abnormalities in structure, insertion, position and length associated with aneuploidy, fetal distress, pregnancy, and labor complications. Placental developmental abnormalities are more common, most of them lacking pathological significance or a known cause. **Materials and method.** We present the case of a 28-year-old pregnant woman with monofetal pregnancy, with normal pregnancy evolution up to 28 weeks of gestation (WG). The ultrasound performed at 28 WG finds the fetus with corresponding WG parameters, in the amniotic fluid two anechoic formations, of 59.3/38.9 mm and 57.4/42.5 mm, located on the UC path, the UC insertion apparently velamentous on the right edge of the placenta, with no signs of fetal distress. Ultrasound examinations were done weekly. At 30 WG, within the cysts, hyper-echogenicity arises, raising the suspicion of intracystic hemorrhage. At 33 WG, the patient develops an episode of imminent preterm birth treated with tocolitics, progesterone and antispatics. At 34 WG, the patient goes into labor and gives birth to a live fetus, a female weighing 1930 gr, A=9/1min, without signs of fetal suffering. At birth, we find umbilical cord and placental pathology consistent with the ultrasound aspect during pregnancy. **Results.** Postpartum findings are: velamentous insertion of the UC, two cystic membranes on the UC, atypical placenta with multiple cysts, fibrous, calcareous and necrotic areas, sent for biopsy. Biopsy result: placenta 140/125/45 mm with multiple whitesh, cystic, hemorrhagic, calcareous and necrotic areas. UC 420 mm with two cystic membranes attached, with bleeding inside the membranes. Diagnosis: UC with thrombosed vessels and two pseudo-cysts probably due to degeneration of Wharton gelatin, placenta with dystrophic areas, calcareous deposits of 5, 4 and 3.5 cm, placental infarction with necrosis occupying 15% of the placenta, and some trophoblastic cysts <2 cm. **Conclusions.** Although the case presented multiple annexial pathology of the UC and placenta, the fetus presented a normal morphology. Following biopsy, the probable cause of preterm labor was placental insufficiency. Pregnancy ultrasound remains the most faithful method of detecting fetal annexes pathology.

Keywords: umbilical cord cysts, fetal annexes pathology, atypical placenta

Importance of transfontanellar ultrasound in monitoring the evolution of newborn with hydrocephaly

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Introduction. Hydrocephaly is characterized by abnormal accumulation of cerebrospinal fluid in the ventricular system, following the obstruction of its normal flow. There are several causes of hydrocephaly, both congenital (*spina bifida*, Arnold-Chiari malformation, Dandy-Walker syndrome, hydranencephaly, holoprosencephaly, porencephaly, schizencephaly) and aquired (intracranial hemorrhage, intracranial infections, cerebral tumors). **Objectives.** In this study, the authors aim to establish the importance of ultrasound monitoring (transfontanellar ultrasound) of hydrocephaly evolution, both before and after surgery, for setting the prognostic immediately and at distance. **Methodology.** The study was carried out prospectively in the Neonatology and Premature Department of the "Louis Ţurcanu" Clinical Emergency Hospital for Children, Timişoara, for a period of 3 years. In the study, there were included 26 newborns diagnosed with hydrocephaly. **Results.** Out of the 26 cases included in the study, 19 were premature newborns and 7 were term newborns. In the lot of premature newborns, the hydrocephaly was subsequent to intraventricular hemorrhage. In the lot of term newborns, hydrocephaly associated with cerebral malformations was predominant. From the 26 newborns with hydrocephaly, 24 required surgery with mounting, depending on the hydrocephaly's ethiology, of an external ventricular drainage or a ventricular-peritoneal shunt. Two cases had a favorable evolution under treatment with medicine, with hydrocephaly stabilization, without the necessity of neurosurgical intervention; in these cases, brain malformations were also associated (holoprosencephaly and *spina bifida oculta*). The ultrasound monitoring in these patients was carried out weekly. **Conclusions.** Hydrocephaly represents an important part of neonatal pathology because of the immediate risk, on one hand, but also because of the increased risk of neurological sequelae. Transfontanellar ultrasound was the method of choice both in hydrocephaly's evolution monitoring and in post-surgery monitoring, being a noninvasive method. In these cases, brain malformations were also associated.

Keywords: hydrocephaly, brain malformations, transfontanellar ultrasound

Amniotic fluid index and its relation to perinatal outcomes

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Introduction. Normal amniotic fluid predicts normal placental function, fetal growth and fetal well-being. Oligoamnious is a threatening condition to fetal health, associated with increased pregnancy complication and perinatal mortality. There is an inverse relationship between the amniotic fluid index (AFI) and the adverse perinatal outcome. The aim of the study was to analyze the fetal outcome in low-risk pregnant women with oligoamnious, to determine whether a borderline AFI in the third trimester is associated with an increased rate of caesarean delivery for fetal intolerance of labor, meconium-stained amniotic fluid, intrauterine growth restriction, among other adverse perinatal outcomes. **Materials and method.** Patients with a diagnosis of an AFI below 8, with gestational ages between 34 and 41 weeks, examined between January 2018 and December 2019 in the "Filantropia" Clinical Hospital of Craiova, were included in the study. Antepartum, delivery and neonatal data were collected and compared to a control group with a normal AFI. Pregnancy outcomes included caesarean section for non-reassuring fetal heart rate, meconium stained amniotic fluid, Apgar score <7 and low birth weight. **Results and conclusions.** Gestational age at delivery in pregnancies with AFI below 8 was significantly lower than in the control group with normal AFI. Caesarean section rate for non-reassuring fetal heart rate was significantly higher in the study group and there was an increased incidence of a low Apgar score and a birth weight less than the 10th percentile for gestation age also. A statistically significant increase in intrauterine growth restriction in the study group was noted, but there was no difference between groups for meconium-stained amniotic fluid. Oligoamnios has a significant correlation with adverse perinatal outcome, which may provide a useful tool for risk stratification in the management of a borderline AFI.

Keywords: fluid index, amniotic fluid

Ultrasonographic evaluation of abnormal uterine bleeding

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Abnormal uterine bleeding (AUB) is a common gynecologic complaint that accounts for one-third of outpatient visits to gynecologists and for more than 70% of all gynecologic consults in the perimenopausal and postmenopausal years, leading to increased healthcare costs and to decreased quality of life. AUB describes any variation from normal bleeding patterns in non-pregnant, reproductive-aged women beyond menarche lasting for at least 6 months. Transvaginal ultrasound is the first-line imaging test for the evaluation of AUB in both premenopausal and postmenopausal women. Transvaginal ultrasound can be used to diagnose structural causes of abnormal bleeding such as polyps, adenomyosis, leiomyomas, hyperplasia and malignancy, and can also be beneficial in making the diagnosis of ovulatory dysfunction. Traditional 2-dimensional imaging is often enhanced by the addition of 3-dimension imaging with coronal reconstruction and saline infusion sonohysterography. The availability of newer diagnostic tools has made it possible to promptly diagnose and treat an increasing number of such AUBs in an office setting. Once a proper diagnosis has been established, appropriate management must be implemented. Therefore, AUB should not be under-/overestimated, and diagnosis, investigations and treatment should be proposed as early as possible, taking into account the scientific data available in the current state of medical knowledge.

Keywords: abnormal uterine bleeding, transvaginal ultrasound, sonohysteography, premenopause, leiomyoma

Ultrasonographic aspects in microdeletions

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Introduction. Microdeletions are chromosomal abnormalities that affect less than 5 Mb, which may be of interest to one or more adjacent genes. The phenotypic impact depends on the location of the microdeletion, ranging from minimal changes to severe physical and intellectual impairment in well-known genetic syndromes. The current noninvasive tests allow their screening, but ultrasound evaluation remains an important part of diagnosis. **Methodology.** The database of the Genetics Laboratory of the "Cuza Vodă" Clinical Hospital of Obstetrics and Gynecology Iași was studied for a period of 10 years (2010-2020) and in the cases diagnosed prenatally and postnatally with microdeletions, the described ultrasound signs were analyzed. **Results.** In the cases identified with microdeletions, the systematization of the existing ultrasound data was made, focusing on the landmarks characteristic of each syndrome. The ultrasound examination was the one that directed, in most cases, the invasive investigation, but in the last years the noninvasive screening tests have been the ones that initiated the diagnostic exploration. **Conclusions.** Microdeletions, although rare, are syndromes with important impact on the physical and mental development of the child, determining complex clinical and behavioral phenotypes, hence the importance of their diagnosis. The association of noninvasive screening with rigorous ultrasound examination can lead to the diagnostic investigation and the decisions that will follow with its confirmation.

Keywords: microdeletions, noninvasive testing

Sacrococcigian teratoma: diagnosis and management

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Introduction. The sacrococcygeal teratoma is the most common congenital tumor, being predominant in the female sex, having a prevalence of 1 in 27,000 births. The ultrasound diagnosis finds a solid, liquid or a mixed mass in the sacred area. **Materials and method.** Presentation of two cases diagnosed with sacrococcigian teratoma, completed one by term birth and one by spontaneous abortion. **Results.** The first case presents a 39-year-old pregnant woman, gesta II, para I, who is diagnosed on the second-trimester morphology (22 weeks) with a 10/8 cm formation in the sacred area. The pregnant woman is monitored since the first trimester and investigated according to the protocol with normal results. During pregnancy, the formation does not change its size, but at 34 weeks polyhydramnios is installed. At 37 weeks, the patient performs an MRI that establishes the diagnosis of sacrococcygeal type II teratoma. The patient gives birth by caesarean section at 38 weeks. The second case presents a 34-year-old pregnant woman, gesta II, para II, partially monitored, diagnosed at 16 weeks with a mixed formation, about 5/4 cm in the sacred area. The patient decides at 18 weeks the termination of pregnancy. The anatomopathological examination certifies the presence of the sacrococcygean teratoma. **Conclusions.** The diagnosis of sacrococcygeal teratoma may be delayed by its resemblance to myelomeningocele, hydromelia, neuroblastoma or Williams extrarenal tumor. Although in the last years various behaviors have been tried, from expectation to fetoscopic or neonatal surgery, a consensus has not yet been reached.

Keywords: neonatal tumors, sacrococcygeal teratoma, polyhydramnios

Vitelline duct ultrasound – prognosis factor in the first-trimester pregnancy

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The vitelline duct is the structure that can be visualized early inside the gestational sac, allowing the ultrasound diagnosis of intrauterine pregnancy. **Embryological aspects.** The vitelline duct begins to form at approximately 14 days post-conception. In the fourth week of embryological development, the vitelline duct wall consists of three thin cell layers: the outer layer (the ectoderm); the inner layer, lined by the endodermal epithelium; the mesodermal layer, consisting of island blood formations where hematopoietic stem cells can be identified. **Aspects of 2D ultrasound.** The ultrasound aspect of the vitelline duct initially appears as two parallel lines. Subsequently, from 5.5 weeks it appears as a round, transonic structure, with a diameter of 3-5 mm. Certain ultrasound parameters of the vitelline duct can be described, which can be used to evaluate the evolutionary prognosis of the pregnancy: early visualization, dimensions, number, form, persistence of visualization in the second trimester, calcification. **Aspects of 3D ultrasound.** Performing the volumetry of the vitelline duct allows a more accurate estimation of the relationship between the vitelline duct and the volume of the gestational sac, as well as the correlation between the volume of the vitelline duct and the cranial-caudal length of the embryo. The VOCAL method allows a detailed evaluation of the external surface of the vitelline duct. **Aspects of Doppler ultrasound.** The vascularization of the vitelline duct is related to the intervillous circulation and plays an essential role in the early maternal-embryonic exchange. Under normal conditions, the velocimetry profile of the vitelline duct is characterized by: low velocity, absence of diastolic flow, the average IP value of 3.24. In a pregnancy with reserved evolutionary potential, the vascular flow is characterized by: irregular vascular flow, permanent diastolic flow, signs of venous blood flow. The combination of 2D, 3D and Doppler ultrasound allows the identification of important moments in the development of pregnancy, allowing at the same time the thoroughgoing study of physiological and physiopathological mechanisms, characteristic of the first trimester pregnancy.

Keywords: 2D, 3D ultrasound, first trimester

Uterine cervix fibroma (poster)

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Introduction. The fibroma is a benign tumor of the smooth muscle and adjacent connective tissue. It is more common in women of reproductive age, with a genetic predisposition. The tumor is most often manifested by menstrual disorders: menorrhagia, associated with metrorrhages. It sometimes causes uterine pain, a sensation of pelvic weight or, when of a larger size, it increases the volume of the abdomen. In some cases, it does not cause any symptoms. **Methodology.** The article is a case presentation of a 37-year-old patient who addressed the emergency department accusing intermittent pelvic pain that did not cease at the administration of usual antalgics, menometorrhagia, dysmenorrhea, hypermenorrhea, dyspareunia and bleeding upon sexual contact. Following the clinical and ultrasound examination, the presumptive diagnosis of leiomyoma of the cervix was established. The patient was hospitalised in the Obstetrics-Gynecology Clinical Section II of the "Pius Brînzeu" County Emergency Clinical Hospital in Timişoara, for the specialized procedure. **Results.** The patient has a history of four natural births that took part within physiological parameters. Affirmative, painful and plentiful menstrual cycle, lasting for about 5 days. As the patient expressed her desire to have children, the surgical episode of the leiomyoma was decided in the hospitalization episode and a vaginal myomectomy was performed. The extracted body was sent for histopathological examination. The evolution of the patient was good, with surgical healing *per primam*, and the histopathological result established the diagnosis of submucosal fibroleiomyomatous node. **Conclusions.** Proper and timely management of the fibroma at the cervical level increases the patient's possibility of obtaining and maintaining a pregnancy in the future, even the possibility of giving birth naturally. It is considered that the benign tumor cannot be prevented, the main solutions being its detection through specific investigations and intervention with medicamentous or surgical treatment, when necessary.

Keywords: fibroma, cervix, myomectomy

Prenatal diagnosis of abnormal course of fetal venous system – report of two new cases

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Introduction. The anomalies of the fetal venous system are anomalies with a variable prognosis, which is mostly based on the presence of associated malformations. Close follow-up of fetuses with different cardiac or extracardiac malformations may result in detection of abnormal venous systems. In this paper we present the experience of our center. We also intend to review the recent data from the specialized literature. **Methodology.** We present the report of two new cases of anomalies of the fetal venous system diagnosed in our center and the associated malformations. **Results and conclusions.** Abnormal venous system is associated with a high incidence of fetal anomalies and adverse outcomes, including associated malformations, chromosomal aberrations. These results are in accordance with the results of the specialized studies.

Keywords: venous system anomalies, prenatal diagnosis

Prediction of fetal hypoxia by Doppler

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Doppler ultrasound has been used to measure the blood flow velocity in vessels during the cardiac cycle in the fetoplacental and uteroplacental circulation and has been focused on arteries for the evaluation of downstream distribution of cardiac output. Because no therapy at present has been shown to significantly improve placental function, the goal of prenatal testing in such cases is to optimize the timing of delivery, late enough to avoid the sequelae of iatrogenic severe prematurity, yet early enough to avoid fetal death. Venous Doppler flow measurements have also been reported to allow for a more detailed analysis of the fetal circulatory and cardiac condition, especially in the presence of abnormal arterial Doppler waveforms.

Keywords: Doppler ultrasound, high-risk pregnancy, fetal hypoxia

Twin pregnancy complicated with TRAP syndrome: case report and literature update

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Introduction. Reverse arterial perfusion syndrome, known as acardiac twins, complicates approximately 1% of monocorionic twins, 75% occurring in pairs of diamniotic twins and 25% in pairs of monoamniotic twins. If TRAP is not treated properly, the mortality rate of the twin pump is greater than 55%. **Materials and method.** Presentation of a case with complicated twin pregnancy with TRAP syndrome. **Results.** A 23-year-old pregnant woman, gesta I, para I, is diagnosed at 14 weeks with a monochorionic diamniotic twin pregnancy from which an acardiac twin. The patient is investigated according to the protocol and followed-up by ultrasound every 2 weeks. The development of the twin pump was normal during pregnancy, the acardiac twin developing oligoamnios at 28 weeks, which prevented the practice of intrauterine intervention. It is decided the conservative management with the monitoring of the normal twin. At 34 weeks, the birth is triggered, the result being a live newborn, of female sex, G=2380 g, and an acardiac twin, with G=1660 g. **Conclusions.** The premature birth of a living, healthy baby, applying conservative management, is the best possible result in this case. To improve the survival rate for donor twins up to 80%, surgery is recommended.

Keywords: twin pregnancy, TRAP, conservative management

Twin pregnancy complicated with anencephaly: case report and literature update

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Introduction. Anencephaly is one of the most severe fetal pathologies, resulting from failure to close the neural tube at the base of the skull on the 26th-28th day of conception. Once diagnosed in one of the twins, the management options are: abortion of both twins, expectation management or selective feticide. The continuation of pregnancy results in an increased risk of preterm birth for the apparently normal twin due to polyhydramniosis developed by the anencephalic twin. **Materials and method.** Presentation of a case with complicated twins with anencephaly. **Results.** A 38-year-old pregnant woman, gesta III, para II, with a history of caesarean section and a spontaneous abortion, diagnosed in the territory with dichorionic diamniotic twin pregnancy, suspected of having an anencephal fetus, addresses our service at 20 weeks of gestation for further investigations and conduct. The second-trimester morphology shows a normal structural fetus and an anencephalic fetus. Pregnancy develops normally until week 27, when the polyhydramnios is installed at the anencephal fetus for which four amniotic reductions are performed. The patient gives birth prematurely at 36 weeks by caesarean section, a normal fetus of 3200 g, and an anencephaly fetus of 1030 g. **Conclusions.** The risk of preterm birth of an apparently normal fetus increases with the earlier diagnosis of anencephaly. To reduce this risk, selective feticide, especially in diamniotic twin, can be considered an efficient behavior.

Keywords: twin pregnancy, anencephaly, conservative management

Posterior intracranial translucency: the normal variation of the mesencephal-occipital distance in the recognition of *spina bifida* at 11-13 weeks of gestation

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Introduction. The development of ultrasonography allows the early identification of major fetal anomalies, as early as from 11-13 gestational weeks. Recent studies have described a new ultrasound mark associated with open *spina bifida* in the first trimester. "Crash sign" represents the posterior-caudal displacement and pathological deformation of the mesencephaly impacted in the occipital bone in these cases. In order to understand this phenomenon, this study evaluated the dimensions of the mesencephal-occipital space in normal pregnancies. **Materials and method.** The prospective study was conducted in a single center, between January 2017 and January 2020. During this period, 305 patients were evaluated with first-trimester screening. Ultrasounds were performed by a single specialist in maternal-fetal medicine. The maximum distance, in the anteroposterior axis, between the mesencephaly and the anterior occipital bone, in an axial section, was measured at the level of the fetal head. **Results.** The age of the patients included in the study ranged from 19 to 43 years old, with an average of 32.4 years of age. The average gestational age at which the examination was performed was 12.72 weeks, with a minimum of 10.9 and a maximum of 14.3. The cranial-caudal length was between 46 mm and 84 mm. The intracranial mesencephalic-occipital distance had an average of 1.85 mm, its variation depending on the gestational age (average values): 10 weeks – 1.39 mm, 11 weeks – 2.27 mm, 12 weeks – 2.49 mm, at 13 weeks – 3.21 mm, and at 14 weeks – 4.02 mm. **Conclusions.** The mesencephalic-posterior intracranial distance increases with gestational age, in the first trimester of pregnancy. Knowing the normal limits of variation allows the improvement of the detection rate of open *spina bifida* at 11-13 weeks.

Keywords: first trimester, occipital mesencephalic distance, *spina bifida*, crash sign

Giant uterine sarcoma

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Introduction. Uterine sarcomas have their origin in the myometrium or in the elements of the connective tissue of the endometrium and represent less than 10% of the total cancers of the uterine body. Uterine sarcomas are rare, in contrast to leiomyomas, which are common. The incidence of uterine sarcoma is 2.8 in 100,000 women among those aged between 30 and 79 years old in the United States of America. The rarity of the uterine sarcoma has made it difficult to identify the risk factors. The signs and symptoms of uterine sarcoma usually include abnormal uterine bleeding, pelvic pain/pressure or a uterine tumor mass, although some women are asymptomatic. The diagnosis of uterine sarcoma is based on the histological examination. **Methodology.** We present the case of a 52-year-old patient who addressed us for climax metrorrhagia. Following the clinical and paraclinical examinations, she was hospitalised with the diagnosis of giant uterine tumor formation. The histopathological examination diagnosed sarcoma. **Conclusions.** Uterine sarcomas are rare, but they have a maximum incidence in women over 50 years old, and in a menopausal woman who presents metrorrhagia we must think about a possible sarcoma. The diagnosis of certainty is made by the histopathological examination.

Keywords: sarcoma, uterus, histopathological

Frontonasal fetal teratom: diagnosis and postpartum evolution. Case report

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Introduction. Cervical-facial fetal tumors are an entity. Head and neck tumors are able to influence the vital prognosis at postnatal birth due to respiratory obstruction. The teratoma is most commonly seen in the neonatal solid, but only about 5% of the teratomas are located in the cervical-facial region. Early ultrasound imaging is the gold standard for the diagnosis of fetal abnormalities, while prenatal 3D ultrasound and prenatal nuclear magnetic resonance imaging (MRI) are complementary tools to establish a more accurate diagnosis. **Methodology.** We present a clinical case of prenatal-versus-nasal suspected pathology, predominantly on the right side of the face, diagnosed by ultrasound at 26 weeks and 6 days of gestation. In addition to 2D and 4D ultrasound, the patient was referred to a reference hospital, where a fetal MRI was performed. The presumptive diagnosis was teratoma and fibrochondroma, tumors that can be solitary associated with one of the PAI or Goldenhar syndromes, but without a morphological facial argument for one of these syndromes. Postnatally, the established diagnosis was teratoma/nasal dermoid, with intrathermoid extension. During the postnatal period, the option of performing the surgical section of the tumor was discussed and adopted by a multidisciplinary team. The histopathological examination confirmed our suspicion and had the objective of a maturated frontonasal teratoma. **Conclusions.** The clinical significance of these births comes from the postnatal complications that they can cause, due to the over-the-air birth effects of the newborn.

Keywords: fetal teratoma of the cervical regions, magnetic resonance imaging, ultrasonography

Advantages of the use of combined imaging techniques in diagnosing gynecological pathology

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The work hypothesis starts from the idea that ultrasound is a widely used investigation method in the gynecological practice, being easily accessible and non-invasive. The methodology of patient examination, with the establishment of an ultrasound diagnosis, requires the correlation of the data provided by the 2D, 3D and Doppler examination with other medical imaging techniques, particularly MRI, which would allow a clinical-imagistic diagnosis in the end. The results obtained by combining the imaging examination techniques depend on the choice according to the criteria of clinical diagnosis, age, personal physiological and pathological background, firstly the choice of the examination probe, which is either transabdominal or transvaginal. Filling in the data provided by a correctly chosen technique is offered by combining it with the 3D and Doppler examination. In the current practice, a second MRI imaging technique is required, which remains a method that provides the most accurate pelvic imaging data. It possesses an excellent specificity for the images of genital tumors, regardless of their structure, liquid, blood, sebum, or fibrous. Also, based on the principles of quantum physics and magnetism, it allows a topographic study of the pelvis in the 3-spatial planes. In conclusion, the paper reviews the most common clinical situations encountered in current practice, based on the personal experience of the author, with the final appreciation of the advantage of combined imaging techniques, in obtaining a clinical-ultrasound diagnosis, based on the experience of the ultrasonographer, the radiologist and the correct clinical thinking. All of the aforementioned data will establish a correct diagnosis and attitude, in favor of the patients, avoiding situations of overtreatment or the non-recognition of a pathology.

Keywords: ultrasound, MRI, clinical examination

Automation of fetal echocardiography

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Objectives. To develop and test an automation algorithm for the ultrasound examination of the fetal heart. **Methodology.** Ultrasound data for fetal heart examination were obtained using a Voluson E10. Pregnancies with gestational ages between 20 and 24 weeks of gestation were examined. The images obtained were exported and used to develop an automation algorithm detecting the left positioning of the fetal heart, the four-chamber image, the insertion of the atrioventricular valves, the heart cross, the emergence and crossing of the large vessels. The results were compared with those obtained by experienced examiners. **Results.** The sensitivity of the automation method ranged from 93.5% to 97.2%. The ability to detect the left position of the fetal heart was 100%; 98.7% for the 4-chamber image and insertion of the atrioventricular valves. Highlighting and crossing of large vessels was possible in a percentage of 94.3%. **Conclusions.** The automation of fetal echocardiography is feasible, accurate and sensitive compared to the data obtained by experienced examiners. In our opinion, we consider that these preliminary results could lead to the development and application of echocardiography software for the morphological examinations of the second trimester.

Keywords: echocardiography, automation algorithm

Laparoscopic treatment of the isthmocele on the pregnant uterus in the first trimester of pregnancy

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Introduction. The isthmocele, also known as the defect of the post-caesarean section scar, is a long-term complication of the caesarean section, with an increasing incidence. Although commonly asymptomatic, it is a new recognized cause of abnormal uterine bleeding and is considered to be a major risk factor for pregnancy with implantation in the postoperative caesarean section or for uterine rupture at a later pregnancy. Currently, there is no guide for the diagnosis and management of this pathology. A number of surgical techniques have been proposed for isthmocele correction, including laparoscopic excision, vaginal correction, a combination of vaginal and laparoscopic surgery or, more recently, hysteroscopic correction. **Case report.** We report the case of a pregnant 29-year-old patient, GII, PI, with a history of caesarean section in our clinic, who addressed us with a positive urinary pregnancy test to establish the diagnosis of pregnancy. The ultrasound examination revealed an 8-week intrauterine pregnancy and a defect of the scar from the previous caesarean section. After counseling, the patient chose to continue the pregnancy and the laparoscopic correction of the isthmocele. The intervention was performed under ultrasound control. The defect was excised and the uterus was closed with a continuous double-layer suture. There were no intraoperative or postoperative complications. The pregnancy continued without further events. The birth occurred at term by caesarean section, finding intraoperatively a completely healed scar.

Keywords: laparoscopic treatment, ultrasound control, first trimester

Is transvaginal 3D routine evaluation useful in infertility?

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Introduction. The impact of müllerian congenital anomalies on fertility is controversial, being associated mainly with subfertility and the high rate of abortions and premature births. The incidence of these anomalies in the general female population is variable but relatively high, about 4-7%, and is often associated with malformations of the urinary system. **Methodology.** We conducted a prospective study to assess the impact of routine 3D/4D ultrasound in women to undergo assisted reproduction procedures. The study included 688 pregnant women who requested evaluation for infertility within two years. The patients were clinically examined with transvaginal ultrasound, both 2D and 3D/4D. **Results.** Eighty-two (12.27%) of the patients were diagnosed with müllerian anomalies, which indicates a higher incidence of these disorders as compared to the literature. The age of the patients examined was between 23 and 44 years old and only one was known with this pathology. The most common type of anomaly detected was U1c (42.68%) and the rarest was the rudimentary horn uterus U5b (only one patient). A number of four patients with a history of metrorrhagia and infertility represented a surprise element, being pregnant at the time of the ultrasound. These had U2b type anomalies (septate uterus). **Conclusions.** In the evaluation of infertility, routine 3D ultrasound can be a useful method, with high sensitivity and specificity in detecting müllerian anomalies which can have a negative impact on the success of assisted reproduction procedures.

Keywords: 3D ultrasound, müllerian malformations, infertility

Challenges in the prenatal diagnosis of craniosynostosis

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Introduction. Craniosynostosis is defined by an abnormal, premature fusion process of the cranial sutures. The process usually starts in the second trimester of pregnancy, but the diagnosis is difficult from an ultrasound point of view, especially in the mild or moderate forms, and the studies analyze a relatively small number of cases due to the reduced incidence of the disease. Prenatal diagnosis is important because it allows a proper counselling and early interventions that can prevent the installation of neurological complications, ENT and psychosomatic development. **Methodology.** We conducted a 3-year retrospective study on fetal skull shape anomalies detected during the second-trimester malformative screening ultrasound in the Bucur Maternity. The shape of the skull and the cephalic index (CI) were analyzed in relation to the gestational age and the evolution of the suspected cases of craniosynostosis. **Results.** A total of 4583 examinations in the second trimester were performed, out of which 28 patients with CI or skull shape anomalies were identified. These were reassessed in the third trimester at onset and antepartum in a number of 21 cases. Five craniosynostoses were confirmed, including one Apert syndrome, one Crouzon syndrome, one case of achondroplasia and two cases of non-syndromic anomalies. There have not been reported cases of craniosynostosis that have not been identified antepartum. **Conclusions.** The antepartum diagnosis of craniosynostosis is difficult but possible, and it requires repeated examinations, especially during the third trimester and postpartum.

Keywords: craniosynostosis, cephalic index, prenatal diagnosis

Arnold-Chiari II malformation – case report

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Introduction. Arnold-Chiari malformation is a congenital disorder of the central nervous system, characterized by the herniation of the cerebellum, ventricle IV, and the spinal bulb through the spinal canal. This malformation is one of the causal factors of death in newborns and infants. The analysis of ultrasonographic abnormalities (cerebellum, ventricle IV, and the herniation of cerebellar tonsils more than 5 mm by foramen magnum, associated with *spina bifida*) is necessary for the diagnosis of Arnold-Chiari II malformations of the developing fetus. In this paper, we present the case of a fetus with Chiari II malformation, diagnosed at 22 weeks of gestation, following an ultrasonographic examination. The objective of this paper is to emphasize the usefulness of ultrasonography in the early detection of this congenital anomaly. **Methodology.** A 19-year-old primigravida, with 22 weeks of gestation, presented at her first obstetrical examination in the ambulatory service of the "Dr. I.A. Sbârcea" Clinical Hospital of Obstetrics and Gynecology, Brașov. The fetus was examined by an experienced sonographer with competence in fetal morpohology, using a Voluson S10 Expert device (GE Healthcare, Milwaukee, WI). **Results.** The fetus was examined by ultrasound and the examination revealed the absence of the cerebellum at the level of the posterior fossa in the axial section, associated with the deformation of the skull. The "sign of the lemon", the absence of the cerebellum at the level of the posterior fossa, the posterior fossa of small size and a myelomeningocele were detected after a detailed examination. The fetus was diagnosed with Arnold-Chiari II malformation, the sonographic results being in accordance with the MRI imaging, subsequently indicated. **Conclusions.** The early diagnosis is important, so that future appointments can be established in a neurosurgery clinic, for the caesarean section to be programmed or to disrupt the course of pregnancy in legal terms. Ultrasonographical markers are usefull and the ultrasonography examination is an important method in diagnosing Arnold-Chiari II malformations.

Keywords: Arnold-Chiari, MRI, posterior fossa

MRI and ultrasound surveillance of a case with diaphragmatic hernia

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Introduction. Diaphragmatic hernia represents the presence of abdominal organs in the thoracic cavity. It has an incidence of 1 in 3500 births and it associates a high neonatal mortality. Left diaphragmatic hernia is the most frequent form. **Case report.** We present the case of a 32-year-old patient, G2P1, who had a fetal anatomy scan performed in our department. The first-trimester screening of the patient showed a combined risk of 1/5800. Our morphology scan showed a female fetus of 22 weeks and 5 days who presented a herniation of the abdominal organs (stomach, intestine, liver) in the thorax through a left diaphragmatic defect. The left fetal lung presented with a hyperechogenic mass with systemic vascularisation on Doppler exam, with origin from the descending aorta. We suspected a pulmonary sequestration. We excluded the presence of coexisting craniofacial or cardiac defects. An amniocentesis and investigations in order to exclude the Pallister-Killian syndrome were performed. We infirmed the presence of chromosomal anomalies. We performed a fetal MRI scan that confirmed our diagnostic. We evaluated the severity of the defect by calculating O-LHR which established a medium severity degree. The patient is advised to undergo FETO fetoscopic intervention, taking into consideration the inclusion and exclusion criteria of the TOTAL trial randomised international study. The patient refuses the fetoscopic intervention and benefits from antenatal follow-up with monitoring of the O-LHR, the volume of amniotic liquid and cervical length. **Results.** The birth took place by caesarean section at 38 weeks of gestation and the newborn deceased in the first day of life in the neonatal surgery department. **Conclusions.** The corroboration of imagistic techniques allows a complete evaluation and establishes the prognosis of fetuses with diaphragmatic hernia.

Keywords: hernia, chromosomal anomalies, fetoscopic intervention

Is 3D ultrasound becoming mandatory in future pregnancy surveillance?

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Since 1989, when first commercial 3D ultrasound device became available, new possibilities were identified for the accurate visualization of anatomic fetal structures, with high technological precision and incredible satisfying esthetical features. Still, 3D ultrasound is not a routine evaluation since it requires expensive ultrasound devices and trained personnel. Several advantages of 3D ultrasound can be stated such as: complex assessment of fetal anatomic structures, accurate surface analysis of defects or volumetric measuring of organs. Storage of scanned volumes and images allows the later processing of data without the presence of the patient, as well as data transfer and analysis *via* telemedicine. The aim of this article is to review the current applications offered by 3D ultrasound in prenatal evaluation and to identify how this technology can became part in future pregnancy surveillance. As accessibility to 3D ultrasound becomes widely available and the interest of medical professionals continues to increase, a comprehensive ultrasound follow-up of the pregnancy without using this technology seems unlikely. Most likely, 3D ultrasound evaluation will not be included in the minimal requirements for obstetrical ultrasound, but an accurate, modern prenatal diagnosis is unimaginable without 3D.

Keywords: 3D ultrasound, pregnancy surveillance, prenatal diagnosis, telemedicine, neurosonography

Fetal sexual ambiguity

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Sexual ambiguity is a rare condition in which the external genital organs in the fetus cannot be precisely differentiated (whether they are male or female). Sexual ambiguity is not a disease, it is a disorder of sexual development, being usually highlighted shortly after birth and it can have a major impact on the family. The paper presents an interesting case of a girl with sexual ambiguity born in the Obstetrics-Gynecology Clinic from Sibiu in May 2019. During prenatal ultrasound examination, there was a suspicion of fetal genital malformation with difficulty in assessing fetal sex, but without other associated malformations detectable ultrasound. The ultrasound appearance was either hypertrophy of the large labia and clitoris, or hypospadias and bifid scrotum. At birth, the clinical appearance is of male fetus with bifid scrotum and hypospadias, and then an ultrasound examination is performed within the neonatology section, which reveals the presence of intraabdominal formations with müllerian-uterine origins without cervix or vagina. There is a fetal karyotype that reveals 46 XY. Following clinical and paraclinical investigations, the case concludes as a fetus of male genetic sex, which underwent submasculination during the intrauterine life, for reasons to be investigated later.

Keywords: ambiguity, sexual, fetal

Pierre-Robin syndrome

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Pierre-Robin syndrome (SPR) is a rare congenital malformation characterized by the lesion triad: micrograda-tion, glosoptosis and palatoschisis (occurring in approximately 90% of cases). The notion of "PR sequence" is preferred because these lesions constitute pathological aspects successively occurring at the time of cheek and tongue development at the end of the second month of intrauterine development. Micrognation and retroposition of the tongue are the most worrying lesions because together they can cause airway obstruction, with respiratory distress and poor oral nutrition. The prenatal diagnosis of this syndrome remains suspicious and it is important to prepare the medical team for a possible respiratory emergency. The diagnosis of SPR is based on the clinical examination and cannot be definitively established until after birth and the demonstration of postnatal respiratory problems. The prevalence of SPR was estimated from 1:2000 to 1:30,000 (approximately 1 to 8500) of live births, with a mortality rate of 30%. There is a 1:1 ratio between male and female infants, except for the X-linked form. Ultrasonography is currently the most developed method for SPR screening. The fetal face examination is performed with a two-dimensional ultrasound probe in multiple planes. Micronagtism is usually diagnosed subjectively, without objective measurements. The absence of the mandibular lacuna is the first objective measurement for the diagnosis of micrognathism in pregnancies of young gestational age. SOX9 gene modifications have been recognized for involvement in isolated SPR.

Keywords: micrograda-tion, glossoptosis, palatoschisis

Vanishing pelvic tumor

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The paper presents an interesting clinical case with accidental discovery of a solid pelvic tumor formation in a 34-year-old woman without symptoms, in full health, which disappeared spontaneously during the investigations. The tumor was discovered following routine gynecological control. Clinically, there was a hard delimited, parauterine and paraovarian left, painless formation. An endovaginal ultrasound examination was performed, which revealed the presence of a solid tumor formation of approximately 60/40 mm, located at the level of the left wide ligament, without affecting the uterus or left ovary, with intratumoral rich vascularization. Biological samples, BHC and tumoral markers (CA-125, CA1-19, CEA) were within normal limits. The pelvic MRI confirmed the presence of the ultrasound-described foramen classified as borderline (at the border between malignant and benign) at the level of the broad left ligament with decreasing dimensions. After the colonoscopy, no pathological changes were observed. Surprisingly, when reassessing the MRI and the ultrasound examination performed one month after the primary detection of the tumor formation, the complete disappearance of the tumor formation described is found, without being able to obtain an invasive biopsy.

Keywords: vanishing, tumor, pelvis

Dilated fetal coronary sinus. Case series and literature review

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Introduction. Dilated coronary sinus (CS) is a well-known marker of congenital heart diseases (CHD), particularly anomalous drainage of systemic veins. We sought to identify the possible causes of fetal SC dilation, highlighting the ultrasonographic features of these conditions and to review the literature. **Materials and method.** The study represents a case series review of 30 fetuses with dilated CS. The fetal heart was evaluated according to established guidelines. The CS was assessed subjectively and was not routinely quantified. When defined arbitrarily as being enlarged, an extended cardiac scan was performed. **Results.** The CS was enlarged between 3.75 and 8.08 mm, depending on the gestational age. The presence of left persistent superior vena cava (LPSVC) in 26 cases was the main cause of the dilation, of which 9 cases as an isolated variant, including one case of "unroofed" type SC, and 17 cases associated with other CHD. In two cases, the LPSVC and absent right superior vena cava were seen. Also, one case of total anomalous pulmonary venous connection (TAPVC) and one case of anomalous drainage of the ductus venosus (DV) into CS were detected. Four cases of *ostium primum* atrial septal defect (ASD) required differentiation with dilated SC, of which one case of ASD was associated with LPSVC. All diagnoses were confirmed either by postnatal echocardiography or by autopsy. Summarizing our own experience, we concluded that the causes of the dilated CS mentioned in the study mainly correspond to the literature data. **Conclusions.** Dilated fetal CS, usually due to the presence of LPSVC, can be easily detected during routine fetal scan and often requires differentiation with *ostium primum* type ASD. Other rare cases, such as TAPVC or abnormal drainage of the DV into CS, as well as "unroofed" coronary sinus may cause the dilation. Since dilated CS is a relevant marker of fetal CHD, a detailed heart ultrasound scan should be performed to rule out possible associated cardiac and extracardiac anomalies.

Keywords: "unroofed" coronary sinus, left persistent superior vena cava, ductus venosus, anomalous pulmonary venous connection

Intrauterine fetal ovarian cysts – imagistic aspects. Analysis of a miniseries from the First Clinic of Obstetrics and Gynecology, Cluj-Napoca, Romania

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Fetal ovarian cysts represent the most frequent abdominal pathology diagnosed *in utero*, especially in the third trimester of pregnancy. The cysts based on their ultrasound appearance are considered simple if they are unilocular with a thin wall and a diameter inferior to 2 cm. The complex cyst is multilocular and it can have thick walls, multiple septae, a heterogeneous aspect and usually a diameter superior to 2 cm. Fetal MRI can be useful for the diagnosis of complex cysts, but is more important for excluding other cystic intrauterine pathology. The intrauterine management is individualized based on the ultrasonographic appearance and the gestational age. The follow-up is the rule for the unilocular simple cysts. The management of the complex cysts is delicate, the most important factor being the gestational age. Some authors propose the intrauterine aspiration for all fetal ovarian cysts in order to prevent the most frequent complications, torsion or rupture. The vaginal delivery is possible in the absence of other obstetrical indications for caesarean delivery, except for large compressive ovarian cysts. The ultrasound is mandatory postanatally; some cysts may resorb spontaneously, but in particular situation surgery is required immediately or later in the early neonatal period. In the second part, we aim to present some cases from our service – First Clinic of Obstetrics and Gynecology, Cluj-Napoca – and their prenatal and postnatal management.

Keywords: fetal ovarian cysts, abdominal pathology, intrauterine aspiration

Transvaginal ultrasound evaluation of the cervix as a method of detecting and evaluating cervical intraepithelial neoplasia

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Introduction. This work aims at identifying the degree of correlation between the parameters obtained by 3D transvaginal ultrasound and the high-grade cervical lesions or cervical intraepithelial neoplasia. **Methodology.** We have included in this paper three groups of patients, with a total of 90 patients. The patient groups were divided as follows: Group A – 30 patients diagnosed with chronic cervicitis, Group B – 30 patients diagnosed with CIN, and Group C was represented by 30 patients without known cervical pathology, the control group. The patients underwent transvaginal ultrasound examination and the following parameters were evaluated: vascularization index (VI), flow index (FI) and vascularization-flow index (VFI). The values of these parameters were compared among the three groups and the study also included the colposcopic results before and after the medicamentous or other minimally invasive treatment. **Results.** Comparing the three groups, we observed that the vascularization idex value was higher in the group of patients with CIN. Also, the value of the indices was higher in the groups before treatment compared to the period after treatment. **Conclusions.** 3D transvaginal ultrasound examination can be considered a major investigation in the diagnosis and therapeutic evaluation of patients with chronic cervicitis and CIN.

Keywords: cervix, ultrasound, intraepithelial neoplasia, vascularization

Utility of elastosonography in the diagnosis of adenomyosis

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Introduction. Adenomyosis represents the ectopic presence of endometrial glandular tissue inside the myometrium. Recent studies support the developmental necessity of noninvasive diagnostic methods of this condition, usually confirmed by histopathological examination after surgical treatment. The objective of this study is to determine the potential utility of elastography, in combination with 2D ultrasound, in the diagnosis of adenomyosis. **Materials and method.** A prospective study was conducted (between January 2019 and January 2020) on 21 female patients of reproductive age with benign tumors who benefited from surgical treatment. All patients underwent a transvaginal 2D ultrasound combined with elastography, which were performed with the help of GE Voluson E8 and GE Voluson E10 ultrasound machines. Ultrasonographic subendometrial modifications were also evaluated using elastography. The results obtained after elastography assessment were compared with the descriptions of histopathological examinations. **Results.** The 21 patients with tumoral pathology of benign origins were divided into two groups: the first group was represented by patients with tumors of fibromatous nature, and the second group was represented by women with intramyometrial adenomyotic tissue, documented by histology. The typical morfological lesions of adenomyosis were observed in approximately 80% of the cases. The suspicions of adenomyosis, raised after combined elastosonography examinations, were confirmed histologically in over 90% of the subjects. **Conclusions.** According to this study, the typical modifications found on 2D ultrasonographic examination are suggestive for a diagnosis of adenomyosis. Still, ultrasound examination combined with elastosonography increases the diagnostic sensitivity of adenomyosis.

Keywords: 2D ultrasound, tumoral pathology, elastosonography

Early diagnosis of the hypoplastic left heart syndrome

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Introduction. The early diagnosis of congenital cardiac anomalies represents another challenge in the obstetric practice. The hypoplastic left heart syndrome (HLHS) has a frequency of 2.8% among congenital cardiac anomalies and is found in only 0.226‰ of the newborns. The anomaly is severe, duct-dependent, associates the small or nonexistent left ventricle, hypocontractile, sometimes with endocardial fibroelastosis, with mitral hypoplasia or atresia and/or aortic hypoplasia or atresia. The ascending aorta and the aortic arch are highly narrowed and retrograde blood flow is observed in the aortic arch. HLHS recognizes reconstructive surgical techniques with a success rate of over 85% and a survival at 6 years of age over 64%. **Materials and method.** The images recorded at the routine ultrasound evaluations in cases of HLHS were retrospectively followed-up. The purpose of the study was to identify any structural or hemodynamic anomalies that could have been identified in the standard ultrasound sections at the first-trimester screening and/or the reassessment of the cord at 18 weeks. **Results and conclusions.** Only two cases of HLHS were detected in the routine examination in the second trimester (20-22 weeks). In both cases, correct standard ultrasound images were recorded, both at the first-trimester screening and at the 18-week reassessment. In both cases, the diagnosis was made on the standard 4-room section. The cause in one case was mitral atresia and in another one the aortic stenosis, confirmed by the anatomical-pathological examination of the parts, in both cases the parents requesting the termination of pregnancy. HLHS is a rare but severe anomaly, whose diagnosis cannot be determined earlier than the time of screening in the second trimester. Although it can be operated with an acceptable success rate, parents generally request the termination of pregnancy.

Keywords: hypoplastic left ventricle, mitral atresia, aortic stenosis

Ultrasound evaluation of the effectiveness of ulipristal acetate in the preoperative treatment of ovarian endometrosis

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Introduction. Ovarian endometriosis is a potentially severe condition due to implications on the quality of life and fertility. Its incidence is increasing. Patients who benefit from an operative indication require a careful preoperative ultrasound evaluation in order to assess the extent of the disease outside the ovaries, which allows an optimal surgical strategy. Preoperative therapeutic options may consist of GnRh analogues, but more recent studies suggest the benefits of ulipristal acetate (UPA) treatment in these cases. **Materials and method.** We performed a prospective study in a group of 19 patients with ultrasound-diagnosed ovarian endometriosis, with surgical indication (lesions larger than 4 cm in diameter, with clinical manifestation, with or without secondary sterility) who were given 5 mg of ulipristal acetate (UPA) daily, for 8 weeks, preoperatively. The patients were reassessed every two weeks with transvaginal ultrasound, each patient being examined by one of the two experienced examiners, randomly and without being informed of the previous dimensions. Parameters related to dysmenorrhea or other painful manifestations related to endometriosis were also noted. In addition, the appearance of the lesions was noted and compared with the intraoperative one. **Results and discussion.** Serial ultrasound evaluations showed a statistically insignificant decrease in the volume of the lesions (on average by 15%). On the other hand, the preoperative use of UPA seems to positively alter the quality of the surgery. Patients treated with UPA had interventions with lower bleeding and easier dissection of endometriomas (subjectively assessed). In the case of patients treated with UPA, the surgery proved to be conservative, without immediately affecting the fertility. Also, the patients with such treatment presented a significant reduction of the algal manifestations related to endometriosis. **Conclusions.** Ulipristal acetate may be useful in the preoperative treatment of endometriosis by reducing the degree of inflammation and vascularization of endometriotic implants.

Keywords: ulipristal acetate, endometriosis

The role of ultrasound in the preoperative evaluation of pelvic inflammatory disease sequelae

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Introduction. The exact incidence of pelvic inflammatory disease (PID) in the United States of America is unknown, although it is estimated that it is responsible for 400,000 annual visits to the ambulatory care that have PID as a first diagnosis and for between 5% and 20% of all gynaecological hospitalizations. In Romania, there are no exact known data. The clinical means of investigation are supplemented by imaging, and the main line is represented by the transvaginal ultrasound. **Methodology.** We conducted a 3-year retrospective study in the Bucur Maternity, which included hospitalized patients for subjective symptomatology for sequellary pelvic inflammatory disease of the following type: tube-ovarian abscesses, sactosalpinx, chronic pelvic pain or infertility that required laparoscopic surgery. **Results.** The study included 320 patients with PID symptoms. Out of these, a total of 67 presented long-term manifestations and required exploratory laparoscopy. In 5% of the women with sequellae of PID, a perihepatitis syndrome known as Fitz-Hugh-Curtis syndrome was observed. Laparoscopy identified fibrous "violin-string" adhesions that appeared between the diaphragm dome and liver. 7.8% of the patients had bilateral piosalpinx and one case had relapsed piosalpinx. 84.3% of patients had pelvic adhesions of varying degrees and 48% of women had bilateral tubal obstruction. The correlation between the ultrasound images of hydrosalpinx, piosalpinx and hematosalpinx and the laparoscopic aspect averaged 96.5%, and for the suggestive images of tube-ovarian abscess the average was 98%. **Conclusions.** Preoperative ultrasound evaluation in patients with suggestive symptomatology of sequellary pelvic inflammatory disease is essential. The accuracy of this technique guides the surgical approach and counseling of the patient regarding the surgical intervention and possible complications.

Keywords: pelvic inflammatory disease, surgical intervention

The newborn with congenital malformations or dismorphism requires antenatal diagnosis

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Introduction. Congenital genetic malformations are a common cause of mortality and morbidity. Most of them are discovered by ultrasonographic and genetic examination during the antenatal period. Among the malformations of the central nervous system anencephaly and hydranencephaly are lethal and the neural tube closure defects have a severe prognosis. **Materials and method.** In a study on 4730 births in the "Filantropia" Municipal Hospital, in the period 2018-2019, 53 cases of congenital malformations were detected antenatally, out of which 82% had low birth weight. **Results and discussion.** The genetic and imaging antenatal diagnosis, especially for congenital heart malformations, had a major importance, preparing the multidisciplinary team (obstetrician, neonatologist, cardiologist, surgeon, neurosurgeon, geneticist) in order to give birth to a fetus in a centre ready to stabilize a newborn with complex malformations. From the study, it was observed that the evolution of the newborns diagnosed with antenatal congenital malformations, stabilized and transferred in a timely manner for surgical management, increased the survival rate. **Conclusions.** The antenatal diagnosis is defining for the subsequent evolution of children with congenital malformations.

Keywords: congenital malformations, antenatal diagnosis

Antenatally diagnosed ovarian cyst in newborns – surgery versus conservatory management

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Introduction. Ovarian cysts are a common pathology in newborns, with fetal ultrasound detection, which requires imaging monitoring in order to evaluate the immediate postnatal evolution, as well as in the first year of life. **Materials and method.** In a study on 6580 births in the "Filantropia" Municipal Hospital, in the period 2017-2019, 19 cases of ovarian unilateral or bilateral cyst were detected antenatally, which were followed by postnatal ultrasonography, in evolution. **Results and discussion.** In most cases, the antenatal diagnosis was vital for the evolution of the newborn, respectively in 17 cases, the involution of the cysts was followed, with the preservation of the ovaries, and in only two cases the decision of surgical removal was taken. The first case was of a girl whose cyst exceeded 5 cm and had ultrasound signs of hemorrhagic cyst, and the second case was a cyst of large size that exerted compression phenomena on the neighbouring organs. **Conclusions.** The importance of the antenatal diagnosis, as well as the ultrasound follow-up of the evolution of these cysts, was proved by the involution of cysts during the first year of life, with the preservation of the ovary and its function.

Keywords: ovarian cyst, fetal and neonatal ultrasound

Microcephaly

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Introduction. Microcephaly is characterized by the value of cranial circumference (CC) below the 5th percentile or below 5 standard deviations for gestational age adapted to the sex of the fetus. Pathological microcefaly is associated with neurological findings, microencephaly and, inconsistently, with mental retardation. It is different from a small constitutional (familial) head. The reported incidence of microcephaly is between 5.5 and 14.7 cases per 10,000 births, while 3% of infants have a constitutional cranial circumference below the 5th percentile. Despite the fact there is an increase in the number of cases with fetal CC below the 5th percentile in our practice, it is difficult to correct diagnose prenatally microcephaly by ultrasound; it is usually diagnosed in the second trimester and especially in the third trimester of pregnancy. **Methodology.** Our proposal is to review the etiology of fetal microcephaly and the prenatal sonographic and nuclear magnetic resonance signs. We present the definition of microcephaly based on actual nomograms, the hospital's cases and the management of pregnancy. **Results.** The first situation is the association with congenital infections, other structural anomalies or with genetic, chromosomal syndromes and fetal alcoholism syndrome. The second practical situation is isolated microcephaly. Counseling parents about the difficulties to diagnose this pathology is stresfull; it will be taken into account that these children need long-term monitoring due to the intellectual and cognitive consequences that occur in childhood. In conclusion, microcephaly is difficult to diagnose prenatally and postnatally. It is an argument for performing third-trimester screening ultrasound. The positive diagnosis may be improved by addressing these cases to specialists in maternal and fetal medicine and ultrasound, and by using an algorithm to make etiological diagnosis and prognosis.

Keywords: microcephaly, pregnancy, microencephaly

Recent considerations on the role of ecography in labor

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Introduction. In the past decades, the incidence of caesarean section has increased significantly and the lack of descent of the fetal head is common among the indications for intervention. The evaluation during labor has always been based on the relationship between the fetal head and the anatomical landmarks of the maternal pelvis. However, there are also differences between the opinions of the experienced clinicians. The ultrasound has already been admitted as a complementary investigation in the evaluation of the local situation. **Methodology.** We conducted a research of international databases on recent data regarding ultrasound in labor. **Results.** The intraobservational estimation of the ultrasound in labor has a variability of approximately 3% in the measurement of the descent angle of the fetal head. The relationship between the clinical evaluation of the descent of the fetal head and the ultrasonographic one indicates a small correlation of the average localization (clinical localization between -2 and 0), revealing how difficult it is for a clinician to accurately use the localization of the fetal head by a method as subjective as the digital examination. As measurements performed through transperineal ultrasound only depend on two structures (lower edge of the symphysis and calvarium), cranial edema, formation of epicranial bosses and other pelvic structures do not affect the measurements. **Conclusions.** The measurement of the descent angle of the fetal head by transperineal ultrasound is a technique that is objective, reproducible, noninvasive, easy to perform, and it uses precise limits to evaluate the localization of the fetal skull. This technique may have the potential to be used as a high-precision modality to guide the obstetrician as regards vaginal birth or failure of this process.

Keywords: transperineal ultrasound, labor, descent angle

Giant uterine fibroid (poster)

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We present the case of a 61-year old patient, with menopause for 13 years, who was hospitalized for an enlarged size of the abdomen and for phenomena of abdominal compression. Imagistically, the suspicion of ovarian neoplasm associated with cervical neoplasm was raised. Intraoperatively, a giant uterus was found, with the uterine fundus reaching the xiphoid appendix, which required a xipho-pubic incision. Total hysterectomy was performed with bilateral anexectomy with extemporaneous examination that revealed benignity. The particularity of this patient, besides the size of the uterus and the preoperative ambiguity of the diagnosis, was the difficult evolution of the postoperative wound, with the superinfection, dehiscence and wound toilet for a long period.

Keywords: giant fibroid, superinfection

Biometrical correlations between fetal and neonatal ventriculomegaly

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This is a retrospective study in collaboration with the neonatal unit of Life Memorial Hospital. Ventriculomegaly is an ultrasound feature, not a diagnosis. Once objectified, it can be a normal variant, but most frequently it is associated with cranian or extracranian of chromosomal or nonchromosomal abnormalities. First-line confirmation is transfontanellar ultrasound exam, where typical sections are different than the intrauterine one. All fetal images have the parental agreement to be used in educational purpose.

Keywords: ventriculomegaly, transfontanellar ultrasound

Fetal face

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Fetal face scan is an utmost emotional moment of fetal ultrasound exams during pregnancy. Ultrasound images have a bilateral impact, firstly on parents, who enjoy the pleasure of their future baby, and secondly on the physician, who can discover an abnormality. The ultrasound surveillance over the three trimesters of pregnancy checks for the correct anatomy of viscerocranium. Geometrical or biometrical abnormalities can raise the suspicion of any pregnancy-associated pathology or multiorganic syndromes, which are important aspects in the prenatal diagnosis counseling. All fetal images have the parental agreement to be used in educational purpose.

Keywords: fetal scan, ultrasound surveillance

Ultrasonographic considerations on 200 cases of uterine fibroids associated with pregnancy (poster)

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The study was performed on a group of 200 patients with fibromatous uterus. The growth rates of the fibromatous nodules in pregnancy were analyzed in the nodules located retroplacentar versus the nodules located outside the placental insertion area. The study compares the growth rates of these nodules, analyzing their volumes calculated by ultrasonography at the time of discovery, as well as after 8 weeks of progesterone therapy.

Keywords: fibromatous uterus, nodules, retroplacental, ultrasonography

Correlations between first-trimester prenatal diagnosis and fetal autopsy findings. Their importance in couple counseling

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Objective. The objective of the study was to compare the findings of the ultrasound examination in the diagnosis of fetal anomalies in the first trimester with those of the post-abortion autopsy of the specimens obtained and the importance of this process in couple counseling. **Materials and method.** The work method involved the practice of ultrasound examination of fetal morphology at the end of the first trimester, in all the cases evaluated before 13 weeks + 6 days, during the three years of study. It enrolled cases of structural fetal, as well as chromosomal anomalies suspected or detected prenatally. The pregnancies were ended by spontaneous abortion and medicamentous abortion. The ultrasound results obtained were compared with the data provided by the anatomical-pathological examination of the conception product. Subsequently, the information obtained was used to counsel the couple. **Results.** The study progressively enrolled 32 cases with first-trimester fetal anomalies, representing 3% of the entire population examined and 36.4% of the total fetal anomalies diagnosed during this period. From the total number of cases enrolled in the study, the anatomopathological examination was performed in 12 cases. Complete agreement between pre- and post-abortion results was present in 11 cases (91.66%). Conventional autopsy brought new information to a single case (9.09%), with major implications in couple counselling. **Conclusions.** While the gestational age at the time of the ultrasound diagnosis decreased at the end of the first trimester, almost in all the major structural anomalies, the age at which the conventional autopsy provides information remained the same over 16 weeks, being limited mainly by the small dimensions of the pathological specimens obtained. Confirmation through autopsy of the prenatal diagnosis plays an important role in the quality control regarding ultrasonographic examination. A correct and complete autopsy can fulfill the scientific desiderate, which in its turn conditions the proper couple counseling for a subsequent pregnancy.

Keywords: prenatal diagnosis, post-abortion autopsy, counseling

Isolated fetal abdominal calcifications: prenatal diagnosis and postnatal evolution

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Introduction. With the development of technology, prenatal ultrasound identifies relatively frequent echogenic lesions in the fetal abdomen. Fetal abdominal calcifications occur in several situations, such as meconial peritonitis, chromosomal anomalies, intrauterine infections with cytomegalovirus, rubella and parvovirus B19, cystic fibrosis, primary liver tumors, but may also have an unspecified etiology. Although most of them are associated with a low risk for the newborn, they are difficult to counsel and cause significant anxiety for parents. **Methodology.** We present the case of a 28-year-old pregnant woman, a former smoker, in which the 22-week ultrasound identified several intraabdominal perihepatic calcifications, especially around the stomach and the umbilical hepatic vein. The TORCH complex did not detect acute infections and the patient had noninvasive testing of fetal DNA at 19 weeks, with a low risk for aneuploids and microdeletions. **Results.** The calcifications persisted at 29 weeks as well, being visible at the periphery of the liver, at both lobes and around the umbilical vein, with no signs of intestinal obstruction or ascites fluid. Fetal MRI, performed at 34 weeks, excluded fetal bowel obstruction or atresia. The pregnancy evolved without any further complications, reaching full-term development. The patient gave birth to a 38-week-old male fetus, 2990 g, Apgar score 9, with good postnatal adaptation, balanced from a cardiopulmonary and neurological point of view, with supple, depressible abdomen, with stools and urination. The fetus had no acute infections with Toxoplasma, rubeola or cytomegalovirus. The abdominal radiography and the abdominal ultrasound confirmed the intraabdominal calcifications, apparently without clinical impact on the newborn. Their cause remains unknown, and the symptomatology given by them is insignificant, which supports their idiopathic character. **Conclusions.** Fetal liver calcifications are relatively common. If isolated, they have a good prognosis, when aneuploidy and fetal infections are excluded. However, in the case of major fetal defects, there is the risk of various chromosomal abnormalities.

Keywords: prenatal ultrasound, fetal liver calcification

The role of ultrasound in the assessment of uterine cervical cancer operability

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Introduction. Cervical cancer is the fourth most common cancer in women worldwide (the first most frequently encountered in Romania). Clinicians depend on imaging diagnosis for the selection of patients as a treatment modality. In recent years, ultrasound has gained increasing interest in the preoperative staging of cervical cancer. **Objectives.** To study the size of the tumor, the vascular score and the possible parametric invasion, in order to predict the operability of the cases with cervical cancer. **Methodology.** The study group enrolled 48 patients with histologically confirmed cervical invasive cancer. The study was prospective and it included patients hospitalized in the Gynecology Clinic from Iaşi in the period between 2017 and 2019. The maximum tumor length, the tumor anteroposterior diameter and width, with the calculation of the tumor volume, were measured. Intratumoral vascularization was subjectively assessed by colour Doppler examination. We also appreciated the tumor extension at the parameter level. **Results.** The average age of the patients was 53.2 years old (within the limits of 29-81 years old). Twelve patients (25%) were diagnosed with stage 2 IB2 cervical cancer (FIGO) and 36 (75%) with stage IIB or higher. Histologically, 42 cases (87.5%) had squamous cell carcinoma and 6 (12.5%) had adenocarcinoma. The suggestive ultrasound elements for parametric invasion are the extension of the tumor beyond the cervical stroma and the presence of irregular hypoecogenic tissue that infiltrates the pericervical area. The infiltrating tissue surrounding the cervix usually has very little vascularization. The correspondence between the ultrasound evaluation of the parametric invasion and the MRI (magnetic resonance imaging) was appropriate (sensitivity 76%, specificity 86%, and agreement 85%). **Conclusions.** The results of the study demonstrate that transvaginal ultrasound, an inexpensive method, readily accepted by the patients, that can be performed rapidly, could be used especially to evaluate the local extension of large cervical tumors and to monitor the efficacy of cervical cancer treatment, as an alternative method for MRI.

Keywords: cervical cancer, ultrasound, operability

IOTA criteria for the diagnosis of ovarian masses – cases analysis

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Background. Fifty percent of adnexal masses are usually instantly recognisable at transvaginal ultrasound examination using simple descriptors. If the ovarian mass does not fit one of these categories, we must use IOTA (International Ovarian Tumor Analysis) simple rules to discriminate between benign and malignant masses. The simple rules were conclusive in about 75% of adnexal masses. If we have inconclusive cases, we can use the subjective opinion by an expert or ADNEX (IOTA risk of malignancy model). For ADNEX, the optimum cut-off is 26.1%, but the subjective appearance by expert is superior to ADNEX. **Objective.** To establish a prospective validation of IOTA group criteria. **Methodology.** We analyzed 250 patients admitted to the First Clinic of Gynecology, Iași, for surgical treatment during three years. **Results.** 55.2% of adnexal masses were recognisable using simple descriptors. The simple rules were applicable in 70.53% of the rest of tumors. We had 33 inconclusive cases. The malignancy rate was 5% in cases classified as benign, 89% in cases classified as malignant, and 37% in inconclusive cases. Feature B1 (unilocular cyst) was most predictive of a benign tumor, while feature B3 (acoustic shadows) was least predictive. Feature M2 (ascites) was most predictive of malignancy and feature M4 (irregular multilocular-solid tumor with the largest diameter ≥100 mm) was least predictive. **Conclusions.** The simple rules must be used on the assessment and management of ovarian masses. The ability to provide accurate risk estimates is highly relevant for risk stratification and individualized patient management. The important limitations of the simple rules are the inconclusive results for some cases and the absence of an estimated risk of malignancy. The simple rules cannot replace training and experience in ultrasonography.

Keywords: IOTA, ovarian neoplasms, ultrasonography

Updates in the ultrasonographic diagnosis of endometrosis

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Introduction. Endometriosis is the presence of viable endometrial stromal tissue outside the uterine cavity. This pathology represents a serious health condition among young women, reaching an incidence of up to 10% in the general population. The symptoms in this entity are represented by dysmenorrhea, dyspareunia, chronic pelvic pain, dyskinesia, dysuria and infertility, increasing with age and compromising the quality of life in time. **Methodology.** We performed an analysis of the literature on PubMed using the following terms for the scientific search: "endometriosis", "adenomyosis" and "ultrasonography", selecting all the works containing data on ultrasound diagnosis as compared to the diagnosis by magnetic resonance imaging, in order to establish current recommendations for this topic. **Results.** Ultrasonographic features of endometriosis and differential diagnosis will be presented. Transvaginal ultrasound is proposed as the main method of evaluation. The use of color Doppler mode helps to differentiate between malignant and benign pathology within the ovarian endometriomas. Live HD transvaginal ultrasonography offers the possibility of examining possible intraabdominal adhesions and the pouch of Douglas for the assumption of infiltrative endometriosis. **Conclusions.** Transvaginal ultrasound plays a crucial role in the detection of deep infiltrative endometriosis, but the accuracy of the technique depends on the ultrasonographer. The data presented in the literature regarding ultrasonographic diagnosis and staging deep endometriosis are still controversial.

Keywords: endometriosis, adenomyosis, ultrasonography

Ultrasonographic and imaging techniques by magnetic resonance in breast cancer

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Introduction. Breast cancer is the second leading cause of cancer mortality among women worldwide. Early diagnosis and monitoring of patients are the main aspects in its management. Over time, imaging techniques, such as mammography, ultrasonography and magnetic resonance imaging, have made a powerful contribution to the detection and monitoring of treatment response. **Methodology.** We conducted a thoroughgoing research in the scientific literature of the imaging methods used to diagnose and evaluate the response to treatment in malignant breast pathology, with particular attention to magnetic resonance imaging (MRI) and breast ultrasonography techniques. The techniques include ultrasound elastography, contrast enhanced ultrasound, 3D ultrasound and MRI. **Results.** We summarize the study results identified in the literature and discuss their future directions. We analyzed the efficacy, utility and feasibility of ultrasound as a screening tool for the early detection of breast cancer. We also offer a review of ultrasound-guided breast biopsy and ultrasound associated with other imaging modalities, especially magnetic resonance imaging (MRI). **Conclusions.** New ultrasound imaging techniques, ultrasound-guided biopsy and ultrasound associated with other modalities offer important tools for the management of breast cancer patients.

Keywords: breast cancer, ultrasonography, MRI

The role of cerebroplacental ratio in the evaluation of perinatal outcome of fetuses with late intrauterine growth restriction

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The evaluation of fetal blood in fetuses is important for the early diagnosis of an abnormal condition, in order to prevent poor outcome. One of the important Doppler indexes of placental insufficiency is cerebroplacental ratio (CPR). CPR signifies the ratio between the fetal umbilical artery and the middle cerebral artery pulsatility indexes. Nowadays, CPR is gaining much interest in differentiating at-risk fetuses in late intrauterine growth restriction (IUGR), being associated with caesarean delivery for fetal distress, neonatal acidosis and neonatal morbidity. The aim of our review is to evaluate the scientific literature which analyzes the correlation between CPR values and perinatal outcome in IUGR pregnancies. Therefore, the recent studies sustained that especially those with singleton pregnancies and growth-restriction with a low CPR have a higher delayed neurodevelopment risk and perinatal outcome compared with normal pregnancies.

Keywords: blood flow, cerebroplacental ratio, intrauterine growth restriction, perinatal outcome

The role of AFI in predicting the outcome of intrauterine growth restricted fetuses

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Amniotic fluid index (AFI) represents one of the indicators of fetal well-being in which low values are associated with increased incidence of fetal intrauterine growth restriction (IUGR). The results of many studies showed that AFI≤5 cm after 34 weeks of gestation is an indicator of IUGR and poor perinatal outcome. However, it was noticed that all patients with oligohydramnios could predict a compromised fetus leading to IUGR. This review presents the interconnection between low AFI values, IUGR and fetal outcome, supporting the view that AFI showed to be an indicator of fetal IUGR in high-risk pregnancy. Therefore, AFI assessment in fetuses with high risk will easily facilitate the decision on IUGR management.

Keywords: amniotic fluid index, intrauterine growth restriction, high-risk pregnancies, management

Umbilical cord cyst – case presentation (poster)

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Introduction. Umbilical cord cysts are vestiges of the allantoic or omfaloenteric duct. They are most commonly located towards the fetal insertion of the umbilical cord, between the umbilical vessels, most commonly having dimensions between 4 mm and 60 mm. In the first trimester of pregnancy, the incidence of umbilical cord cysts is between 0.4% and 3.4%. Most single umbilical cord cysts, ultrasonically highlighted in the first trimester of pregnancy, resolve spontaneously and are not associated with fetal anomalies. Persistent umbilical cord cysts, highlighted in the second and third trimesters of pregnancy, are associated with an increased risk of chromosomal anomalies. Literature studies reveal an association between umbilical cord cysts and omphalocele, patent urachus, hydronephrosis and Meckel diverticulum. **Methodology.** We present a single, isolated umbilical cyst case diagnosed at 22 weeks of gestation. The ultrasound evaluation was performed with a Voluson E8 ultrasound. The ultrasound examination revealed a cystic, anecogenic formation, with a diameter of approximately 21 mm, disposed eccentrically as related to the umbilical cord vessels. The pregnant woman performed prenatal screening tests that revealed no chromosomal anomalies. Fetal structural abnormalities were not revealed. Pregnancy stopped spontaneously in evolution at 30 weeks of gestation, without revealing postpartum fetal anomalies. **Results.** Although the literature data suggest that single umbilical cyst formations are associated with a favorable evolution, the presented case shows that the prognosis of the umbilical cord cyst is not always favorable. The presence of fetal annexes pathology requires a thorough ultrasound evaluation of the fetus in order to exclude other possible associated fetal anomalies. The pathology of the umbilical cord is evolutionary and can be ultrasonically highlighted only in the second or third trimester of pregnancy.

Keywords: cyst, umbilical cord, ultrasound

A rare case of sexual differentiation abnormality

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Introduction. Ultrasound evaluation is the most accessible and widespread method to establish fetal sex, assuming the direct visualization of the external genital organs. The ultrasound determination of fetal sex, besides being a topic of maximum interest to parents, also has a number of medical implications. The ambiguity of the sexual organs is frequently associated with a series of endocrine disorders and malformations of the urinary tract. **Methodology.** The purpose of the paper is to present a case of sexual development anomaly. We present the case of a pregnant woman at the first pregnancy. At the first examination of fetal sex at 14 weeks of gestation, the ultrasound characteristics of the external genitalia were suggestive for a female fetus. The pregnant woman did not perform any noninvasive prenatal screening for personal reasons. At the ultrasound evaluation at 18 weeks of gestation, two hemiscrotes were revealed, apparently separated by a micropenis, without other fetal anomalies. The patient was informed about the atypical appearance of the external sexual genital organs of the fetus and about the possibility of a sexual development anomaly of the fetus. The pregnant woman was referred to medical neonatology and geneticist for counseling. **Results.** Although fetal sex ultrasound is most commonly a routine procedure, there are situations when ultrasound determination of fetal sex can be a real challenge. In the management of cases with fetuses having ambiguous genital organs, an interdisciplinary approach is required. In order to provide proper medical advice, a medical team consisting of neonatologist, geneticist, endocrinologist, surgeon and ethicist is required.

Keywords: sexual differentiation, ultrasound, counseling

Dacryocystocele – prenatal diagnosis

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Introduction. Congenital dacryocystocele is the consequence of naso-lacrimal duct obstruction. This is due to the concomitant obstruction of the Rosenmuller valve and the Hasner valve. The incidence of the disease varies between 1.2% and 20%. The fetal dacryocystocele is most commonly diagnosed ultrasonographically in the third trimester of pregnancy and it takes the form of a cystic tumor formation adjacent to the medial and inferior area of the orbit. Also, the dacryocystocele can be bilateral and can spontaneously remit *in utero*. Its persistence postpartum requires further investigation and appropriate treatment. **Methodology.** In this paper, we wish to present a case of isolated dacryocystocele, diagnosed by 2D and 3D ultrasound in the third trimester of pregnancy, which persisted after birth. The fetus was evaluated by ultrasound with a Voluson E8 device. The cystic tumor formation was highlighted for the first time at 28 weeks of gestation. The fetus was subsequently reassessed at 32, 35 and 38 weeks of gestation. As a result of the serial ultrasound evaluation, no other fetal anomalies were observed. **Results.** The prenatal diagnosis of dacryocystocele, especially if the tumor formation is bilateral, is very important regarding the risk of acute respiratory failure at birth. It is important to systematically observe and monitor the development of other fetal anomalies that may be associated with this congenital malformation. The newborn was evaluated immediately postpartum and at 2 weeks postpartum. The parents were suggested the surgical treatment of the cyst.

Keywords: dacryocystocel, fetal, ultrasound

Fetal growth restriction versus small for gestational age – diagnosis and controversies regarding the ultrasonographic algorithm

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Small-for-gestational-age fetuses are defined as fetuses with an estimated weight under the 10th percentile for the gestational age. Fetal growth restriction (FGR) is one of the most difficult and frequent situations in clinical practice. A true FGR is associated with abnormal Doppler and poorer perinatal outcome, instead of small-for-gestational-age fetuses who do not present abnormal feto-placental function, Doppler and have a normal perinatal outcome. Unfortunately, gestational age is not always easy to establish due to the lack of ultrasound examinations during the first trimester. On the other hand, in some cases, a small-for-gestational-age fetus develops also intrauterine growth restriction and the differentiation between the two entities becomes more difficult. We analyzed a group of pregnant women who delivered in the "Filantropia" Hospital, Bucharest, in the last two years and divided them in four groups (small for gestational age, intrauterine growth restriction, mixed features, control group) and we separated a group of pregnant women without a proper pregnancy dating. This study evaluated the fetal and neonatal complications, the moment of onset, the degree of severity and the moment of delivery. We tried to identify the correct protocol in order to make a right decision of the optimal delivery of the fetus. The final step of this algorithm is to establish the way of delivery in order to reduce fetal injury and the risk of an iatrogenic preterm delivery.

Keywords: intrauterine growth restriction, small for gestational age, pregnancy complications

Ultrasound screening limitations in obese pregnant women

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Fetal first- and second-trimester ultrasound screening is also challenging on obese patients. Due to the increased adipose tissue, the proper visualization of anatomic fetal defects may be impeded. The purpose of our study was to analyze the limitations of sonographic screening among this at-risk population. Maternal obesity has affected first-trimester NT screening; the rate of difficulties in NT measurement was 3.1% for BMI<25 versus 5.3% for class II obesity and 9.5% for class III obesity (p<0.002). The number of repeated examinations in NT measurement was higher in obese patients versus normal-weight patients. In obese women, NT measurement needs transvaginal ultrasound examination in a higher percent compared to normal-weight women (41.4% versus 22.5%; p<0.001). In the second trimester, we found a lower prenatal detection rate of any anomaly when comparing obese women with normal-weight women. The study revealed a suboptimal visualization of each organ system and found higher suboptimal visualization in the obese group for the cardiovascular system (45.7 versus 25%; p<0.001) and cerebral structures (31.9% versus 15%; p<0.001) compared to the normal-weight group, and a better visualization with advancing gestational age. The main factors which may affect fetal ultrasound scan are the following: sonographer experience, timing of the examination, repeated attempts, time allocation for the examination and, very important, the equipment used. When performing first-trimester and second-trimester ultrasound scans, obese women should be counseled that there may be a prolonged examination time and an increased failure rate, and also the possible addition of transvaginal ultrasound examination for these patients.

Keywords: obesity, pregnancy, ultrasound limitations

Ultrasound evaluation of fetal vascular anomalies

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Vascular anomalies can be identified during ultrasound screening for fetal malformations. Fetal vascular anomalies are classified into vascular tumors and vascular malformations. Both vascular tumors and vascular malformations can cause heart failure due to increased blood flow to the heart. The diagnosis of fetal vascular lesions in certain cases offers the opportunity to intervene antenatally, allowing the determination of the optimal time and place for birth, so as to improve access to specialised postnatal care. In this study, we analyzed a group of pregnant women who were evaluated at the "Filantropia" Cinical Hospital in Bucharest during the past three years for second-trimester screening for fetal malformations. We selected patients with fetal vascular anomalies and vascular anomalies of the placenta and umbilical cord, and classified them according to the pregnancy complications, mode and time of birth, as well as short-term prognosis. Considering the results of the study, it is still controversial whether the analysis of vascular anomalies should be included in the routine screening of pregnant women or there should be a pathology identified in isolation during the examination for other anomalies.

Keywords: vascular anomalies, complications

The impact of placentation defects upon the mother and the evolution of the fetus

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The placenta is the body responsible for mediating metabolic activities between mother and fetus, therefore it is directly involved in the normal development of the fetus. Normal placentation is the result of a balance between proliferation, differentiation and trophoblast invasion. Abnormal placental development has been associated with multiple gestational pathologies, such as preeclampsia, intrauterine growth restriction, diabetes and gestational trophoblastic disease. Our work is based on a review of cases of placental anomalies in the specialised literature, in order to highlight the diagnosis methods in the first trimester of pregnancy. Maternal complications caused by short-term placental defects are uncontrolled bleeding, uterine apoplexy, coagulation disorders, acute renal failure, leading to death, and on the long term, increased mortality from cardiovascular disease. Fetal impairment starts from intrauterine growth restriction, prematurity, acute fetal suffering until *in utero* death. Postpartum effects may be neonatal anaemia and respiratory distress syndrome. The main diagnostic method is fetal ultrasonography, dealing with both descriptive anatomy and changes of *in utero* placental vascularization. A defective angiogenesis or anomalies at the level of placental vilosities lead to the alteration of blood flow, with important effects on fetal development. Therefore, placental function can be evaluated through Doppler ultrasonography, following certain ultrasound markers, such as pulsatility and uterine resistance indicators, which may show increased placental resistance, as a consequence of incomplete transformation of the spiral arteries. Another ultrasound marker used for the detection of placental anomalies is blood flow measurement in the subplacental myometrium in the first trimester of pregnancy. A superior diagnosis method in the first trimester of the pregnancy is fetal ultrasonography with contrast substance, which highlights a real-time modified blood flow in different portions of the placenta, evaluating tissue perfusion. In conclusion, fetal ultrasound in the first trimester of pregnancy represents an efficient diagnostic method in placental anomalies, as well as evaluating their impact on the mother and fetal evolution, in an attempt to diagnose the associated pathologies in a timely manner and to apply a correct therapeutic management.

Keywords: placentation defect, maternal complications, Doppler

Ultrasonographic diagnosis of placental abnormalities in the first trimester of pregnancy

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Introduction. Placenta is the organ responsible for mediating the metabolic activity between mother and fetus, so it is directly involved in the normal growth of the fetus. Normal placentation is the result of a balance between proliferation, differentiation and trophoblast invasion. **Materials and method.** Our paperwork is based on a review of cases of placental abnormalities in the literature, with the purpose of highlighting the methods of primary ultrasound diagnosis of pregnancy. Maternal complications caused by short-term placental defects are uncontrolled bleeding, uterine apoplexy, coagulation disorders, acute renal failure, maternal death, and long-term mortality increased by cardiovascular disease. Fetal impairment starts with the restriction of intrauterine growth, prematurity and acute fetal suffering until death *in utero*. Defective angiogenesis or abnormalities in placental villi cause the change of blood flow, with important effects on fetal development. **Results.** Fetal ultrasonography is one of the main diagnostic methods in the first trimester of pregnancy, targeting both the descriptive anatomy and the modification of the utero-placental vascularization. Thus, placental function can be assessed by Doppler ultrasonography, following certain ultrasound marks, such as pulsatility index and resistance of the uterine artery, which can reveal an increased placental resistance, as well as the consequence of an incomplete transformation of a spiral artery. 3D Doppler ultrasonography is a superior diagnostic method which evaluates several aspects of the placental vascularisation. Another ultrasound marker used in the detection of placental abnormalities is the measurement of blood flow in the subplacental myometrium in the first trimester of pregnancy. A controversial method of diagnosis in the first trimester of pregnancy is fetal ultrasonography with contrast substance, which shows a real-time blood flow modified in different portions of the placenta, and also evaluates the tissular perfusion. **Conclusions.** Fetal ultrasound in the first trimester of pregnancy has increased specificity and sensitivity, only correlated with biological markers, in the early diagnosis of placental abnormalities

Keywords: placental abnormalities, short-term placental defects

Therapeutic results in the case of cardiac malformations diagnosed in the first trimester of pregnancy

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Objective. To analyze the therapeutic results obtained in the case of cardiac malformations diagnosed in the first trimester of pregnancy. **Methodology.** Since 2009, at the "Filantropia" Clinical Hospital in Bucharest, we have systematically applied a pregnancy examination protocol at 11-14 weeks of gestation, which involved calculating the risk for aneuploids and fetal structural assessment. Fetal structural evaluation included detailed examination of the heart, using the method employed in the morphology ultrasound in the second trimester of pregnancy. **Results.** Our study population was represented by 7693 pregnant women and 7816 embryos. The detailed cardiac evaluation protocol was completed in 7597 embryos (97.2%). The final result of pregnancy is known in 6912 of these cases (90.9%). We diagnosed 39 heart defects: 30 in the first trimester of pregnancy, 7 in the second trimester, 2 postnatal. Twenty of the 39 malformations were isolated cardiac structural defects. The detection rate of major cardiac defects in the first trimester of pregnancy was 76.92%. The survival in the cases diagnosed in the first trimester of pregnancy was significantly lower than in the cases diagnosed in the second trimester. **Conclusions.** A great proportion (76.92%) of major cardiac malformations can be diagnosed by ultrasound examination in the first trimester of pregnancy. Pregnancy counseling in the case of a suspected cardiac malformation in the first trimester of pregnancy is difficult. It is necessary to develop a multidisciplinary approach to address congenital heart disease, diagnosed early in pregnancy.

Keywords: cardiac malformations, pregnancy counseling

Correlations between Doppler anomalies in IUGR and the histopathological lesions of the placenta (poster)

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Introduction. The early prenatal identification of fetuses with intrauterine growth restriction (IUGR) by studying the growth curve and the evolution of Doppler indices in dynamics can significantly improve the postpartum fetal prognosis. **Objectives.** This paper studies the correlations between the Doppler study and the histopathological study regarding maternal-fetal circulation in the IUGR. **Methodology.** We selected 164 cases of births with IUGR in which Doppler measurements, fetal growth curve and placental ecostructure were studied, trying to correlate with the vascular lesions described in the anatomopathological examination of the postpartum placenta. These cases were classified according to the early/late onset of IUGR, as well as the gestational age at the time of birth. The study was performed in the Obstetrics and Gynaecology Clinic of the Municipal Clinical Hospital Filantropia of Craiova and in the Centre for Microscopic Morphology and Immunology Studies of the University of Medicine and Pharmacy of Craiova. The placentas were examined according to the standard protocol. **Results.** In our study, we encountered 8 cases with absent end-diastolic flow and a percentage of 2.39% of cases with diastolic flow reversed on the umbilical artery, with an unfavourable neonatal evolution. Twelve cases presented persistence of the notch on the uterine arteries and, furthermore, 10 cases showed Doppler wave modifications, with increasing RI with or without notch. The histological placental findings in IUGR consisted of morphological lesions and uterine placental vasculopathy. Decreased diastolic velocities of blood flow reflected abnormal invasion of cytotrophoblastic cells into the decidual tissue of the placental bed and defective remodelling of the spiral arteries. The presence of syncytial buds in 29% of cases resulted in limiting the capacity of the vilosities to mediate nutrient transport. **Conclusions.** Placental insufficiency manifested through vascular and degenerative placental lesions can be assessed antenatally by a 2D and Doppler ultrasonographic study (fetal growth curve, velocimetry of uterine arteries and umbilical artery, placental echostructure).

Keywords: IUGR, Doppler study, histopathology

Clinical and paraclinical correlations in neonatal asphyxia

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Introduction. Neonatal asphyxia is one of the main causes of mortality in the neonatal period. The diagnosis and classification of perinatal asphyxia and hypoxic-ischemic encephalopathy are not consistant: cord-pH, Apgar score (SA), BE (basic excees), lactate, neurological evaluation like clinical neurological scores, an EEG/EEG early neuroimaging mostly used for diagnosis: Sarnat-Score (+EEG) + neurological exam. There is no consens about which are the best diagnostic approaches and predictors for later neurodevelopmental outcome: Apgar, clinical neurological examination, blood values (pH, BE, LDH, lactate, troponin, S-100, NSE), EEG/EEG, cerebral ultrasound, Doppler, MRI (Magnetic Resonance Imaging), NIRS (Near-InfraRed Spectroscopy)? Neonatal encephalopathy is a condition characterized by brain malfunction, occurring in association with deficient oxygenation. The surveillance and management of these newborns remain among the greatest challenges for the neonatologist. **Objective.** The authors tried to evaluate the relationship between the trend of serum biomarkers and neuroimaging findings in newborns with neonatal asphyxia. **Methodology.** The study group included 23 term neonates with perinatal asphyxia exposed to therapeutic hypothermia in a third-level neonatal care unit in Cluj-Napoca, Romania. We performed head ultrasonography on the first, third and tenth days of life. MRI is done on the tenth day of life. We quantified the severity of cerebral lesions on MRI using the injury scoring system proposed by Trivedi et al., in five regions of the brain. We evaluated the dynamics of: Astrup parameters, LDH (lactate dehydrogenase), renal function, TGO, TGP (transaminases). All newborns were monitored continuously using NIRS. All patients had the informed consent signed. All data were analyzed with the SPSS programme. Results. The group had a gestational age of 39.22±1.77 weeks of gestation and weighted 3,292.61±504.77 g. The values of Apgar score (SA) improved significantly from 2.48 to 5.47 at 10 minutes ($p<0.000$). There seems to be a significant negative correlation between the SA at 1, 5, 10 minutes with the Sarnat stage and the severity of lesions on MRI, the SA at 1 minute having the highest correlation ($r=0.731$). Lactate value positively correlated with Sarnat stage on the first day. On the second and third days, we found a correlation between lactate value and the intensity of cerebral lesion found on MRI ($r=0.616$ and $r=0.620$). On the fourth day, the value of lactate significantly correlated with the IR from the head ultrasound in addition to MRI findings and Sarnat stage. The intensity of cerebral lesions also correlated with LDH, CK-MB, creatinine, TGO, and TGP in the three days of life. rSO2 was correlated with Sarnat stage on the first and second days of life ($r=0.495$ and $r=0.518$). **Conclusions.** Our study confirms the SA and pH value on the first day of life as predictors of cerebral lesions. LDH, CK-MB, creatinine, TGO and TGP values on the first and third days could qualify as predictors for the intensity of cerebral lesions in the newborn with neonatal asphyxia. No markers analyzed can be used as predictors for death.

Keywords: cerebral lesions, serum biomarkers, neonatal asphyxia

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