Since 2013 indexed in
INDEX COPERNICUS INTERNATIONAL
INFOBASE INDEX
IBI Factor 2014-15 is 3.43
CiteFactor
DOAJ DIRECTORY OF OPEN ACCESS JOURNALS
Since 2015 indexed in
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# ABSTRACTS OF THE 11TH CONGRESS OF THE ROMANIAN SOCIETY OF ULTRASONOGRAPHY IN OBSTETRICS AND GYNECOLOGY

• 7-9 September 2023, Cluj-Napoca, Romania •

SUPPLEMENT

Societatea Română de Obstetrică și Ginecologie
Societatea Română de Ultrasonografie în Obstetrică și Ginecologie
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**JOURNAL FOR CONTINUING MEDICAL EDUCATION**
Year XI • No. 41 (3) September 2023, Suppl. 2 • DOI: 10.26416/Gine.41.3.2023
ISSN 2457-5666; ISSN-L 2457-5666

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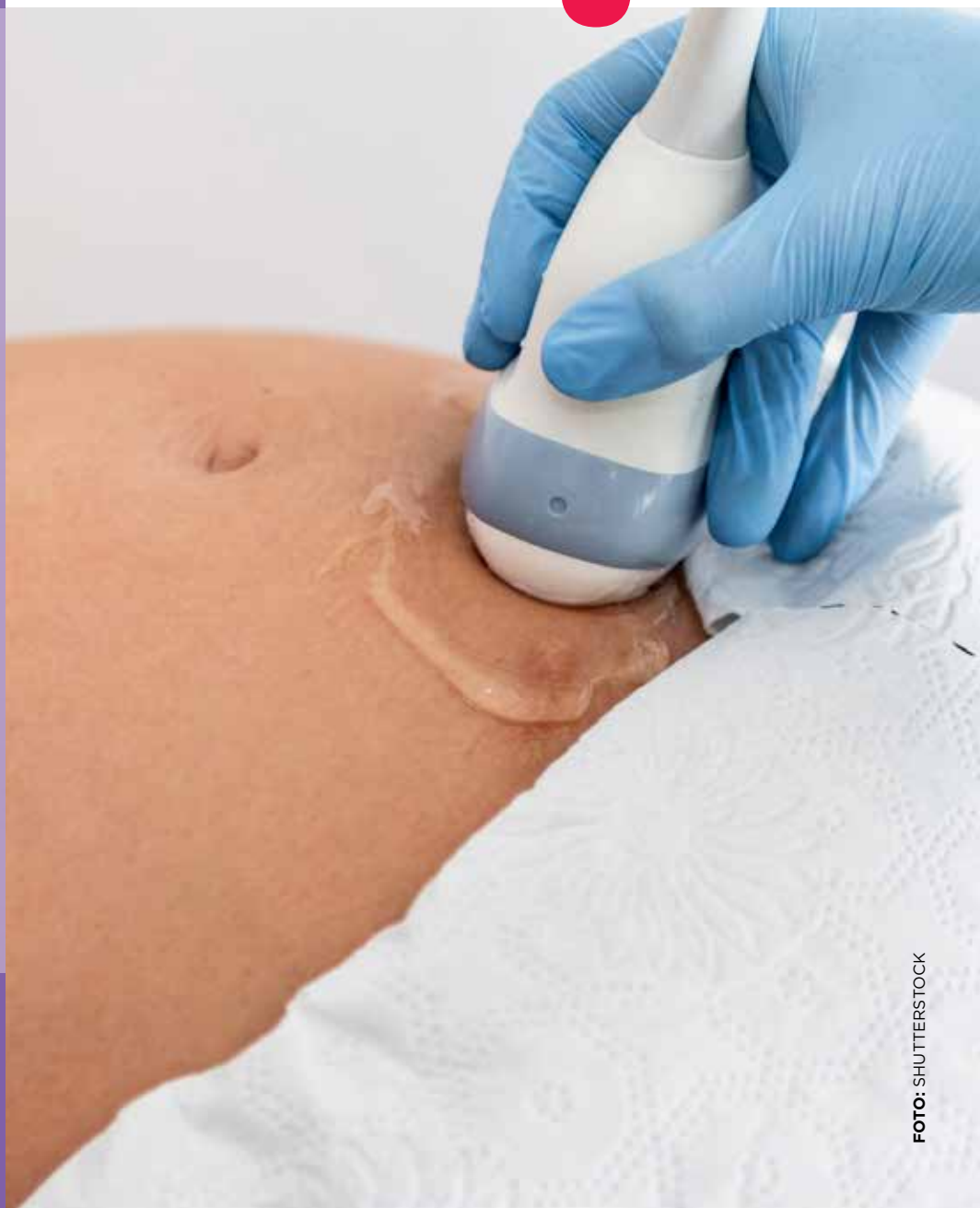

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Year XI • No. 41 (3) September 2023

Ginecologia.ro

Category B+ Journal authorised by the Romanian College of Physicians





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ISSN 2344-2301
e-ISSN 2457-3566
ISSN-L 2344-2301

SRUOG

# AL 11-LEA CONGRES AL SOCIETĂȚII ROMÂNE DE ULTRASONOGRAFIE ÎN OBSTETRICĂ ȘI GINECOLOGIE

# VOLUM DE REZUMATE

7-9 SEPTEMBRIE 2023
CLUJ-NAPOCA

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## Placenta accreta spectrum – from first-trimester diagnosis of caesarean scar pregnancy towards emergency hysterectomy. Our experience

**Andreea Ruxandra Albu[1,2], Delia Maria Grădinaru[1], Oana Mihaela Teodor[1], Sorin Vasilescu[1], Mirela Moarcăş[1], Mihai Dumitraşcu[1,2], Monica Mihaela Cîrstoiu[1,2], Adriana Klein[1]**

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Placenta accreta spectrum (PAS) disorders, comprising placenta accreta, increta and percreta, are associated with serious maternal morbidity and mortality. The incidence of PAS has increased in the recent years due the rising numbers of caesarean section births, but it is linked also to uterine surgeries like myomectomy, history of placenta accreta in previous pregnancy, and endometrial curettages. At the University Emergency Hospital Bucharest, due to access to transcatheter arterial embolization, we treat first-trimester caesarean scar pregnancy either diagnosed in our department or referred from different centers by the following algorithm: uterine artery embolization followed by safe aspiration. For cases of advanced pregnancies with PAS that come to our setting, we start to complete, preferably as early as the second trimester, the checklist required for a programmed caesarean section performed by a multidisciplinary team, including oncological gynecological surgeons in our department, urology specialist, and with a thorough intensive care preparation. The psychological support and the continuous counseling are performed as needed due to the continuous requirements of reassurance of the patient. We present a series of cases of caesarean scar pregnancies in order to underline the various ultrasonographic aspects of the early first trimester. We consider of utmost importance the early diagnosis and management of these cases that should not be missed in order to avoid future morbidity and mortality. We also present the ultrasonographic aspects of advanced pregnancies where PAS was identified and the management algorithms that we use in the treatment of these life-threatening obstetrical emergencies.

**Keywords:** placenta accreta spectrum, caesarean scar pregnancy, caesarean hysterectomy, ultrasound, uterine artery embolization

## *Craniorachischisis totalis* and omphalocele – a rare appearance of a common genetic disorder

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The genesis of neural tube defects (NTD) is poorly understood. The most prevalent types of NTDs are anencephaly, encephalocele and *spina bifida*. *Craniorachischisis totalis* (anencephaly with total open *spina bifida*) is the most severe form of neural tube defects. The concomitant presence of omphalocele was rarely described in the literature. We report a case of a secundigravida, 38 years old, who had a history of premature birth due to cervical incompetence, BMI=30, with hypothyroidism, revealing an embryo with *craniorachischisis totalis* together with omphalocele, diagnosed during a first-trimester ultrasound at 11 weeks of gestation. We discussed the implications of the diagnosis with the family and proceeded to pregnancy termination. Karyotyping was performed on the aborted product of conception, revealing trisomy 18. The folate level in the mother's blood showed an above the normal level, thus the lack of folic acid could not be linked to NTD. This case highlights the importance of the first-trimester ultrasound in the diagnosis of severe malformations, together with the genetic diagnostic testing of the fetus. The right diagnosis is crucial for future prenatal investigation and counseling.

**Keywords:** neural tube defects, craniorachischisis, omphalocele, trisomy 18

## A rare case of placenta percreta and uterine rupture – "winter is coming"

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**Introduction.** The placenta accreta spectrum (PAS) refers to the abnormal invasion of the trophoblast into the uterine wall. When the placental villi penetrate the entire myometrium and reach the uterine serosa or the pelvic organs, it is called placenta percreta. The greatest risk for developing PAS is represented by uterine scars which is increasing due to high rate of caesarean sections. **Materials and method.** We present a case of hemoperitoneum and hemorrhagic shock in a twelve-week pregnancy. The patient was admitted for abdominal pain and syncope. The pregnancy was diagnosed at seven weeks without finding a caesarean scar implantation. The ultrasound was not followed by any other scans, depside the fact that she had two previous caesarean sections. **Results.** A 33-year-old woman reported uneventful pregnancy until couple of hours prior to admission, when she accused lower abdominal pain accompanied by syncope. The clinical evaluation revealed hypotensive confused patient with signs of peritoneal irritation and no vaginal bleeding. The transvaginal ultrasound scan revealed closed cervix with normal length with the internal ostium covered by placental tissue that ascended on the anterior wall without myometrium or serosa to delimit the placenta for the peritoneal cavity. In the vesicouterine space, there was an inhomogeneous area suggestive for blood accumulation. The gestational sac contained the single embryo corresponding to twelve weeks of pregnancy with cardiac activity. The abdominal scan indicated the presence of fluid in retrouterine space and in hepatorenal space. Emergency laparotomy was performed which revealed the pregnant uterus with ruptured vessels and active bleeding at the level of caesarean scar and, also, a uterine rupture through which placental tissue was externalized. Considering the higher risk of bleeding and that there were no other methods for achieving hemostasis (uterine artery embolization), we preformed hysterectomy. The evolution of the patient was surgically uneventful, requiring transfusion with two units of blood and one unit of plasma. She was discharged after five days. The pathological examination confirmed the diagnosis of placenta percreta and uterine rupture at the caesarean scar level, interesting also the vessels on the uterine surface. **Conclusions.** The incidence of placenta with abnormal adhesion is increasing due to the high rate of caesarean sections, and it requires close monitoring of the subsequent pregnancy from the early stages. Considering the potentially although rare hemorrhagic accident, PAS is a life-threatening condition, even in the first trimester.

**Keywords:** placenta percreta, uterine rupture, caesarean scar

## Fertility ultrasound should become a mandatory concept

**Shadia Ateia, Carmen Cheleș**

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**Introduction.** In 2022, Romania recorded the lowest number of births in the last century, according to public records. **Objectives.** In this context, it is necessary for fertility ultrasound screening to be among the measures adopted by gynecologists to address the current situation. **Methodology.** Currently, the evaluation of the patient's fertility status is almost exclusively conducted clinically and biochemically, considering the immediate reproductive desire of the patient as well. The ultrasound aspects concerning the assessment of the patient's fertility status cannot be overlooked. In routine ultrasound screening, by optimizing the timing of the examination and incorporating AFC (antral follicle count), three-dimensional reconstruction and HyCoSy (hysterosalpingo-contrast sonography), essential information regarding the patient's fertility status can be obtained. **Results and conclusions.** Endovaginal ultrasound for evaluating ovarian function, tubal pathology, uterine cavity or myometrial pathology, with a focus on the involvement of all these structures in the patient's reproductive outcome, can be performed routinely and bring multiple benefits.

**Keywords:** transvaginal ultrasound, AFC, HyCoSy

## Twin-reversed arterial perfusion sequence (TRAP)

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**Introduction.** Twin-twin transfusion syndrome (TTTS) occurs in 10-20% of cases in monochorionic, diamniotic twin pregnancies, and has a 15% perinatal mortality in twins. It involves vascular connections between the placentas. The donor twin experiences restricted growth and oligohydramnios, while the recipient twin develops polyhydramnios, and eventually cardiac failure. In TRAP sequence (1 in 35,000 births), direct placental connections between arteries and veins, respectively, leads to the formation of a pump twin (mortality rate of 50-75% after birth) that provides blood supply to the perfused twin (acardiac fetus). The perfused twin receives deoxygenated blood through the umbilical artery in a reversed direction, facilitated by the placental vascular connections, and manifests severe malformations that are not compatible with postnatal survival. **Materials and method.** This paper is a case report of a monochorionic diamniotic pregnancy in a 31-year-old obese woman with a history of thrombophilia and psoriasis. She was diagnosed with TRAP sequence, with fetus A being acardiac and fetus B with cardiac activity. At 16 weeks of gestation, laser photocoagulation of the umbilical cord of the acardiac fetus was performed. **Results.** On ultrasound examination, fetus A is observed as acardiac with an amorphous mass measuring 2.7 cm, absent amniotic fluid (AF), while fetus B is positioned transversely and superiorly with present cardiac activity, and the maximum vertical pocket measuring 2.7 cm. The patient undergoes caesarean section at 28 weeks, giving birth to a live female infant weighing 1050 g, with an Apgar score of 6 (who unfortunately dies in the early neonatal period), and a deceased acardiac fetus weighing 2000 g, with multiple malformations in the cephalic, thoracic and upper limbs regions. **Conclusions.** TRAP sequence is a rare pathology of twin pregnancy, but has devastating consequences on fetal development and postnatal survival chances of the pump twin.

**Keywords:** TRAP, photocoagulation on the umbilical cord, twin pregnancy

## The impact of symptomatic pelvic organ prolapse in women's behavior: a qualitative study

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**Background.** Pelvic organ prolapse (POP) negatively affects the health of a women in terms of daily behavior, such as bladder discomfort, physical and emotional limitations. **Objective.** The aim of this study was to unravel the impact of symptomatic prolapse and its consequences on women's behavior. **Materials and method.** Eighteen women with symptomatic POP ≥ stage III diagnosed by clinical and translabial ultrasonography methods were interviewed in order to assess the impact of POP on their behavior. **Results.** The major POP impact on behavior was reflected by urge incontinence (94.44%), followed by depressed (83.33%), and disagreeable (72.22%) behavior limitations. **Conclusions.** Symptomatic POP was linked to poor daily behavior in women. These factors show the importance of an early adequate treatment for the recovery of their behavior before POP.

**Keywords:** pelvic organ prolapse, behavior, emotional

## Uterine fibroids associated with pregnancy. Is myomectomy during pregnancy a feasible method?

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Uterine myomas affects 2-10 % of pregnant women. They are hormone dependent tumors, and 30% of them will increase in response to hormonal changes of pregnancy, therefore a significant growth in the first trimester is expected. Usually, they are asymptomatic, but they may be associated with severe abdominal pain and adverse pregnancy outcomes. Conservative management is the first option. If the conservative treatment fails and the symptoms are severe, a myomectomy can be performed, with serious risks such as severe hemorrhage, uterine rupture, miscarriage and preterm labor. We present the case of a 31-year-old primigravida, presenting in our service for severe abdominal pain, pollakiuria and constipation. The ultrasound examination revealed a 14-week pregnancy, with no signs of fetal structural abnormalities and two large fibroids, one developed intramural and subserous, in the lower uterine segment and on the left parametrium, with a diameter of 100/95/87 mm, and the other one developed also intramural, into the right parametrium, with a diameter of 50/25/27 mm, in contact with the previous one. The placenta was developed on the anterior uterine wall and no signs of placental insufficiency were noted. The severe symptoms maintained during the following weeks, and the fibroids volume increased. At 17 weeks of pregnancy, due to severe abdominal pain, we decided to perform a myomectomy. The surgery was uneventful. The patient was monitored weekly. A detailed second-trimester anomaly scan was performed at 22 weeks and confirmed no signs of fetal structural abnormalities, an estimated fetal weight at percentile 30, and a pulsatility index within normal ranges for both uterine arteries and umbilical artery. One of the characteristics that contributed to the absence of fetal complications in our case was the fact that fibroids predominantly had a significant subserous and intramural component, without being in contact with the uterine cavity or placenta. Myomectomy during pregnancy in cases of symptomatic uterine fibroids not responding to conservative management may be considered, following appropriate counseling regarding the associated risks.

**Keywords:** uterine myomas, fibroids, myomectomy

## Ultrasonography-detected endometrial cavity fluid's clinical significance

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**Introduction.** There are several causes of fluid collection in the uterine cavity. Depending on the fluid type, we talk about hydrometra, hematometra and pyometra. With the help of ultrasonography, these aspects can be evident. The interpretation and management of these cases will consider the patient's hormonal status. The purpose of this study was to determine whether endometrial fluid found during a transvaginal ultrasonography examination was a sign of pathological endometrial abnormalities, by presenting the management and evolution of several cases encountered in medical practice. **Materials and method.** We conducted a study between January 2021 and December 2022, within the Obstetrics-Gynecology Clinical Department I of the "Pius Brânzeu" County Emergency Clinical Hospital, Timişoara, in which we included patients in whom the ultrasonographic examination highlighted the presence of a fluid content at the level of the uterine cavity. We recorded data related to the characteristics of the patients, clinical symptoms, other pathological aspects highlighted by ultrasound, the approach to each case and their evolution. **Results and conclusions.** Fluid accumulation in the uterine cavity can be accompanied by painful symptoms or pathological vaginal discharge. In some cases, patients may be asymptomatic, and endometrial fluid collection is identified only during a routine ultrasonographic examination. This aspect is described in certain physiological situations and does not require medical intervention. In other cases, it is present in the context of benign or malignant conditions of the genital organs that require additional investigations and specialized treatment. In managing cases with endometrial fluid in postmenopausal women, it is recommended to consider endometrial thickness. Endometrial fluid is not a reason for further invasive testing of the endometrial cavity if the endometrial thickness is 4 mm or less. Still, we must rule out the possibility of adnexal or cervical malignancy in some cases.

**Keywords:** ultrasound, hydrometra, hematometra, pyometra

## Advancements in ultrasound assessment of fetal genitalia for accurate diagnosis and comprehensive counseling

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Advancements in ultrasound technology and the integration of cell-free DNA testing into standard prenatal screening services have made it feasible to identify fetal sex at an early stage. Fetal sex determination through sonography relies on different factors depending on the gestational stage. In the late second trimester, it is determined by directly visualizing the external genitalia. However, in the late first and early second trimester, it primarily relies on the direction of the genital tubercle, known as the "sagittal sign". Other sonographic landmarks, like the fetal scrotum, midline raphe of the penis, labial lines, uterus, descended testis and the direction/origin of the fetal micturition jet in males, can aid in the accurate fetal sex determination. However, malformed external genitalia can lead to inaccurate results. This article focuses on the sonographic determination of fetal sex during the late first trimester, early second trimester and late second trimester, using both transvaginal and transabdominal ultrasound techniques. Additionally, we explore various elements that have contributed to the accuracy of fetal sex determination. While ultrasound examination of the external genitalia is typically sufficient, there are certain situations where it becomes crucial to identify the internal genitalia for precise prenatal diagnosis and thorough counseling. This paper aims to review these situations in which the evaluation of the internal genital organs is necessary, as well as the ways in which ultrasound can be used in the diagnosis of genital malformations.

**Keywords:** ultrasound, fetal genitalia, malformations

## Uterine artery embolization as an initial intervention for caesarean scar pregnancy, followed by suction evacuation: a conservative treatment approach

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**Objectives.** Currently, there is no established gold standard for the treatment of caesarean scar pregnancy (CSP). This study aims to propose a new standard of care for managing CSP. Caesarean scar pregnancy is classified into two types: type 1 (on the scar) and type 2 (in the niche). There is currently no international standard for predicting invasion extent or for determining the most effective management approach for CSP. **Materials and method.** Our protocol involved intramuscular methotrexate injection, followed by uterine artery embolization and suction evacuation as part of a conservative approach. This protocol was applied to seven patients diagnosed with CSP. Only patients with caesarean scar pregnancy at an early gestational age (≤9 weeks) who provided written consent for the combined treatment method were included. **Results.** All cases had positive outcomes, without any complications such as uterine perforation, emergency hysterectomy, severe hemorrhage or endometritis. Early diagnosis of CSP and the location of invasive trophoblast opposite the uterine scar were significant predictors for a favorable outcome. **Conclusions.** This series of CSP cases demonstrates that the combination of systemic methotrexate and uterine artery embolization ensures effective and minimally invasive management of caesarean scar pregnancy. This treatment protocol is suitable for both types of CSP. The early identification of pregnancy location, particularly after caesarean delivery, should be mandatory to prevent CSP-related complications.

**Keywords:** caesarean scar pregnancy, ultrasound, conservative treatment

## An unusual ultrasound image within the myometrium: what should we do?

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It is very rare to find an anechoic ultrasound image within the myometrium. We discuss the case of a 35-year-old patient who complained of pelvic pain that worsened during menstruation. A single anechoic image was discovered on the left side of the uterus during an ultrasound. It was oblong in shape, 57 mm long and 19 mm wide, and extended longitudinally from the left uterine horn to the isthmus. The image was well defined, and there was no evidence of posterior acoustic amplification. A sedimentation level was discovered at the image's inferior pole. A 6-mm thick myometrial rim separated the lesion's inner border from the uterine cavity. No blood flow was discovered at Doppler examination. Although 3D ultrasound, MRI and laparoscopy were conducted, no additional information about the etiology of the lesion was obtained. The laparoscopic appearance of the uterus suggested a Müllerian anomaly, but the patient's medical history did not reveal any uterine anomaly; however, it was difficult to consider uterine malformation as the cause of the lesion. The differential diagnosis also included a uterine arteriovenous malformation, but the lesion showed no Doppler flow. The patient continued to complain of increasing pain, which became worse during menstruation. Given that the patient had two vaginal births in her past, the traumatic origin of the lesion was presumed. Finally, it was determined that a clastic lesion induced by uterine trauma, most likely during birth, was most plausible. Because of the pain and the low quality of life, the patient requested a hysterectomy, which was eventually performed. The pathological examination revealed myometrial cavitation with soak blood within it. The patient was asymptomatic during the follow-up period, and the outcome was favorable. Clastic lesions of the myometrium are extremely rare. It is challenging to interpret and manage such atypical ultrasound findings, especially when the patient is young.

**Keywords:** myometrial cavitation, ultrasound, MRI

## The 360⁰ ultrasound examination of the uterus

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**Introduction.** The uterus is one of the few organs that can be minimally invasively investigated in a 360-degree manner. **Objectives.** The purpose of this study is to demonstrate that most of the information needed can be obtained through transvaginal ultrasound. **Methodology.** Currently, several imaging techniques are used for the comprehensive investigation of the uterus, ranging from 2D ultrasound to MRI or laparoscopy. However, most of the information obtained through other methods of investigation can be easily obtained solely through endovaginal ultrasound. Thus, by accurately determining the timing of ultrasound examinations, as well as utilizing three-dimensional reconstruction or adding saline solution instillation for HyCoSy, sufficient information can be obtained to complete the imaging examination of the uterus. **Results and conclusions.** Two-dimensional endovaginal ultrasound, supplemented by 3D reconstruction and HyCoSy, provides almost all the information that could have been obtained through other means of investigation.

**Keywords:** HyCoSy, transvaginal ultrasound

## Comparative analysis between ultrasonography and nuclear magnetic resonance in ovarian cysts

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**Introduction.** Positive diagnosis of ovarian cyst tumors is almost synonymous with ultrasonography diagnosis. There are elaborated scores in order to make an efficient differential diagnosis between different types of benign ovarian tumors (functional cysts, solid ovarian tumors, teratomas and different histological types of ovarian neoplasm), but it is always necessary to complement the investigations with high-resolution examinations which can differentiate density and vascularity and bring an additional contribution of information that establishes, preoperatively, the histological type of the different ovarian tumors and their benign or malignant character. Last but not least, tumor markers provide an important contribution in establishing these characteristics of ovarian tumors. **Materials and method.** Some particular cases are presented with images of ovarian tumors, benign and malignant, in which the diagnosis of ovarian tumors was significantly inclined in terms of accuracy towards ultrasonography, and others in which the contribution of MRI was significantly more important. **Results and conclusions.** Both methods of investigation have a significant contribution in the evaluation of ovarian tumors, are complementary and do not replace each other.

**Keywords:** ovarian tumors, ultrasonography, nuclear magnetic resonance

## Acute pancreatitis during pregnancy

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**Introduction.** Acute pancreatitis (AP) is an indication for hospital admission, with an increasing incidence, still rare during pregnancy. The most common causes of AP are gallstones (65-100%), especially in pregnancy, alcohol abuse and hypertriglyceridemia. There are limited data available about maternal-fetal outcomes in cases of third-trimester pancreatitis. In cases of acute biliary pancreatitis during pregnancy, the adopted medical approach depends on the gestational age and, also, considering the high risk of recurrence of AP (70%) and the specific risks of each treatment. We present a case report of AP in late third trimester, managed with conservative treatment and elective caesarean section delivery. **Methodology and results.** A 24-year-old primigravida presented to the emergency room accusing upper abdominal pain, nausea and vomiting. A 38-week viable pregnancy was confirmed, with no uterine contractions on cardiotocography. Blood tests revealed amylase/lipase three times above the upper limit of normal. The abdominal ultrasound showed multiple gallstones. Other conditions, such as gastric ulcer and duodenal ulcer, acute appendicitis, acute mesenteric ischemia, HELLP syndrome, placental detachment or uterine rupture, were excluded. In order to care for both mother and the fetus, a multidisciplinary team decided on a conservative management including hydration, administration of antispasmodics, analgesics, antibiotics and correction of electrolyte disturbances. Caesarean section delivery was scheduled, as the fetal calculated growth was over the 90th percentile (4700 g). The immediate postpartum period was uneventful for both mother and neonate. Laparoscopic cholecystectomy was planned six weeks after delivery. **Conclusions.** The impact of acute pancreatitis can be devastating, causing substantial maternal-fetal morbidity and mortality. This case report underlines the importance of early diagnosis and correct management of AP, especially in pregnancy. A multidisciplinary approach, including gastroenterologists, general surgeons and obstetricians, seems to be the key in making the best choice of management in acute pancreatitis during pregnancy.

**Keywords:** acute pancreatitis, gallstone, pregnancy

## Caesarean scar pregnancy: still a therapeutic dilemma

**Ștefan Ciobanu[1], Iuliana-Alina Enache[1], Laurențiu-Mihai Dîră[1], Elena-Iuliana-Anamaria Berbecaru[1], Cătălina RăMescu[1], Andreea Vochin[1], Ionuț-Daniel Băluță[1], Anca-Maria Istrate-Ofițeru[1,2,3], Rodica Nagy[1], Maria-Cristina Comănescu[1,4], Ileana Drocaș[1], George-Lucian Zorilă[1,5], Dominic-Gabriel Iliescu[1,5], Roxana-Cristina Drăgușin[1,5]**

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**Introduction.** Caesarean scar pregnancy (CSP) is a life-threatening condition and an iatrogenic disease due to the rising number of caesarean sections (CS) in the last decades. CSP can be of type I (endogenic), with development towards the cervico-isthmic space or uterine cavity, or of type II (exogenic), with development towards the bladder and abdominal cavity. The most practical and effective technique to early diagnosis CSP is transvaginal ultrasound (TVUS), adding a color Doppler assessment. Magnetic Resonance Imaging is not necessary for making an accurate diagnosis. The optimal approach is yet to be established and standardized. We aimed to collect and condense published literature on CSP treatment, in this systematic review. We also present our center experience on the conservative treatment of caesarean scar pregnancy. **Methodology.** We performed extensive research on MEDLINE, Embase and Cochrane Library to find studies that included the treatment modality and efficacy and complications for CSP. **Results and discussion.** The wide literature on this issue offers solid data about five treatment modalities that include the resection of CSP through a transvaginal approach, laparoscopy, uterine artery embolization plus dilatation and curettage and hysteroscopy, uterine artery embolization combined with dilatation and curettage without methotrexate and repeated high-intensity focused ultrasound. The expectant management of CSP is to be avoided. We also present our experience with three cases of CSP that beneficiated from local methotrexate, with a good outcome. **Conclusions.** Caesarean scar pregnancy is an increasing challenge worldwide. Due to a high risk of serious complications, we encourage medical practitioners to screen for CSP by early TVUS in all patients with previous caesarean delivery. The proper treatment is challenging, and guidelines are still lacking. With this paper, we try to offer different approaches to caesarean scar pregnancy, yet the management should be individualized and assessed by a multidisciplinary team, for the safest clinical option.

**Keywords:** caesarean scar pregnancy, ultrasound, methotrexate, uterine embolization

## Is the length of fetal long bones important?

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**Introduction.** The evaluation of fetal long bone measurements, particularly femur length, is essential in assessing fetal biometry, gestational age, size, growth, and in identifying various abnormalities. This study explores the diagnostic value of long bones length in detecting conditions such as Down syndrome and skeletal dysplasia. A femur length below the 10$^{th}$ percentile for gestational age is consistently associated with Down syndrome, while an extremely short femur length often indicates skeletal dysplasia. Humeral length, particularly when small compared to the biparietal diameter, serves as an additional marker for Down syndrome risk. The accurate diagnosis requires measuring all long bone segments, while the femur/abdominal circumference ratio serves as a discriminator for lethal skeletal dysplasia. Complete fetal anatomic evaluation is crucial in the presence of a short femur. This poster presents the current state of the art in the ultrasonography of fetal long bone evaluation. **Materials and method.** The present paper was realized by synthesizing the data published in the last 30 years regarding fetal long bones ultrasound assessment found on Google Scholar and PubMed, using for filtering the keywords: "femur length", "humerus length", "ultrasound", "trisomy", and "skeletal dysplasia". **Results.** Femur length is a standard parameter measured during fetal biometry assessment. A shortened femur for gestational age may raise the suspicion for fetal growth restriction, trisomy 21 or skeletal dysplasia. In certain cases, it may be the first hint for aneuploidies or skeletal dysplasia. Femur and humerus length can be used to adjust the risk for trisomy 21. When facing a shortened femur, a complete survey of all fetal long bones is mandatory, as it may unveil a potentially severe skeletal anomaly. **Conclusions.** Ultrasound measurement of fetal long bones and the ratio between different skeletal measurements can be the key for the prenatal diagnosis of fetal skeletal dysplasia or can rise the suspicion of a fetal aneuploidy that can determine further investigations for establishing or excluding such a condition of the fetus.

**Keywords:** ultrasound femur length, ultrasound humerus length, skeletal dysplasia

## Conjoined twins – thoracopagus. Sharing the same heart

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**Introduction.** Conjoined twins, also known as Siamese twins, represent one of the rarest anomalies of monozygotic pregnancies that have fascinated both medical world and the general public. The incidence of this anomaly varies between 1:50.000 and 1:100.000 births, and there is a higher predisposition toward female gender, with a ratio of 3:1. Conjoined twins appear from abnormal embryogenesis, the two main theories proposed for explaining the occurrence of this anomaly being fusion and fission. Conjoined twins were classified by Spencer (1996), and are named according to the most prominent site of fusion. The conjoined site may be in the ventral, dorsal or lateral groups. The extent of organ sharing, especially the heart, determines the possibility and prognosis of a separation procedure. **Materials and method.** The aim of this paper is to offer an overview of the literature regarding this rare anomaly of monoamniotic monochorionic twin pregnancy and to present the case of a 35-year-old multiparous patient (six previous pregnancies) who was referred to our hospital for the confirmation of the thoracopagus conjoined twins diagnosis and for management. **Results.** With the current findings, the diagnosis of thoracopagus twin pregnancy was established. The family was informed and counseled on the various management options. Due to the presence of a common heart, the termination option was offered and the family accepted. The termination of pregnancy was made through caesarean section, resulting two female twins of approximately 500 g in total which were sent to the pathologist. **Conclusions.** Conjoined twin pregnancy is a rare finding. Establishing a diagnosis using ultrasound examination early during pregnancy offers the possibility of assessing the prognosis of the pregnancy, based on the organs that are shared by the fetuses, to offer the patient and her family a prognostic and, if possible, the treatment options.

**Keywords:** monozygotic twins, conjunct twins, thoracopagus

## Severe hemolytic disease of the newborn – an unacceptable event in the 21st century

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**Introduction.** Isoimmunization in the Rhesus (Rh) system was a health system issue until methods of diagnosis and especially prevention by immunoglobulin administration were introduced at the beginning of the 21st century. Fetal disease is caused by antibodies against the fetal red cells when there is an Rh incompatibility (Rh negative mother and Rh-positive fetus). Since antibodies are produced by fetal maternal hemorrhage, the immune response starts with a false pregnancy event and is enhanced by subsequent pregnancies, unless prophylaxis is performed. The disease has many degrees, the more severe being fetal hydrops caused by hemolytic anemia, cardiac failure and hepatomegaly. After birth, the most obvious condition is determined by the high values of bilirubinemia that can cause jaundice and neurological damage, with long-term consequences. **Materials and method.** We present the case of a 24-year-old pregnant woman admitted in our unit, reporting the lack of fetal movement. **Results and conclusions.** The 24-year-old patient, with one previous caesarian section and three abortions on request, now being 34-week pregnant, diagnosed with RH incompatibility at 24 weeks, was monitored by ultrasound, and antibody anti-D determination that did not reveal isoimmunization. At 32 weeks, she was admitted in the hospital for uterine contractility, and the blood test performed revealing antibody anti-D titer of 1:8. Ultrasound scan was normal, without signs of fetal anemia (normal PSV on MCA). At 34 weeks, the patient was admitted in our unit, reporting absent fetal movement for 24 hours. Ultrasound examination identified: mild polyhydramnios (AFI=25 cm), fetal ascites, cardiomegaly and high PSV and IP on MCA, pulsatility index (IP) on the middle cerebral artery (MCA) of 3.35, and PSV of 120 cm/s. The biological test identified: maternal mild anemic syndrome, normocytic normochromic form, without signs of iron deficiency (hemoglobin=8.8 g/dl). Repeated CTG and biophysical profile (BP) revealed a non-assuring fetal pattern with absent variability and lack of reactivity, with BP five. Emergency delivery was decided, and caesarean section was performed, considering the previous birth with a uterine scar. A 2600-gram female fetus was extracted, with an Apgar score of 4. The fetal blood count revealed severe anemia (Hb=3 g/dl), and the fetus showed sign of hydrops, ascites, cardiomegaly and hepatomegaly requiring neonatal intensive care and exsanguino transfusion. The outcome was favorable, and the baby was discharged after 14 days. The case identifies the necessity of correct screening and prophylaxis of isoimmunization whenever Rh incompatibility is present, even in pregnancies that are terminated in an early stage. This problem should be questioned and addressed in the facilities that perform abortion on request.

**Keywords:** isoimmunization, fetal anemia, hydrops

## Cervical ectopic pregnancy

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**Introduction.** Cervical pregnancies occur when the fertilized egg implants in the wall of the cervix below the internal cervical os. The incidence is between 1 in 8,600 and 1 in 12,400 pregnancies. Risk factors include previous instrumentation, cervical or uterine surgery, *in vitro* fertilization with embryo transfer, uterine anomalies, leiomyomas, synechiae, previous caesarean section and pelvic inflammatory disease. The sonographic findings in cervical pregnancy may include an hourglass uterine shape, ballooned cervical canal, gestational tissue at the cervix, absence of intrauterine gestational tissue, and a portion of the endocervical canal between the gestation and the endometrial canal. The medical management includes the systemic administration of methotrexate, but failure is common in pregnancies over nine weeks with a crown-rump length (CRL) higher than 10 mm, with the presence of embryonic cardiac activity, and beta-human chorionic gonadotropin levels higher than 10,000 IU/L. **Materials and method.** This paper represents a case report of a 34-year-old woman with a history of previous caesarean section and elective abortion, presenting with eight weeks of amenorrhea. She was diagnosed one week prior with cervical ectopic pregnancy. **Results.** Ultrasound examination revealed the presence of a gestational sac with an embryo showing cardiac activity, located in the upper part of the cervix, below the uterine scar. The CRL measured 10 mm, corresponding to a gestational age of 7 weeks and 1 day. The uterine cavity displayed an endometrial thickness of 11 mm, and both ovaries appeared normal. With the patient's informed consent, uterine evacuation was performed, using suction curettage, resulting in minimal bleeding. The cervical lacerations were sutured with transfixion sutures. The subsequent evolution was favorable. **Conclusions.** While an extremely rare variety of ectopic pregnancy, cervical pregnancy represents a potential surgical emergency if not diagnosed in a timely manner. Possible complications include uterine rupture with subsequent hemorrhage, requiring hemostatic hysterectomy in such cases.

**Keywords:** cervical pregnancy, ectopic pregnancy

## Uterine adenomyosis and fibromatosis – differential diagnosis and management

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**Introduction.** Adenomyosis is defined as the presence of endometrial tissue deep within the myometrium. It can be present diffusely throughout the myometrium or focally, forming a circumscribed collection called adenomyoma. Fibromatosis is a disease characterized by the appearance of fibroids (fibromatous tumors) or fibrosis (growth of fibers in a tissue). Uterine fibroma is a benign tumor that is irrigated from vessels branched from the uterine arteries, developed from the muscular elements of the uterus. The purpose of this study was to highlight the main differences between these two pathologies, as well as the approach from the point of view of case management. **Materials and method.** Between January 2021 and June 2023, we conducted a study at the Obstetrics-Gynecology Clinical Department I of the "Pius Brânzeu" County Emergency Clinical Hospital, Timișoara. We included patients whose ultrasonographic examination revealed the presence of uterine formations and whose anatomopathological findings later confirmed the following diagnoses. We kept records of information about the patients' traits, clinical symptoms, additional pathological features made clear by ultrasonography, our response to each case, and how it developed. **Results and conclusions.** Abnormal vaginal bleeding was the main symptom of both illnesses. The evaluation of the patients revealed the ultrasonography findings that could be indicative of the illnesses under study. In contrast to fibromatosis cases, adenomyosis cases required a distinct approach to the case management. Depending on the specifics of the case, a customized strategy was necessary for adenomyosis instances. Adenomyosis cases were frequently challenging to manage and required a doctor with extensive experience. The distinctiveness of the cases, the surgeon's experience and the accompanying pathologies had an impact on the progression and prognosis.

**Keywords:** ultrasound, adenomyosis, fibromatosis

## Adnexal masses in pregnancy

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**Introduction.** Adnexal masses (AM) detected during pregnancy require a prompt and accurate diagnosis to ensure fetal safety and good outcomes. Adnexal masses in pregnant women are most commonly detected during ultrasonographic (US) examination, routinely performed early in pregnancy. The incidence of adnexal masses in pregnancy has a rate of 0.01-15%. Obstetricians should decide between expectant management with a risk of rupture, torsion, need for emergent surgery, labor obstruction and progression of malignancy, or surgical removal during pregnancy. We present a case report of unilateral adnexal mass diagnosed early in pregnancy. **Materials and method.** A 24-year-old female patient addressed an obstetrics-gynecology private practice for dating a first pregnancy. A single intrauterine seven-week viable pregnancy was confirmed with a *corpus luteum* present in the right ovary. The examination of the left adnexa found an unilocular tumor of 18-20 cm, with no papillary structures, no solid components or acoustic shadows. There was no ascites, nor increased blood flow to the tumor. The imagistic criteria pleaded for a benign huge ovarian cyst. **Results.** In the second trimester, about 20 weeks of gestation, after proper counselling, we decided to perform open surgery to remove the adnexal mass. Intraoperatively, we were not able to find any normal ovarian tissue. We performed a unilateral adnexectomy. The patient was discharged 48 hours later, with no complications and no symptoms at all. **Conclusions.** The complex diagnosis of adnexal masses in pregnancy is now accessible due to clear and specific US guidelines that help differentiate between benign and malignant masses. The management of adnexal masses during pregnancy is still a subject of debate, with no consensus regarding the best management plan. Tumor size, nature, location, symptomatology and the first trimestre mass detection are all crucial aspects for a proper care.

**Keywords:** adnexal masses, pregnancy, ultrasound

# Management of placenta accreta spectrum: a new challenge

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**Introduction.** One of the most significant factors contributing to major obstetric hemorrhage is placenta accreta spectrum (PAS). The incidence of PAS is increasing, being now approximately 3 per 1000 deliveries, due to the epidemic rise of caesarean section (CS) rate and to pregnancies resulting from assisted reproductive technology. This pathologic adherence of the placenta to the uterine myometrium can be associated with significant maternal-fetal risks. The antenatal diagnosis includes ultrasonographic (US) assessment and magnetic resonance imaging (MRI) spectrum, but still remains imperfect. This paper aims to offer a short review regarding the proper evaluation and management of PAS. In addition, we present our clinic experience with placenta accreta in the last year. **Methodology.** We conducted a PubMed search including reviews, case reports and original papers regarding PAS in the last 10 years. We also performed a 12-month retrospective study that included 42 pregnant women, aged between 18 and 46 years old. The inclusion criteria were: bleeding during the third trimester of pregnancy and history of caesarean section delivery. **Results and discussion.** All patients benefited from a transvaginal and transabdominal US. All suspected PAS cases were evaluated using the new International Federation of Gynecology and Obstetrics (FIGO) classification. Two patients also benefited from an MRI examination and cystoscopy due to high suspicion of PAS. In two cases, the delivery was followed by a hysterectomy. In three cases, the caesarean section was complicated by postpartum hemorrhage, yet controlled with ligation of the uterine artery unilateral or bilateral. **Conclusions.** Placenta accreta spectrum is impacting maternal health outcomes globally and should be managed by experienced multidisciplinary teams. The correct antenatal diagnosis of PAS includes a combination of ultrasound, MRI examination and cystoscopy. Hysterectomy is the accepted management of PAS, and the conservative or expectant management of placenta accreta spectrum should be considered investigational.

**Keywords:** placenta accreta, ultrasound, postpartum hemorrhage, hysterectomy

## Choroid plexus cysts – transient element or a predictor factor?

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**Introduction.** The choroid plexus, or plica choroidea, is a plexus of cells that arise from tela choroidea in each of the ventricles of the brain. Regions of the choroid plexus produce and secrete most of the cerebrospinal fluid of the central nervous system. The prevalence of choroid plexus cyst (CPC) is 1:50 fetuses at 20 weeks of gestation and more than 90% resolve by 26 weeks, usually being asymptomatic, but large cysts can cause hydrocephalus. Ultrasound diagnosis is characterized by single or multiple cystic areas (>2 mm in diameter) in one or both choroid plexuses of the lateral cerebral ventricles in biparietal diameter section. The differential diagnosis should exclude an intraventricular hemorrhage penetrating into the choroid plexus and other rare types of cysts like colloid or ependymal cysts. **Methodology.** We compared two cases of fetuses with CPC, the first one being a fetus with aneuploidy and a series of anomalies detected at the ultrasound examination (intracardiac echogenic focus, increased nuchal fold and absent nasal bone), and the second one being a fetus with normal karyotype where CPC represented a transitory factor. **Results.** Choroid plexus cysts, also called "soft signs", are associated with a risk for trisomy 18 and, possibly, trisomy 21. When they are isolated, the risk for aneuploidy is low. If they are present, a detailed ultrasound examination should be performed, with particular attention to the heart, brain and hands. If the ultrasound is abnormal, the next step should be a noninvasive prenatal test (NIPT) to determine the fetal karyotype. **Conclusions.** In the vast majority of cases, CPC are benign transient variants of normal intracranial anatomy. Chromosomal studies are strongly recommended whenever associated anatomic abnormalities are detected and when choroid plexus cysts are large, bilateral and persistent.

**Keywords:** choroid plexus, trisomy 18, NIPT

## Dysuria – an echographic challenge

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Dysuria is a symptom manifested as pain when urinating. It can appear regardless of age. The most common cause of dysuria is a lower urinary tract infection, and the treatment depends on the problem that generated this symptom. The ultrasound examination of the genital area in women must also include the examination of the urethra and bladder, especially in cases of dysuria with or without the result of laboratory tests. Beyond infections, we can face unusual situations that require a very serious approach. Cases that share the same symptom – dysuria – will be exposed during the presentation: Skene's gland abscess, urethral diverticulum, urethral or bladder cancer, urethral polyps or renal lithiasis, hematoma of the paravesical tissue. The presented cases also include histopathological results and extracts from the postoperative protocols. Ultrasounds were performed as part of standard examinations, with a transvaginal or abdominal approach with SAMSUNG H60 and SA800 ultrasound machines, in patients aged between 12 and 60 years old. Some of the presented cases were solved by scheduled or emergency surgery.

**Keywords:** Skene's gland abscess, urethral diverticulum, urethral or bladder cancer

## Gynecological cysts and not only

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Functional ovarian cysts represent a routine in the work of a gynecologist, but knowledge and practical experience are put to the test when it comes to cystic tumor formations located in the small pelvis, other than ovarian ones. Establishing a correct diagnosis is essential for creating an adequate therapeutic plan, because cysts which do not belong to the ovary can be harmless and without a clinical picture, and sometimes they can endanger the patient's life. The current paper aims to share the author's experience with cases of nonovarian cysts: vaginal Gartner, paraovarian, Morgagni, peritoneal inclusion cysts, Skene and Nuck duct cysts. Uterine cysts, nabothian cyst or adenomyosis will not be overlooked either. Ultrasounds were performed as part of standard examinations with a transvaginal or abdominal approach with a SAMSUNG H60 and SA8000 ultrasound machine, in patients aged between 12 and 60 years old. Some of the presented cases were solved by scheduled or emergency surgery.

**Keywords:** vaginal, paraovarian, peritoneal, Skene and Nuck duct cysts

## Preterm birth prediction – from guidelines to daily practice. Clinical, microbiological and ultrasound correlations

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**Introduction.** In the prediction of premature birth, we currently benefit from an objective and standardized element: the measurement of the cervix (preferably by transvaginal ultrasound) and the evaluation of the lower pole of the uterus. In assessing the risk of premature birth, in addition to the anamnestic and clinical elements (presence of pressure sensations in the lower abdomen, increased uterine contractility, changes in the consistency and orientation of the cervix, changes in leukorrhea), an important role belongs to bacteriological investigations (from vaginal and cervical secretions – identification of bacterial vaginosis, *Mycoplasma*, *Ureaplasma* infections etc.). **Materials and method.** We present a review of the latest international guidelines on the prevention of premature birth and some instructive clinical cases regarding the need to integrate and adapt these recommendations in daily practice. **Results.** The most recent ISUOG guideline (2022) on the role of ultrasonography in the prediction of preterm birth justifiably insists on the screening of asymptomatic pregnant women, because this objective method, correctly applied (technical accuracy between 18 and 24 gestational weeks, with a cut-off of 25 mm and with evaluation of the internal cervical os) brings maximum benefit. It allows the establishment of appropriate behavior (progesterone treatment being the most useful), with the most favorable prognosis. The usefulness of the additional elements observed (short and straight cervix, tunneling, amniotic sludge) must be assessed individually. Last but not least, intraamniotic infection and chorionic inflammatory syndrome must be correctly assessed, numerous studies highlighting the benefit of antibiotic treatment in the prevention of premature birth. **Conclusions.** The recommendations of international best practice guidelines are useful, educational and protective, but for full obstetric success it is necessary to integrate all information (clinical, ultrasonographic and microbiological) in an individualized way, for each patient.

**Keywords:** preterm birth, ultrasound, uterine cervix

## Imaging of the breast – advantages and limits of the new tendencies in breast cancer screening and diagnosis

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**Introduction.** Breast imaging screening is considered by most professional organizations, starting with the World Health Organization, to be a successful method in reducing breast cancer mortality. However, there is an important number of cases missed by screening, most of the time through the underdiagnosis of a category of patients, namely patients with increased breast density. **Materials and method.** We present a synthesis of the recommendations of the main professional forums (imagers – ACR, EUSOBI; gynecologists – ACOG, RCOG; oncologists; European Commission Initiative for Breast Cancer Screening and Diagnosis) regarding the use of imaging methods for screening and diagnosis in relation to breast pathology, insisting on particular categories of patients and a series of clinical cases. **Results.** The three breast imaging investigations are ultrasound, mammography and MRI. For certain patients, especially the young ones, the first recommended imaging investigation is breast ultrasound (palpable breast or axillary mass, pregnancy or breast swelling, signs of inflammation of the breast, early after breast surgery). It is also proposed as a complementary investigation in patients with mammographically dense breasts (ACR a, b). Mammography (digital, with tomosynthesis) is still the gold standard in breast screening. Even though a recent mammogram (below the screening range) is negative, any palpable breast mass should be reevaluated with imaging. For patients with very high breast density, experts believe that adding ultrasound to mammography provides suboptimal benefits. That is why the current recommendation is that these patients enter a breast MRI screening program (patients between 50 and 70 years old, every two years), because this investigation has a higher accuracy than ultrasound, decreasing the rate of false-positive results and being able to diagnose smaller cancers. **Conclusions.** Choosing the optimal method or combining imaging methods allows a real progress in the screening and diagnosis of breast neoplastic pathology, with inherent limitations, depending on resources.

**Keywords:** breast cancer screening, mammography, breast ultrasound, breast MRI

## Uterine tumor associated with malformative pathology: a challenge of imaging diagnosis

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**Introduction.** Uterine malformations are the most common congenital anomalies of the reproductive system. Due to their complexity, they represent a challenge for imaging diagnosis, especially in situations where they are associated with other pathologies. **Materials and method.** A 34-year-old patient presented with secondary amenorrhea, significant cyclic pains and metrorrhagia, having been previously diagnosed with primary infertility. The combined imaging evaluation, carried out in stages, highlighted the presence of an important tumor mass developed on a uterus didelphys, a rare situation. **Results.** After an adequate evaluation, the surgical intervention was performed which partially confirmed the diagnosis, the subsequent evolution being favorable. **Conclusions.** The correct imaging diagnosis of the malformative pathology associated with other anomalies involves a staged, multidisciplinary evaluation.

**Keywords:** uterine malformations, uterus didelphys, uterine tumor

## Fetal conotruncal malformations. Accuracy of prenatal diagnosis, associated defects and outcome. The experience of a prenatal diagnostic center

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**Introduction.** Conotruncal malformations (CTMs) are characterized by abnormalities of the great vessels of the heart, and are caused by aberrant development of the conotrunal region of the embryonic heart. Prenatal diagnosis of CTMs optimizes obstetric and neonatal care. The objectives of this study are to evaluate the accuracy of the prenatal diagnosis of CTMs, of the associated cardiac and extracardiac malformations, and to establish the perinatal prognosis. **Materials and method.** This is a retrospective study, performed between 1 May 2007 and 30 June 2023. We included cases with transposition of great vessels (TGA), congenitally corrected TGA (TGAcc), tetralogy of Fallot (TOF), double outlet right ventricle (DORV), pulmonary atresia with ventricular septal defect (PA-VSD), and common arterial trunk (CAT). We calculated the Z-score for the ejection vessels. The reconfirmation of the diagnosis of CTMs was made by prenatal/postnatal echocardiography performed by a cardiologist, and necropsy in cases with termination of pregnancy (TOP) or neonatal death (NND). Prenatal genetic diagnosis tests (PGDT) for trisomies (T) and 22q11 microdeletion were performed. **Results.** We diagnosed 68 cases with CTMs. We found 20 TGA (10 VSD), two TGAcc (two VSD), 20 TOF (three absent pulmonary valve syndrome), 16 DORV, one PA-SDV, and nine CAT. We excluded from the study 12 unfollowed cases. The diagnosis of CTMs was reconfirmed in 96.4% of cases. Associated intracardiac and extracardiac malformations presented, respectively, 76.8% and 41.7% of cases. Two cases with T13 and two cases with T9 were diagnosed. There were 20/56 (35.7%) TOP, two fetal deaths, 31 full-term birth, 21/31 (67.7%) cardiac surgeries, 2/21 (9.5%) postoperative deaths, 9/31 (29%) NND, and two pregnancies in evolution. **Conclusions.** Prenatal diagnosis of CTMs is feasible. Caution should be exercised in evaluating the ejection path-DSV relationship and in identifying cases with ductal-dependent pulmonary circulation. The postnatal prognosis is good for simple CTMs, but it becomes reserved for cases with complex cardiac malformations or plurimalformative syndrome.

**Keywords:** conotruncal anomalies, fetal echocardiography, outcome

# Pregnancy associated with uterine dehiscence

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Uterine dehiscence is a separation of the uterine musculature with intact uterine serosa. Uterine dehiscence can be encountered at the time of caesarean delivery, can be suspected on obstetric ultrasound, or can be diagnosed between pregnancies. Uterine scar dehiscence and rupture are serious complications of pregnancy that can lead to catastrophic outcome. We present the case of a 37-year-old patient with a history of a caesarean delivery five years ago, who came for a routine follow-up scan, at seven weeks of gestation. The transvaginal ultrasound assessment revealed, inside the uterine cavity, a gestational sac with a single embryo whose crown rump lenght coressponded to seven weeks of pregnancy, and the absence of the uterine muscle layer on the previous caesarean section scar with an anechoic area protruding through the lower segment of the caesarean section scar, with an intact serosal layer with a thickness of 1.8 mm. The patient was informed about the prognosis of the pregnancy and the associated risks of uterine rupture and miscarriage. The laparoscopic repair of the uterine dehiscence was offered. The patient refused the surgery. Therefore, the pregnancy was carefully monitored, with a thorough evaluation of the lower uterine segment thickness. The elective caesarean section delivery was planned prior to the onset of labor, at 38 weeks of pregnancy. A large uterine caesarean section scar dehiscence was noted during the procedure. The expectant management of uterine dehiscence detected by ultrasound during the first trimester is possible. Although the outcome was good in this case, we cannot advocate for expectant management in all cases of uterine dehiscence, because of the increased risk of uterine rupture that can lead to life-threatening complications.

**Keywords:** uterine dehiscence, uterine rupture

## Ultrasonographic evaluation of *corpus callosum* – a simple method

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**Introduction.** *Corpus callosum* is the largest fiber structure of the white matter, designed to connect the two cerebral hemispheres. Its role is to integrate motor functions, sensory and cognitive processes. The ultrasound evaluation of the *corpus callosum* is visible from 18 weeks, although at 20 weeks all components of *corpus callosum* are visible. Its growth development continues until three years of life, when it reaches the final form. Agenesis of the *corpus callosum* is an easy diagnostic, but other diagnoses concerning length, width and structure of short *corpus callosum* can be a challenge. Length anomaly can be appreciated using growth diagrams of the gestational age. It can be formulated using growth diagram. That is the reason why we consider it very important to have growth nomograms for the population in Romania, since the dimensions of *corpus callosum* vary according to sex, race and geographical area. Evaluating the length and comparing to nomograms is not always correct, because it can be different from the values in other populations, without being pathological. In order to avoid this issue, a ratio was proposed that was shown to be constant thorough the pregnancy. The ratio is defined by dividing the internal occipitofrontal diameter to the *corpus callosum* maximal length. It is stated that this is constant, despite the gestational age, and it is around 2.24-2.46. **Materials and method.** We included in this study all the patients examined in our unit between 30.05.2023 and 14.07.2023 for second-trimester and third-trimester anomaly scans. This is a pilot study for a larger one included in the PhD thesis of Mihai-George Loghin. We evaluated 96 patients, two patients with agenesis of corpus callosum, and for six patients could not be measured due to technical difficulties. Seventy-nine pregnant patients in the second trimester and nine patients in the third trimester were analyzed. The length of the *corpus callosum* and the internal occipitofrontal diameter were measured either by transvaginal or transabdominal approach, then the ratio between the two structures was calculated. **Results and conclusions.** Currently, pregnant women with a gestational age between 20 and 32 weeks were included in the study. Based on the measurements performed in our clinic, we want to create nomograms for this ratio (occipitofrontal diameter and *corpus callosum* length) distributed by gestational age for the local population. We found that most patients fall within the range of 2.4-2.6 for the local population. The highest value obtained was 3.6, and the lowest 2.02. Of the 79 patients analyzed, two cases were excluded, because the fetus presented agenesis of the *corpus callosum*. For the patients followed-up over time, it was observed that the value ratio remained relatively constant along with the fetal growth.

**Keywords:** *corpus callosum*, anomaly scan, ratio occipitofronal length, *corpus callosum* length

## Complex fetal cardiac anomaly in a case of 22q11.2 deletion – a journey in pictures from diagnosis to delivery

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**Introduction.** We present a case of complex fetal cardiac anomaly (interrupted aortic arch [IAA] type B, large malalignment – type ventricular septal defect [VSD], and pulmonary valve dysplasia) diagnosed in the second trimester, associated with microdeletion 22q11.2 that was followed throughout the pregnancy until delivery. We also bring into discussion the differential diagnosis, the prognosis and outcome. **Materials and method.** The patient is a 34-year-old IG IP who obtained a spontaneous pregnancy while starting diagnostic work-up for infertility. The first-trimester anomaly scan was reported as normal, and she had a low-risk NIPT result for trisomies 21, 18 and 13. At 22 weeks, the differential diagnosis was made between severe aortic coarctation and tubular hypoplasia with VSD and IAA. The fetal thymus appeared as small and, also, a dilated *cavum septum pellucidum* was observed. **Results.** The fetal echocardiography performed by a pediatric cardiologist established the final diagnosis. Invasive genetic testing revealed 22q11.2 deletion, and genetic counseling was offered to the patient who decided to continue the pregnancy. She had regular follow-up with obstetric scans every 2-3 weeks to monitor fetal growth and the condition, along with amniotic fluid volume. She opted to deliver in Germany, so that the neonatal cardiac surgery can be performed in an experienced center for cardiac malformations. **Conclusions.** We discuss a case of 22q11.2 deletion syndrome associated with a complex cardiac anomaly, emphasizing the ultrasounds aspects in a continuous manner until delivery.

**Keywords:** cardiac anomaly, 22q11.2 microdeletion, cardiac surgery

## Fetal cystic mediastinal mass: what's the origin? Case report and discussion

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**Introduction.** The purpose of our paper is to present an interesting case of voluminous fetal cystic mediastinal mass diagnosed in the third trimester which raised questions among specialists regarding its origin. **Materials and method.** Our patient is a 23-year-old IG IP who was attended throughout the pregnancy in our hospital. Her personal medical history is uneventful and the first-trimester and second-trimester anomaly scans were reported as normal. The first-trimester combined screening has a low-risk result for aneuploidies. At the third-trimester fetal anomaly scan, a voluminous transonic mass was seen in the mediastinum, apparently tangent to the esophagus and very close to the trachea. The fetal stomach and amniotic fluid volume appeared normal, and fetal swallowing movements were observed. **Results.** A second opinion from a fetal-maternal specialist was sought, and a fetal MRI was performed, the latter stating as most probable an esophageal diverticulum or a duplication cyst with a possible differential diagnosis of bronchogenic cyst. The mass continued to grow until delivery, when it reached about 7 cm in diameter. The newborn adapted very well at birth and is currently undergoing detailed diagnostic work-up in a multidisciplinary team, in a pediatric hospital. **Conclusions.** We report the case of a rare fetal malformation which brings into attention several differential diagnoses and opens the discussion regarding best therapeutic approach.

**Keywords:** mediastinal mass, fetal MRI, esophageal diverticulum

## Fetal atrial septal aneurysm: follow-up from second to third trimester

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**Introduction and objective.** Atrial septal aneurysm (ASA) is a rarely reported fetal finding. Its definition is variable, but the diagnosis is usually made when the foramen ovale flap extends at least halfway across the left atrium. It is considered a transient, self-limiting condition, but occasionally it can be complicated by fetal arrhythmia or left ventricular (LV) inflow obstruction – if longstanding, this can lead to left heart hypoplasia. **Methodology.** We present two cases of ASA diagnosed at the second-trimester scan, one of which was subsequently complicated by LV inflow obstruction and the prenatal suspicion of hypoplastic aortic arch. **Results.** The progression to left heart hypoplasia in one of our cases is a good illustration of how structure fits function – a small LV preload can lead to a decreased LV output, which in turn will end up in a hypoplastic LV and hypoplastic LV outflow tract, but the physiological functional changes in the newborn circulation can restore the normal cardiac structure. Therefore, during the prenatal counseling of suspected LV/aortic arch hypoplasia, one must keep in mind obstructive ASA as a differential diagnosis, since the outcome is almost always spontaneously favorable after birth. **Discussion and conclusions.** This report is a good illustration of how structure follows function: a small LV preload can lead to a decreased LV output, which in turn will end up in a hypoplastic LV and outflow tract – all this is reversible after birth, due to the physiological circulatory modifications that occur in the newborn

**Keywords:** atrial septal aneurysm, prenatal screening, fetal echocardiography

## Ultrasound diagnosis in ovarian tumors – towards a common terminology

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**Introduction.** Ultrasound scan is the most important method of identifying and describing ovarian tumors. It can provide useful information in the diagnosis and management of ovarian tumors. The terms for describing ultrasound findings must be spread among all practitioners, so that they can all use the same language. **Materials and method.** We present a series of clinical cases that were evaluated in our clinic. The ultrasound scan description was made using IOTA (International Ovarian Tumor Analysis) criteria to determine the risk of malignancy. The ultrasound conclusions were compared with the pathological results found after surgery. **Results.** We present a series of cases of ovarian tumors that were evaluated clinically and paraclinically by tumor markers and imaging (ultrasound, magnetic resonance and computer tomography). In these cases, it was decided to perform the surgical intervention for the excision of ovarian tumor. Before surgery, ultrasound elements were used to determine the risk of malignancy of tumors. IOTA criteria were used. The pathological results were compared with the ultrasound findings. We noticed that the correct and uniform use of the same terminology presented a high agreement between the findings made before and after the surgery. It is important to establish the risk of malignancy of the ovarian tumor in order to be able to indicate a correct management and to perform a surgery in a specialized center. **Conclusions.** Transvaginal ultrasound is a reliable method to distinguish malignant ovarian tumors from benign ones. The IOTA criteria have a good accuracy in establishing the diagnosis before surgery, and we advocate their use in current practice.

**Keywords:** IOTA, malignancy, ovarian tumors

## Mammogram and ultrasonography – teamwork in breast cancer diagnosis

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**Introduction.** Breast cancer stands as the prevailing malignant condition identified in women globally, being the main death cause in women affected by cancer. The most frequently used imaging techniques for breast cancer diagnosis and screening are ultrasonography and mammogram, alone or combined, none of them having 100% sensibility. Associating ultrasound to mammography can improve screening's performance by reducing the false-negative rates of the screening process. **Materials and method.** We present the case of a 63-year-old patient evaluated at the "Bucur" Maternity, Bucharest, for a breast tumor discovered through self-examination. The patient underwent a mammogram and an ultrasound, followed by a core needle biopsy to establish the diagnosis. **Results.** The patient had a firm, mobile and slightly tender tumor of approximately 3 cm in the upper-inner quadrant of the left breast. Mammography established a BIRADS 0 lesion described as a focal asymmetry formed by overlapping planes and a retracted area which showed an opacity covered by fibroglandular tissue. The mammogram was followed by ultrasound scan performed in order to clarify the characteristics of the tumor. Ultrasonography revealed an irregular, hypoechoic, heterogeneous mass with diffuse and irregular contour, with posterior acoustic attenuation and Doppler signal. The BIRADS was appreciated at 5. Needle core biopsy was recommended and performed. The histopathological result was invasive breast carcinoma with the following immunohistochemistry results: ER (estrogen receptors) 100%, PGR (progesterone receptors) 99%, Her2 negative, Ki67 20%, luminal B. **Conclusions.** Relying solely on mammogram could have led to a false-negative result, delaying the correct management. In this case, ultrasound was more accurate than mammogram, supporting the idea that the combined mammogram and ultrasound scan have a higher rate of accuracy than mammogram or ultrasound alone in the diagnosis of breast cancer.

**Keywords:** breast, mammogram, ultrasound

## Vanishing gastroschisis or physiological hernia – challenges of an early diagnosis

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**Introduction.** The diagnosis of gastroschisis and omphalocele in the first trimester is important due to the correlation with other anomalies (genetic disorders, complications and poor prognosis of the fetus). The diagnosis of the abdominal wall defects, especially omphalocele, is more challenging before 12 weeks of gestation, considering the physiologic herniation of the midgut into the umbilical cord. **Materials and method.** We present the case of a pregnant woman who underwent an ultrasound scan for pregnancy confirmation at our clinic, at 10 weeks and 4 days of gestation. The ultrasound findings were highly suggestive of gastroschisis. However, at 11 weeks and 4 days of gestation, the complete resolution was observed. **Results.** The 29-year-old primipara was referred in our unit for ultrasound confirmation and dating of the pregnancy at 10 weeks and 4 days of gestation. The scan revealed an echogenic structure with irregular borders emerging from the right side of the umbilical cord insertion, suggesting an abdominal wall defect with features consistent with gastroschisis. The main feature of the image was the irregular border, the lack of a membrane to cover it and, also, the lateral position relative to the umbilical vessels. However, one week later, the complete resolution of the discussed anomalies was observed, with the complete reintegration of the bowel into the abdomen. A second-trimester anomaly scan performed at 22 weeks of gestation demonstrated a normal insertion of the umbilical cord at the abdominal end and the continuous abdominal wall. **Conclusions.** In our case, the features of the midgut hernia were highly suggestive for gastroschisis, with an excellent outcome observed within one week, leading to the complete resolution of the abdominal defect. This case highlights that transient gastroschisis differential diagnosis should be made with physiological herniation, and the decisions should be taken only after 12 weeks, in order to avoid unjustified pregnancy termination.

**Keywords:** gastroschisis, ultrasound, pregnancy

## Bilateral fetal cystic ovarian pathology – case study

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The most frequent fetal intraabdominal cystic masses are represented by ovarian cysts. These are detected sonographically in 1:2500 births. They can be unilateral or bilateral, unilocular or with daughter cysts inside, with transonic or hypoechoic ultrasound appearance. Complex cysts are rarely found. Most frequently, these fetal ovarian cysts appear under the influence of fetal gonadotropin hormones, maternal estrogens and placental choriogonadotropins. Cysts can be complicated by torsion, intraperitoneal rupture, intracystic bleeding or by compression on neighboring organs. They can also cause polyhydramnios through fetal intestinal compression. Their treatment varies from observation to surgical intervention.

**Keywords:** fetal ovarian cysts, cystic torsion, management of fetal ovarian cysts

## Fetal tumors detectable by ultrasound in the first trimester of pregnancy

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**Introduction.** Part of the fetal pathology detected by ultrasound is represented by benign or malignant tumors, with an ultrasound appearance sometimes different from that found in pediatric pathology. By increasing the accessibility of ultrasound examinations for pregnant women in our country in recent years, the frequency of detection of fetal development anomalies has also increased. A major contribution was made by the increase in the performance of the ultrasound, their number and the competence of the examiners. The incidence of these tumors is still much underdiagnosed due to the multitude of spontaneous abortions, occurring in undispensed pregnant women or in those who didn't have an ultrasound examination. **Materials and method.** For the completion of this study, the ATLAS Med program served as the source for data collection, while Microsoft Office Excel 2019 and Microsoft Office Word 2019 were used for creating tables and graphs. A total of 2224 cases of abortions were retrospectively and descriptively analyzed, with gestational ages ranging from 6 weeks to 13 weeks and 6 days. The data were collected from the Emergency University Hospital of Sibiu during the period 2016-2023. **Results.** Forty-two cases were discovered, representing 2% of the abortions in the hospital. As expected, we failed to discover all the cases with fetal tumors in the first trimester, most of them because they came for the first visit too late. **Conclusions.** The tumoral pathology in the first trimester requires a careful examination by the sonographer for its diagnosis. The detection rate largely depends on the level of sensitivity among the pregnant population and the accessibility of medical services equipped with advanced equipment, as well as the number of competent physicians in obstetrical ultrasound.

**Keywords:** sacrococcygeal teratoma, omphalocele, cystic hygroma

## Fetal heart assessment on routine first-trimester ultrasound scan

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**Introduction.** Screening for congenital heart defects (CHD) in the first trimester has been shown to be effective in low-risk populations. However, it is usually not performed routinely. Our aim was to assess the feasibility of the fetal heart assessment and screening for major CHD by routine first-trimester scan. **Materials and method.** This was a retrospective two-year study of 1423 uncomplicated pregnancies, examined during the first-trimester screening for chromosomal and fetal structural abnormalities. To improve the fetal heart visualization on anatomic survey, we have performed the scans starting from 12 gestational weeks. The four-chamber view (4CV) and three vessels and trachea view (3VTV) of fetal hearts were assessed by grayscale and color or directional power Doppler imaging. The final diagnosis of the suspected CHD was based on the second-trimester and third-trimester fetal and postnatal echocardiography or autopsy. **Results and conclusions.** The median crown-rump length was 61.7 mm. The 4CV and the 3VTV were considered normal in 95% of cases (1352/1423), in 2% of cases (29/1423) unfeasible, and in 3% of cases (42/1423) abnormal. Overall, on the first-trimester scan we identified 42 cases of CHD, and among them there were 33 (2.32%) confirmed major CHD, as follows: eight cases of double outlet right ventricle (DORV); eight atrioventricular septal defects (AVSD); five cases of pulmonary atresia; four cases of tetralogy of Fallot (TOF); four cases of hypoplastic left heart syndrome; two cases of pulmonary stenosis; two cases of mitral atresia and one mitral stenosis; one case of tricuspid atresia; one case of transposition of great arteries (TGA), one aortic hypoplasia, one case of critical stenosis of the aorta, and three cases of right atrial isomerism. Among the confirmed congenital heart defects, seven were complex cardiac anomalies. In four cases, the diagnosis was slightly modified later in gestation. In addition, 14 congenital heart defects were missed in the first trimester, as follows: four cases of aortic hypoplasia, two TOF, two TGA, two DORV, two cases of coarctation of the aorta, one pulmonary atresia and one right aortic arch. The assessment by the 4CV and the 3VTV for major congenital heart defects had a sensitivity and specificity of 70.2% and 99.3%, respectively, with a positive and negative predictive value of 78.5% and 98.9%, respectively. Among 33 fetuses with CHD, seven fetuses (20.6%) had other structural abnormalities. In 15 fetuses (44.11%), the NT was above the 95$^{th}$ centile. Eleven fetuses (32.35%) showed reversed flow in *ductus venosus* and/or tricuspid regurgitation. First-trimester cardiac screening and the detection of major congenital heart defects are feasible during the routine first-trimester scan. However, the early detailed assessment of the fetal heart requires expertise in fetal echocardiography and complementary scans in both the second and the third trimester, since there are many defects that evolve over time which are best assessed later in gestation.

**Keywords:** congenital heart defects, fetal echocardiography, first-trimester screening, ultrasound

## Results that we expect by merging the specialist in maternal-fetal medicine with artificial intelligence (AI)

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**Introduction.** The human brain has 100 billion neurons, with 1000 connections per neuron and 200 operations per second for each connection. Moore's law says that, in approximately 20-30 years, computers will surpass the computing power of the human brain, which is of the order of 1014 operations per second. Ultrasound is now an essential tool in clinical maternal-fetal medicine practice and performs an important role in the diagnosis of fetal chromosomal syndromes. Many of the chromosomal syndromes have similar sonographic findings, and the definitive diagnosis cannot be determined on the basis of ultrasound alone. In recent years, artificial intelligence (AI) has been gradually applied in the field of fetal ultrasound, as it can solve problems or acquire knowledge with computer algorithms similar to human intelligence. **Aim.** We aimed to review and synthetize the publications on the role and benefits in using AI in sonographic fetal diagnosis. **Results.** Numerous studies have indicated that combining AI and prenatal ultrasound can significantly improve the efficacy and accuracy of plane recognition, reduce the variance between different operators, and confirm the consistency and repeatability of plane adoption. Artificial intelligence has shown significant clinical potential in congenital disease diagnosis, shortening the training periods, reducing the subjective variability of clinicians, and providing potential solutions for areas with scarce medical resources. **Conclusions.** What remains further to discuss is medical ethics, along with an appropriate collaboration between the AI developers and sonographers, as current studies focus more on the algorithm than on clinical utility.

**Keywords:** artificial intelligence, ultrasonography, prenatal diagnosis

## Case report – omphalocele and micropenis

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**Introduction.** One of the most prevalent abdominal wall defects is omphalocele (exomphalos). This congenital anomaly can be diagnosed early in pregnancy at the time of the first-trimester scan, with a direct impact on prenatal and postnatal fetal prognosis and in management decisions. Other structural or chromosomal anomalies should be excluded. A multidisciplinary approach is necessary for an efficient prenatal counseling and an optimal perinatal care. We present a case of omphalocele detected in the second trimester of pregnancy, with a favorable outcome after postpartum surgery. **Methodology.** A 24-year-old female patient was diagnosed with an abdominal wall defect (omphalocele) at 21 weeks of gestation. Unfortunately, the patient had no first-trimester obstetrical care. She addressed to the Prenatal Diagnosis Unit of the Emergency County Clinical Hospital of Craiova for invasive genetic testing (amniocentesis). The ultrasound evaluation confirmed the omphalocele, yet the fetal sex was declared ambiguous. **Results.** The genetics confirmed a normal male fetal karyotype. The pregnancy got complicated with early growth restriction as the fetus measured under the 10th percentile. A caesarean section delivery was performed at 35 weeks and 3 days of gestation, due to chronic fetal distress. Postpartum diagnosis showed the omphalocele, yet the ambiguous genitalia were confirmed as micropenis. The 1700-gram neonate had a surgical repair of the abdominal wall defect, with excellent prognosis and normal development at the nine-month follow-up. **Conclusions.** An accurate prenatal diagnosis includes combining US evaluation with invasive testing. The termination of pregnancy can be recommended after proper counseling, especially in cases of a large defect and severe associated anomalies. However, unfortunately, in utero surgery, in these cases, has not been yet successful. Postnatal early interventions are usually required in specialized pediatric centers with excellent results, demonstrating a rapid development in this field.

**Keywords:** omphalocele, genetic diagnosis, pregnancy, ultrasound, micropenis

## Cervical incompetence – ultrasound prediction

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**Introduction.** Cervical incompetence (cervical insufficiency) is the inability of the uterine cervix to retain a pregnancy in the absence of uterine contractions. It typically presents as acute, painless dilatation of the cervix, which can lead to a midtrimester pregnancy loss. Transvaginal ultrasound can be used as a diagnostic tool and to monitor cervical changes in cases of cervical incompetence. **Materials and method.** We have searched the literature on articles published on this aspect on PubMed, Google Scholar and Cochrane, by using the following keywords: "cervical incompetence", "cervical shortening", "ultrasound measurements". We found that some of the ultrasound aspects used in the evaluation of cervical incompetence are: cervical length measurement, funneling assessment and bulging of the fetal membranes into a widened internal os. **Conclusions.** Cervical shortening is a prognostic indicator for the risk of preterm labor progressing into preterm delivery.

**Keywords:** cervical incompetence, cervical shortening, ultrasound measurements

## Chorionic nodules: an early sonographic sign of pregnancy loss?

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This study investigates the importance of the early sonographic sign of chorionic nodules in the context of pregnancy impairment. Chorionic nodules are cystic formations commonly encountered during pregnancy that develop in the chorionic membrane. Although most chorionic nodules are asymptomatic and do not have a negative impact on the pregnancy, some may be associated with complications. Research methods used in this study included clinical examination and detailed ultrasound investigations of singleton pregnant women diagnosed with chorionic nodules. The patients were monitored during the first trimester to assess for early signs of pregnancy impairment and to identify possible complications associated with chorionic nodules. The preliminary results showed that the presence of chorionic nodules was not directly associated with pregnancy impairment in most cases. However, some pregnant women with chorionic nodules have had early ultrasound signs of pregnancy damage, such as irregular growth in fetal size, abnormalities in organ development, or decreased amniotic fluid. These signs indicated possible complications and the need for a careful monitoring of the pregnancy. The preliminary findings suggest that the early ultrasound sign of pregnancy impairment in the presence of chorionic nodules may serve as an early indicator of potential complications. The early identification of these signs can allow prompt interventions and appropriate pregnancy management to minimize the associated risks. However, further observations on screening ultrasounds, possibly research of serological markers and further investigations are needed to confirm these preliminary findings and to better understand the clinical and pathophysiological implications of chorionic nodules in pregnancy.

**Keywords:** chorionic nodules, other ultrasound signs, pregnancy impairment, complications, monitoring

## Ovarian ultrasound modifications during infertility treatments

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**Introduction.** Polycystic ovary syndrome (PCOS) represents one of the most frequent reproductive pathologies leading to infertility due to anovulation. According to the Rotterdam's criteria, a patient must have at least two out of the next three criteria: high testosterone levels, menstrual irregularities, and typical polycystic ovarian aspect of the ovaries during ultrasound examination. Lately, the administration of inositol and vitex has proven positive effects on patients with PCOS and infertility. **Materials and method.** Between 4 January 2021 and 1 March 2022, we conducted a prospective study at the "Elena Doamna" Clinical Hospital of Obstetrics and Gynecology, Iași. We enrolled 33 patients with PCOS and primary or secondary infertility who accepted to take part in our study and signed the informed agreement. All patients had an ultrasound performed during their follicular phase. A sample of blood was obtained in order to obtain serum values for kisspeptin, LH, FSH, estradiol, testosterone, insulin and glycemic levels. All 33 patients agreed to a treatment with inositol and vitex for a period of three months, and to be clinically and paraclinically reevaluated afterwards. **Results and conclusions.** The post-therapeutic serum values showed a decrease in kisspeptin values with approximately 7.8%, a decrease in LH values with approximately 33%, and a decrease in prolactin with 22.16%. A difference has also been noticed during ultrasound examination. The ovarian volume for the right and left ovary decreased after the treatment with inositol and vitex in patients with PCOS. Considering our results, we can confirm that our study showed positive changes in patients with PCOS, and these must be taken in consideration when treating this pathology.

**Keywords:** ovarian volume, kisspeptin, ultrasound

## Prenatal diagnosis and management of omphalocele

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**Background.** The omphalocele represents a frequent congenital anterior abdominal wall defect with an overall morbidity and mortality that is decided by the expanse of the defect and the severity of associated anomalies. Routine prenatal screening and ultrasound diagnosis of the anterior midline defect and any associated anomalies are considered nowadays a standard of care. Moreover, its diagnosis during pregnancy requires answers regarding the long-term prognosis, motor and cognitive development, and cosmesis. **Case presentation.** We present the case of a 33-year-old pregnant patient, with 40 weeks of gestation, having the following obstetrical history: gestation 7, vaginal births 6, abortions 0, with the lack of prenatal care due to socioeconomic factors such as low family income and education. The patient presented at the "Elena Doamna" Clinical Hospital of Obstetrics and Gynecology, Iași, accusing lower abdominal pain. The obstetrical ultrasound examination revealed a 40-week pregnancy with a single viable fetus with 34 weeks and 5 days estimated age, and 1693 g estimated weight. Furthermore, it was found a defect located at the umbilical cord insertion with the sac that measured 32.8 mm, containing loops of intestines, liver and ascites. Also, it was noticed a laterodeviation of the cord with ventricular septal defect measuring 2.4 mm, and single umbilical artery. Few days later, the patient gave birth by caesarean section to a female newborn, with 2500 g weight and an Apgar score of 2-5-6. The postpartum evolution was not favorable, the newborn being transported to the pediatrics surgery department for evaluation and surgical management. The newborn died in the second day post-surgery. **Discussion and conclusions.** Normally, the anterior midline abdominal defect occurs at the umbilical cord, with a size between 2 to 10 cm, containing herniating midgut and various organs, such as the liver, spleen and gonads, covered by three layers (the peritoneum, the Wharton's jelly layer, and the amniotic layer). The outcome in the presented case, which associated fetal growth restriction, was poor.

**Keywords:** omphalocele, prenatal diagnosis, fetal growth restriction

## Ultrasound spectrum of foramen ovale during pregnancy

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When quality is the target, for fetal cardiac ultrasound screening, it is mandatory to look after various aspects, thus to ensure completeness of information. In fetal life, foramen ovale allows the oxygenated blood coming from the ductus venosus to reach the left atrium, contributing to the left ventricular output. In normal fetuses, foramen ovale flap moves is only 30% into the left atrial diameter. Foramen ovale has been defined as redundant when it herniates into the left atrium for more than 50% of the left atrial diameter, in normal fetuses or in the context of fetal congenital heart disease. In these cases, ventricular disproportion might occur, which is one of the indirect signs of aortic coarctation. A higher flap through the left atrium leads to a dynamic obstruction of the mitral inflow. Restricted foramen ovale is widely associated with a poor fetal and neonatal outcome, associated with pulmonary hypertension, a diameter less than 3 mm needing urgent balloon atrial septostomy after delivery. From the referral cases, I hope to demonstrate the hemodynamic mechanism behind the size variations of the foramen ovale, in normal fetuses and in those who mimic cardiac anomalies, because so far there is no consensus on the diagnosis and management of fetal restrictive or redundant foramen ovale. Obtaining the best image quality in the acquisition of the standard scanning plans allows for an appropriate interpretation for assessing the pathogenesis, diagnosis, clinical features, treatment, outcome and counseling of isolated foramen ovale defects, or in association to other cardiac or extracardiac anomalies.

**Keywords:** fetal echocardiography, redundant foramen ovale, restrictive foramen ovale

## Role of parental consanguinity and specific ultrasound features

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Consanguineous marriages between close biological relatives, most frequently first or second cousins, observed in up to 10% of the world's population, are a manifest of historical and religious pride and prejudice. The offspring of consanguineous unions are more often homozygous for particular allele and, therefore, leads to autosomal recessive disorders which may be lethal or debilitating, but also with inborn errors of metabolism, with high rates of abortion, miscarriage, stillbirths, death in the first month and up to 10 years of life. This is a case report of a 19-year-old patient, OGIP, who was referred to our department at 23 weeks of gestation. Detailed ultrasound scan revealed mild ventriculomegaly and asymmetry of anterior horns of lateral ventricles with signs of intraventricular hemorrhage. Fetal MRI confirmed the ultrasound diagnosis. At series ultrasound scans, the fetus developed progressive, symmetrical intrauterine growth restriction, polyhydramnios, and signs of cervical insufficiency. The aim of this lecture is to provide for these couples a screening protocol with the best possible genetic counseling, antenatal and postnatal care, sympathetically and nonjudgmentally, as the best achievable results can be obtained.

**Keywords:** consanguinity, homozygous, autosomal recessive

## DiGeorge syndrome – a diagnostic challenge

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**Introduction.** The 22q11 deletion syndrome is one of the most common human microdeletion syndromes, with a broad spectrum of abnormalities, from severe cardiovascular malformations and thymus anomalies to velopharyngeal insufficiency. These are difficult to evaluate in the first trimester, so the diagnostic is overdue. **Materials and method.** We present the case of a 35-year-old patient with a 16-week pregnancy, in which the first-trimester screening suspected a cardiac anomaly associated with the hypoplasia of the thymus. She performed a NIPT test, which raised the suspicion of 22q11 microdeletion. **Results.** Amniocentesis with microarray analysis was necessary to confirm the diagnosis, and the morphology of the second trimester revealed a pulmonary artery anomaly associated with hypoplasia of the thymus. **Conclusions.** Microdeletion 22q11 is not such a rare anomaly, therefore we should consider it from the first trimester of pregnancy when we identify a cardiac malformation associated or not with other anomalies, in order to be able to give the patient the best guidance.

**Keywords:** 22q11 microdeletion, DiGeorge syndrome, cardiac anomalies, thymus

## Hamartoma – a rare breast tumor. Case presentations and review of literature data

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**Introduction.** A breast hamartoma (fibroadenolipoma) is a rare, benign mass of disorganized mature breast tissue elements, composed of well-encapsulated fatty, fibrous and adenomatous elements. This type of breast tumor can be present in patients with some syndromes such as Cowden disease or Peutz-Jeghers syndrome. Breast hamartoma often present as a prominent palpable mass or as gross breast asymmetry. In the event the lesion undergoes rapid progressive growth, surgical excision would be indicated. Hamartomas can recur if the excision is incomplete. **Materials and method.** We present 13 cases of breast hamartomata treated by surgery, from January 2018 to June 2023, in the "Cuza Vodă" Clinical Hospital of Obstetrics and Gynecology, Iași. **Results.** The tumor varied in size from 1 and 17 cm (average: 6.75 cm). The mean age for these patients was 33.35 years old (limits: 22 to 57 years old). The clinical presentation was a painless mass. The diagnosis was established by ultrasound exam. On ultrasound, hamartomas appeared as well-circumscribed oval heterogeneous in echotexture. The surgical treatment was represented by lumpectomy with a small portion of normal tissue around the tumor. Macroscopically, they are typically surrounded by fibrous tissue, demarcating them from adjacent breast tissue. The cut surface showed variable fatty areas within a fibrotic stroma. The variability in histological features can be problematic for pathologists and contributes to the suspected underdiagnosis of this entity. Also, we have a case of breast lipoma with a rapid growth which was diagnosed by ultrasound exam and MRI as hamartoma. **Conclusions.** Most hamartomas have typical features on ultrasound, which are related to the presence of fibrous, glandular and adipose tissues. The correct identification of hamartoma is important, because there are problems of recurrence. Women from our study had no recurrence during the follow-up period.

**Keywords:** breast hamartoma, ultrasound, diagnosis

## Concordance between ultrasound evaluation of cervical cancer and pathological outcome – case series

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**Background.** Cervical cancer is the fourth most common cancer in the world affecting females, with high incidence and mortality. In recent years, ultrasound has gained increased attention in the preoperative staging, and Doppler color exam increased its clinical applicability for cervical cancer. **Aim.** Our objective was to study the tumor size, color score and the possible invasion of parametrium tissue, to predict the operability of cases with cervical carcinoma. **Materials and method.** The study group comprised 78 patients with histologically confirmed carcinoma of the cervix. A prospective study was performed which included patients diagnosed with cervical cancer admitted to the First Gynecology Department, Iași, during the period 2017-2022. Maximum cervical tumor length, anterior-posterior diameter and width have been measured. The intratumoral blood flow was subjectively evaluated by color Doppler examination. We also evaluated the tumor extension to the level of the parametrium. **Results.** The average age of the patients was 54.3±3 years old (range: 29-81 years old). Nineteen patients (24.35%) were diagnosed with stage IB (FIGO) cervical cancer, 51 patients (63.38%) were diagnosed with stage IIB or higher, and eight women were diagnosed with *in situ* carcinoma. Histologically, 68 cases (87.17%) were squamous cell carcinoma and 10 cases (12.83%) were adenocarcinoma. The sonographic findings suggestive of parametrial invasion are represented by an extension of the cervical tumor beyond the cervical stroma and the presence of hypoechoic irregular tissue infiltrating the paracervical tissue. The surrounding cervical tissue with invasion usually had a very scarce vascularization. Transvaginal ultrasound combined with colposcopy increases the accuracy of diagnosis in early-stage cervical cancer. **Conclusions.** The results of this study demonstrate that transvaginal ultrasound – an inexpensive method, easily accepted by patients – could be carried out quickly and could be used to evaluate the local extension of cases with large cervical tumors, and to monitor the effectiveness of cervical cancer treatment widely as an alternative method to MRI. There was an increased concordance between the ultrasound evaluation and the histological results.

**Keywords:** cervical cancer, ultrasonography, operability

## Fetal lower urinary tract obstruction – case report

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**Introduction.** Fetal lower urinary tract obstruction is a condition that leads to excessive enlargement of the urinary bladder and bilateral obstructive uropathy with irreversible renal pathology in severe cases, thus having a rather reserved prognosis. The most common causes are posterior urethral valves or urethral atresia, and the diagnosis is made by prenatal ultrasound. **Materials and method.** A 32-year-old patient, known to be 20 weeks pregnant, came for a second-trimester morphological evaluation. The screening ultrasound showed that the abdominal space was mostly occupied by the urinary bladder with a "keyhole" appearance, measuring 6.5 cm in diameter, with the liver and stomach being visible. Intestinal loops could not be seen and, when it came to kidneys, both of them had an abnormal structure, being hyperechoic and with severe ureterohydronephrosis. The ureter was dilated in the pelvis, with a diameter of 13 mm, and the appearance was suggestive for urethral atresia or cloacal dysgenesis. From the morphological evaluation, it was noted that the rest of the fetal structures had a normal ultrasound appearance, the placenta was located anteriorly, with grade I of maturity, the umbilical cord had central insertion, with three vessels, and the amniotic fluid was of normal quantity. **Results and conclusions.** Regarding the treatment, several options can be taken into consideration, depending on the fetal prognosis, especially when it comes to the renal and pulmonary failure. Percutaneous placement of a vesicoamniotic shunt, fetal cystoscopy or fetal vesicostomy can be considered as a possible treatment. As for the examined patient, the couple was counseled and, due to the renal pathology, the therapeutic abortion was chosen.

**Keywords:** urethral atresia, "keyhole" appearance of the urinary bladder, severe ureterohydronephrosis

## Uterine malformations – the potential cause of acute abdomen? Clinical case presentation

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**Introduction.** Female genital malformations are deviations from normal anatomy that could impair the reproductive potential of the woman or, in complex cases, the woman's health. Developmental anomalies of the genital tract result from defective fusion and absorption of various parts of Müllerian ducts in fetal life and which persists in extrauterine life. The ESHRE/ESGE classification system is based on anatomy. Anomalies are classified into the following main classes, expressing uterine anatomical deviations deriving from the same embryological origin: U0 – normal uterus; U1 – dysmorphic uterus; U2 – septate uterus; U3 – bicorporeal uterus; U4 – hemi-uterus; U5 – aplastic uterus; U6 – for still unclassified cases. Class U4a is represented by hemi-uterus with a rudimentary (functional) cavity characterized by the presence of a communicating or noncommunicating functional contralateral horn. **Materials and method.** The present scientific work represents a clinical case report of acute surgical abdomen, most likely in the context of a U4a uterine anomaly, in the Department of Obstetrics and Gynecology of the Municipal Hospital Mediaș. **Results.** A 20-year-old nulliparous patient with a history of dysmenorrhea associated with oligomenorrhoea and hypomenorrhea presented to the emergency department with complaints of severe abdominal pain, with no effect on level I and II analgesic therapy, nausea but without vomiting, with sweating and the absence of fever. The clinical examination revealed an acute surgical abdomen of a probable gynecological etiology. The ultrasound examination revealed uterine anomaly, more likely U4a, and fluid peritoneum. Laparoscopic intervention was decided, and an exploratory laparoscopy was performed, which highlighted uterine anomaly type U4a, retrograde menstruation through the fallopian tube corresponding to the rudimentary horn, and extended pelvic adhesion syndrome. Adhesiolysis, lavage and drainage of the Douglas pouch were performed, the patient being later referred to the university clinic for the metroplasty procedure. **Conclusions.** Uterine anomalies type U4a can be the cause of acute abdomen of gynecological etiology. The ultrasound examination has the defining role in establishing the diagnosis and for predicting in time the correction procedures through metroplasty, preventing complications such as acute surgical abdomen, improving the quality of life and the outcomes related to fertility.

**Keywords:** uterine anomaly, acute abdomen, ultrasound examination, laparoscopy

## Recurrent isolated fetal pericardial effusion

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Fetal pericardial effusion represents the accumulation of fluid higher than 2 mm surrounding the heart. It can be associated with hydrops fetalis, heart structural anomalies, arrythmia, viral infection, metabolic disorders, chromosomal anomalies, or it can be isolated (IFPE). We present the case of a 30-year-old healthy secundipara woman referred in our center at 22 weeks of gestation for the assessment of pericardial effusion. The patient had normal results at the noninvasive prenatal test (NIPT) for fetal aneuploidies. A detailed second-trimester anomaly scan revealed significant pericardial effusion (12 mm) and with both lungs compressed inside the fetal thorax, without other signs of fetal structural abnormalities, hydrops, structural or functional cardiac defects. No signs of an active infection were found at the specific investigations, including extended TORCH complex. For additional genetic tests (fetal karyotype and Array-CGH), an amniocentesis was performed, with normal results. Due to the presence of a significant pericardial effusion over the previous three weeks that could result in pulmonary hypoplasia, a pericardiocentesis was performed and 10 ml of serocitrine liquid were aspirated and the lungs reexpanded. Fetal blood was referred for toxoplasmosis, cytomegalovirus and Ebstein-Barr virus testing which were negative. Cytology of the pericardial fluid identified lymphocytes and erythrocytes. The protein content of the pericardial fluid was consistent with a transudate. The pericardial effusion returned gradually during the next weeks, following pericardiocentesis, up until 8 mm at 29 weeks of gestation. Another pericardiocentesis is still on debate, depending on the pericardial effusion progress and its effects on the lung development and the heart hemodynamics. Almost half of the cases of IFPE resolve spontaneously, with a good neonatal outcome. Given the potential for pulmonary hypoplasia and the progression to hydrops, prenatal pericardiocentesis should be considered in similar cases, as it may allow the fetal lungs to develop, improving the fetal prognosis after birth.

**Keywords:** pericardial effusion, pericardiocentesis

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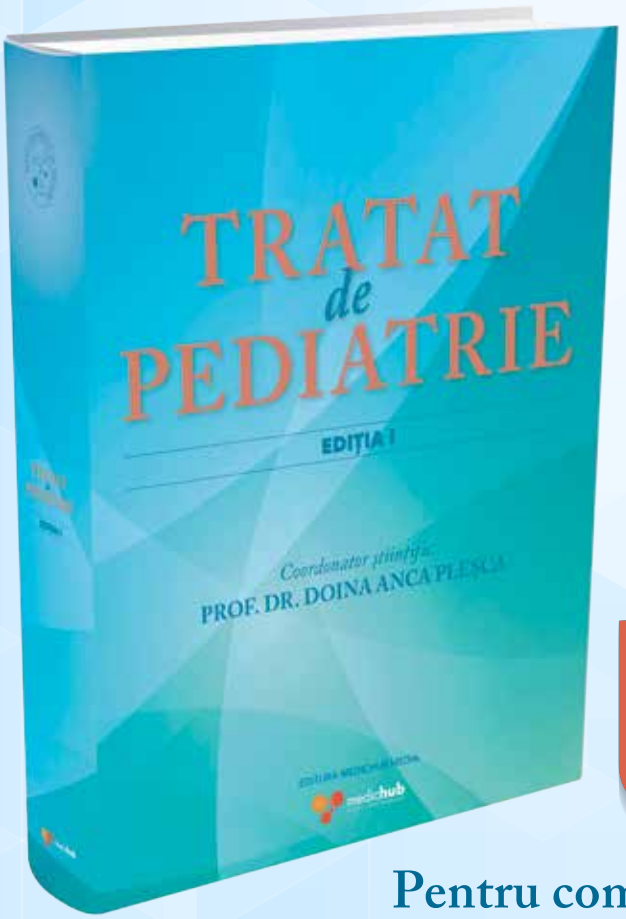


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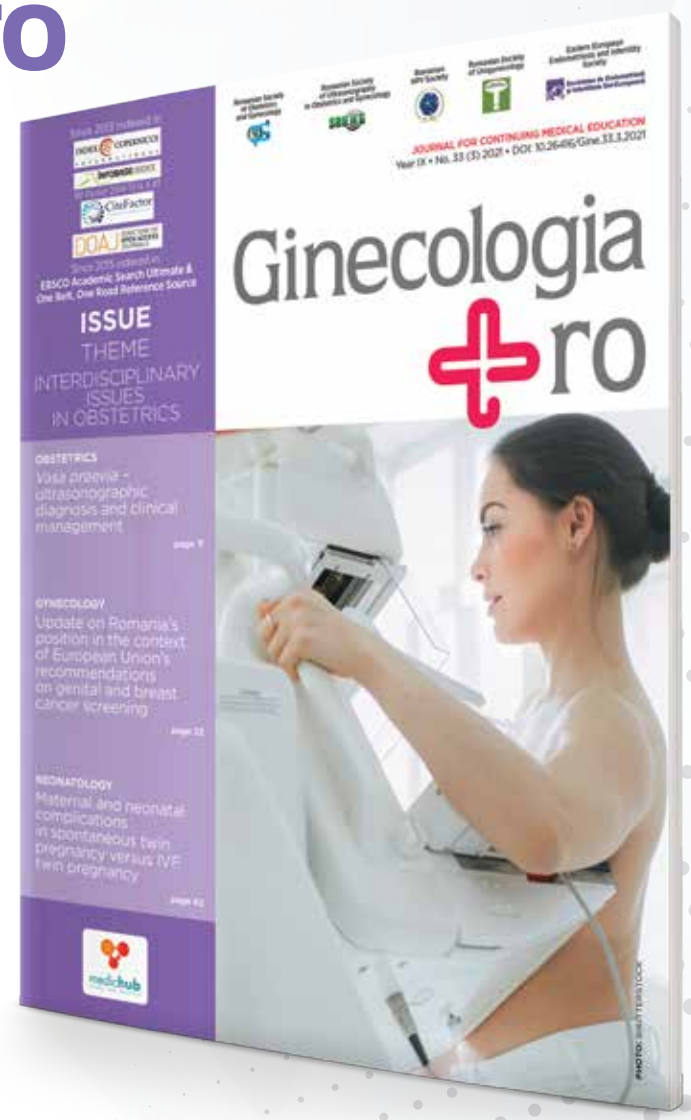


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