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SUMMARIES OF THE 10TH CONGRESS OF THE ROMANIAN SOCIETY OF ULTRASOUND IN OBSTETRICS AND GYNECOLOGY

• 8-10 September 2022, Bucharest, Romania •

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Double test preimplantation: PGT-A and PGT-M in severe diseases with early or late onset

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Introduction. There are 30 years since the first embryonic biopsy, performed by Handyside, to determine fetal sex and genetically dependent sexually transmitted diseases, such as Duchenne muscular dystrophy. Gardner, a student of Edwards, made the first micromanipulations on mice. Embryonic biopsy was not possible until the 1980s, with the development of polymerase chain reaction (PCR). A double test in the future could be the preimplantation genetic testing for aneuploidies (PGT-A) and preimplantation genetic test for monogenic disease (PGT-M) analysis on the biopsied sample from embryos during assisted reproduction cycle. **Methodology.** In 2008 and again in 2010, the ESHRE PGT Consortium published two statements on the routine application of aneuploidy testing for indications such as advanced maternal age, repeated implantation failure, recurrent pregnancy loss and severe male factor. The Committee concludes that PGT-M for adult-onset conditions is ethically justified when the situation is severe, and no safe, effective interventions are available. Before PGT-M, you need an informative study of DNA samples from the couple and their direct relatives. **Results.** ESHRE PGT Consortium published in 2013, 2014 and 2015 the data from 59/60/59 centers on 8164/9769/11,120 cycles with oocyte retrieval: 5020/6278/7155 cycles for PGT-A, 2026/2243/2661 cycles for PGT for monogenic defects, 1039/1189/1231 cycles for PGT-SR and 79/59/73 cycles for sexing for X-linked diseases. From 2005-2016, there were 205 cases reported of PGT-M for adult diseases compared to 85 prenatal diagnoses of the same disorders, showing that couples are less likely to prefer prenatal diagnosis for adult-onset disorders, and there is a trend in reliance on PGT-M in these cases. **Conclusions.** The future lies in noninvasive or minimally invasive PGT and changes in embryonic micromanipulation techniques. A recent meta-analysis of neonatal and postnatal outcomes of children born after PGT shows no difference compared to the control group, reassuring the procedure's safety.

Keywords: preimplantation genetic diagnosis, *in vitro* fertilization, PGT-M

Fetal bradycardia and maternal anti-SSA/SSB antibody positivity – case series and literature review

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Introduction. Fetal arrhythmias are common, usually benign, and divided into three categories: premature contractions, tachyarrhythmias and bradyarrhythmia. Fetal bradycardia is defined as persistent reduction of heart rate under 100-110 beats per minute. In normal heart anatomy cases, this occurs mainly after 20 weeks in pregnancies with positive anti-Ro and anti-La antibodies. **Materials and method.** We present a review of the literature on fetal arrhythmias. We searched English language publications using the following keywords: "fetal arrhythmia", "fetal bradycardia", "maternal antibodies anti-SSB/La" and "maternal antibodies anti-SSA/Ro". We detail two cases with similar onset and different outcomes. We present the clinical evolution in a persistent sinus bradycardia due to the dysfunction of the sinus node and a case with bradycardia occurred in the context of high amounts of maternal anti-SSA/Ro and anti-SSB/La antibodies. The diagnosis of fetal heart rhythm disorders was performed using B-mode and pulsed Doppler echocardiography. **Results and conclusions.** Fetal sinus bradycardia induced by maternal antibodies can develop into atrioventricular blocks and persists through childhood. The early discovery of prenatal rhythm and conduction anomalies offers the chance of early treatment, increase the likelihood of a prenatal intervention, and provide a positive impact on both pre- and postnatal management. Long-term follow-up is advisable.

Keywords: bradycardia, antibodies, echocardiography

The challenges in the diagnosis of PCOS

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Introduction. Polycystic ovary syndrome (PCOS) is one of the most common hormonal disorders among women of reproductive age. The diagnosis of this disorder is a cumulative one because it is established based on the Rotterdam criteria and its new revised edition. **Objectives.** The objective of this paper is to prove that there are still challenges in the ultrasound diagnosis of PCOS. **Methodology.** Transvaginal ultrasounds were performed in different periods of the menstrual cycle and the diagnostic criteria for PCOS were applied, while in some cases transvaginal ultrasound follow-ups were performed. **Results.** By analyzing the obtained ultrasound images, both by taking into consideration the entire clinical context of the case and strictly through AFC, and other imaging criteria of the polycystic ovary, it was established that PCOS could be an elusive diagnosis. **Discussion and conclusions.** PCOS is a complex diagnosis and, while transvaginal ultrasound is imperative for it to be established, the clinical context of the patient as well as the follow-up ultrasounds (in selected cases) are not to be neglected.

Keywords: PCOS, transvaginal ultrasound, AFC

The correlation between pelvic ultrasound and clinical stages in patients suspected with pelvic organ prolapse

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Although pelvic ultrasound has been already used in describing different anatomical defects in managing pelvic organ prolapsed (POP), its routinely use by reconstructive surgeons has not been yet achieved in everyday clinical practice. Pelvic ultrasound has been proven to be easy to access, having a higher performance and lower costs. In the present study, we bring into attention the correlation of pelvic ultrasound with clinical stages in patients suspected with POP in everyday practice. The advantages of pelvic ultrasound reside in confirming the clinician what is revealed by physical examination and in describing more strictly which organ is prolapsed. Therefore, the reconstructive surgeon can better comprehend the stages and disease progress to better evaluate the success of POP treatment.

Keywords: pelvic organ prolapsed, ultrasound, anatomical defects, reconstructive surgeon

Role of ultrasound in the early detection of *placenta praevia*

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Pregnancies complicated with *placenta praevia* are a constant challenge for obstetricians. The incidence of pregnancies complicated with *placenta praevia* is four per thousand, but before twenty weeks of gestation the incidence is much higher, going up to two per cent. Also, *placenta praevia* is commonly associated with abnormally inserted placenta. The diagnosis of *placenta praevia* is based on ultrasound imaging, through transabdominal, transvaginal or translabial evaluation. The distance between the internal cervical os and the edge of the placenta is more accurately determined by transvaginal ultrasound. Transabdominal ultrasonography is the standard method of assessing the placental bed. The evaluation should be carried out with an empty bladder, as a superdistended bladder compresses the anterior uterine segment, but it should be performed 15-20 minutes after the micturition. When evaluating a full-term pregnancy patient for the first time, it is difficult to determine the possible existence of a *placenta praevia*, especially if the fetal skull is low, because the posterior shadow cone masks the placental bed. Doppler evaluation is used in situations where there is a suspicion of an abnormal placenta (*placenta accreta*, *increta*, *percreta*). The type of *placenta praevia* is also established by the ultrasound evaluation. The central *placenta praevia* completely covers the internal cervical os, the partially central one covers a part of the internal cervical os, the marginal one reaches the edge of the internal cerival os, and in the lateral *placenta praevia*, the edge is located at less than 25 mm from the internal cervical os. During pregnancy, patients should be reevaluated to determine the risk of antepartum bleeding, predictive features for bleeding being: central *placenta praevia*, placental bed thickness greater than 10 mm, cervical length less than 30 mm, shortening of the cervix by more than 6 mm in the second or third trimester.

Keywords: *placenta praevia*, ultrasound, pregnancy

Management of blood sugar levels in gestational diabetes mellitus as an indicator of maternal and fetal outcomes

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Introduction. Gestational diabetes mellitus (GDM) has emerged as an important public health issue worldwide, our country being no exception. An increased prevalence has been noted since the last decade due to impaired nutritional status in women of childbearing age, rising in obesity and changing in diagnostic criteria. The addressed issue was to evaluate the direct relation between blood sugar levels in patients diagnosed with GDM and adverse maternal and perinatal outcomes. **Materials and method.** A prospective cohort study was conducted from December 2019 to August 2021 in our hospital. A total of 464 pregnant women were screened for the risk of developing gestational diabetes at 12 weeks of gestation using the Fetal Medicine Foundation calculator. Out of those, 95 were found to be high risk and were screened at 24 weeks of gestation by impaired oral glucose test, resulting in 68 cases of gestational diabetes mellitus. All types of maternal and perinatal outcomes were followed-up in both GDM and non-GDM categories after blood sugar levels were monitored. **Results.** It was observed that, for all kinds of maternal and fetal outcomes, the differences between GDM cases and non-GDM cases were highly significant ($p<0.0001$, relative risk >1 in every case). Moreover, perinatal mortality also increased significantly from 4.3% to 8.2% when blood sugar levels increased from 170 mg/dl and above. Perinatal and maternal outcomes in GDM cases were also significantly related to the control of blood sugar levels ($p<0.0001$). **Conclusions.** Blood sugar levels can be an indicator of maternal and perinatal morbidity and mortality in GDM cases, providing unified diagnostic criteria and uniform screening in all fetal medicine centers. Further research should be directed towards developing better diagnostic tools, allowing for monitoring and therapeutic intervention earlier in pregnancy, lowering the rate of complications due to poor glycemic control.

Keywords: blood sugar, diabetes mellitus, perinatal

Prenatal diagnosis of body stalk anomaly in the first trimester by ultrasound

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Introduction. Anterior wall defects are usually diagnosed by ultrasound in the late first. There are three main types: omphalocele, gastroschisis and body stalk-like anomaly. Body stalk anomaly is the most severe and rare of the three types. The incidence is estimated between 1:14 000 to 1:42 000 pregnancies. The etiology is unknown, but several theories include an abnormality in the germinal disk, vascular disruption of the embryo, direct mechanical pressure, and amniotic bands or defects in the genes involved in embryogenesis. **Case report.** We present the case of a 28-year-old patient, primigravida, with a personal history of polycystic ovary syndrome, autoimmune thyroiditis and kidney stones, who came to our clinic for the first-trimester combined test ultrasound. The patient underwent ureteroscopy and laser lithotripsy for kidney stones at six weeks of pregnancy. The ultrasound examination revealed an 11 weeks and 5 days fetus with a significant defect in the anterior abdominal wall and thorax with evisceration of the abdominal organs and ectopia cordis, associated with an amniotic band around the calvaria and viscerocranium and club foot. The ultrasound findings suggested body stalk anomaly. Due to severe malformations, the pregnancy prognosis was unfavorable, and the patient decided for the medical termination of pregnancy. We requested genetic counseling for a recommendation regarding the possible genetic testing. The patient aborted a possible male fetus with a weight of 100 g. The fetus and the placenta were sent for genetic and histopathological tests. **Results and conclusions.** Body stalk-like anomaly defects are incompatible with life. The early diagnosis is important to differentiate it from an omphalocele or gastroschisis with a better prognosis and for counseling the future parents about the prognosis of the pregnancy. In this case, we believe that laser lithotripsy may have caused a small rupture in the amniotic membranes, causing amniotic bands and body stalk anomaly. Although it is considered to be safe and efficacious during pregnancy, the studies made on the safety of laser lithotripsy during pregnancy do not involve early pregnancies.

Keywords: body stalk anomaly, laser lithotripsy

Jeune syndrome – case report

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Introduction. Jeune syndrome is an uncommon recessive anomaly characterized by a narrow thorax, short ribs and bones, polydactyly, pelvic abnormalities and associated renal and hepatic anomalies. The incidence of the anomaly is 1 to each 100,000-130,000 births. **Case report.** We present a case of a patient, GII, with 18 weeks and 2 days of gestation, with one therapeutic abortion in her history for bilateral renal agenesis. Ultrasound examination revealed: fetus with dolichocephaly, narrow thorax with the thoracic/abdominal circumference ratio 0.24, horseshoe macropolycystic kidneys, micromelia, anhydramnios and diminished fetal movements. **Results and discussion.** As a differentiated diagnosis, we have to consider: achondroplasia, Ellis-van Creveld syndrome, thanatophoric dysplasia, short-rib polydactyly syndromes. Jeune syndrome doesn't have a lethal prognosis, but in 60-80% of cases the prognosis is poor and often leads to the early death of infant. The children born with this anomaly develop respiratory distress from birth or in the first years of their lives, caused by the recurrent respiratory infections, mechanical ventilation being necessary, in severe cases a surgical thoracic reconstruction being performed. In our case, the presence of renal malformations, anhydramnios and the evolution towards pulmonary hypoplasia, the patient can opt for the termination of pregnancy and is recommended genetic testing with sequence analysis of the entire coding region, because the risk for this disorder in a future pregnancy is 25%. Mutations in the *DYNC2H1* gene is the most common cause, but this anomaly can also be caused by mutations of other genes such as: *WDR34*, *IFT80*, *IFT81*, *IFT140*, *IFT172*, *TTC21B*, *WDR19*, *WDR60*, *CSPP1* and *CEP120*. **Conclusions.** This anomaly can be echographically detected after 17 weeks of gestation and narrow thorax associated with renal anomaly should alert the examiner to look for other signs of this condition.

Keywords: Jeune syndrome, genetic testing, narrow thorax

Early diagnosis of a supernumerary hemivertebra

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The hemivertebra is originated in the lack of development of one-half of the vertebral body and represents a frequent congenital scoliosis cause. This very rare condition can present as an isolated defect or as part of a syndrome such as the split notochord syndrome, implying vertebral deformities, from a bifid vertebra to fused vertebrae or even hemivertebrae. We communicate a case of supernumerary lateral hemivertebra early diagnosed at 12 weeks of gestation as well as and the ultrasonography findings that contributed to the prompt and conclusive diagnosis; we also describe the pregnancy monitoring, and the infant follow-up during the first four years. The presented case aims at highlighting the vital importance of the early fetal spine assessment followed by various conditions diagnosis, including hemivertebrae, taking into consideration the substantial association with other morphologic anomalies, the most frequently involved being those of the skeletal, cardiovascular, gastrointestinal, urinary and central nervous system. In addition, positive diagnosis leads to counseling the future parents regarding the implied risks, as well as further monitoring of the infant. Our aim is also to include these congenital conditions varieties in high-risk pregnancy due to the common associations with intrauterine growth restriction, preterm delivery, high caesarean delivery rates as well as higher morbidity rates.

Keywords: hemivertebrae, first trimester scan, fetal spine

The diagnostic challenge of a complex fetal cardiac malformation

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Cardiac as well as cardiovascular malformations represent the most crucial findings during early ultrasonographic screening as their presence could change the course of a pregnancy, their presence also being of high interest concerning definition and epidemiology. Nowadays, ultrasound examination has an incredible performance, but still there are rare pathological variants which could be variably interpreted even by the experimented ultrasonography specialist, the final diagnosis being made only by a pathologist specialized in anatomical dissection. In this regard, we present the limitations encountered in the management and diagnosis process in a 20-week-old fetus, during the second-trimester screening, from a supposedly low-risk pregnancy, with complex cardiovascular anomalies consisting of an arteriovenous malformation, ductal coarctation of the aorta, ventricular septal defect, aneurysm of a brachiocephalic vein and the entire neck and upper mediastinum venous system dilation.

Keywords: cardiac malformation, vascular malformation, ultrasound limitations, rare pathology

Ultrasound monitoring of pregnancies complicated with diabetes as an integral part of the National Clinical Guideline for Diabetes and Pregnancy

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Introduction. The need for good clinical practice guidelines has increased over time in every medical specialty, being the same for obstetrics and gynecology. We present a vital part in pregnancy monitoring regarding pregnancies complicated with diabetes that will be included in the Diabetes and Pregnancy National Clinical Guideline, respectively ultrasound monitoring. Our aim is to encourage obstetricians to be guided in their practice by the new clinical guideline, especially the monitoring of pregnancy patients with diabetes, as we highlight the most important aspects regarding ultrasonographic evaluation in order to choose the ideal timing for delivery and also to obtain the optimum fetal outcome: normal fetal growth avoiding macrosomia or fetal growth restriction, polyhydramnios or oligohydramnios, and also excluding the morphological defects that are usually associated with maternal hyperglycemia.

Keywords: pregnancy and diabetes, guideline, good clinical practice, macrosomia

Antenatal diagnosis and postnatal treatment of fetal ovarian cyst – a case report

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Introduction. Fetal ovarian cyst is the most common abdominal cystic tumor diagnosed during the intrauterine life. The causes of the appearance are still incompletely elucidated, the ovarian hyperstimulation caused by the maternal hormones and placental origin hormones being the most accepted hypothesis. Their evolution is unpredictable, from spontaneous regression to complications that can lead to the loss of ovarian tissue. Their treatment is applied according to a series of criteria such as: the type of cyst, their size and the presence of symptoms or complications. **Materials and method.** In the present paper, we present a case of 7.6 cm fetal ovarian cyst diagnosed during a routine ultrasound scan at the beginning of the third trimester of pregnancy. According to the Nussbaum criteria, the aspect of the cyst was simple, an aspect preserved throughout the follow-up period, but its size increased constantly until the moment of birth. No complications were detected during the follow-up period. Postpartum, considering its size and the risk of complications, ovarian cystectomy was performed. **Conclusions.** Ultrasound assessment of a fetal ovarian cyst allows the classification into simple or complex types of ovarian cyst, hence the optimal treatment.

Keywords: fetal ovarian cyst, cystectomy, antenatal ultrasound

Enlarged NT and cardiac scan at 12-16 weeks

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Introduction. The main objective is to understand the link between nuchal translucency and cardiac heart defects. Also, it is essential to appreciate the benefits and the limitation of early fetal echo, and to familiarize with some examples of early cardiac heart defects. **Materials and method.** First-trimester transabdominal fetal echocardiography is important to identify normal cardiac structures: situs and cardiac position, the four-chamber view with two separate atrioventricular valves and two similar-sized ventricles, and the visualization of two separate great vessels of similar size with a normal spiral spatial relation. The higher the nuchal translucency thickness, the higher the risk of cardiac defects. **Results.** Today, the interest in the fetal heart is growing, and it is important to do the first-trimester screening, and the equipment, technology and digital processing improve the early diagnosis. In time, what have not changed are: the site of the fetal heart in early pregnancy, the need for accuracy when making diagnosis and the need to counsel the woman, and recommendation is to examine the cord rather at 13-14 weeks than at 11 weeks. **Conclusions.** It is mandatory to assess the heart in a systematic way, and the follow-up scan at 20-21 weeks is essential. If we find some abnormality, we must provide appropriate counseling.

Keywords: nuchal translucency, cardiac defects, counseling

Prenatal ultrasound diagnosis of fetal cardiac rhabdomyoma: a case report

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Rhabdomyomas represent the most frequently found type of cardiac tumor in the prenatal period. They are usually diagnosed during the first year of life, after the obstruction of a valve orifice or a cardiac chamber, but they can be detected by echocardiography as early as the second trimester. Rhabdomyomas are hamartomatous proliferative lesions that are associated with tuberous sclerosis in 50-80% of cases. The aim of this poster is to describe the case of a 24-year-old primigravida patient with tuberous sclerosis and a 23-week fetus presenting three intracardiac tumors. The early prenatal diagnosis of cardiac rhabdomyoma is important for the perinatal follow-up and a multidisciplinary approach to the treatment. Moreover, since cardiac rhabdomyomas may be the earliest manifestation of tuberous sclerosis, the infant should be evaluated accordingly.

Keywords: rhabdomyoma, tuberous sclerosis, prenatal diagnosis

Three-dimensional HyCoSy used in the evaluation of the uterine cavity

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Introduction. Hysterosalpingo contrast sonography (HyCoSy) is a frequently used investigation in tubal permeability testing. The endovaginal ultrasound with three-dimensional (3D) reconstruction is an objective and accurate investigation of the uterine cavity, which overcomes the limitations of 2D images in the sagittal plane, by adding the coronal section. It is considered to have 100% specificity in the diagnosis of congenital uterine malformations. The two methods can be used in the investigation protocol of patients with fertility pathology, but their overlap in a single investigation is a relatively recent and little exploited notion for the diagnosis of intracavitary pathology. **Objectives.** The objective of this paper is to establish the diagnostic benefits of 3D HyCoSy for evaluating the uterine cavity. **Methodology.** Three-dimensional HyCoSy were performed on patients with symptoms suggesting intracavitary pathology such as endometrial polyps, uterine synechiae or submucous and pedicle myomas and in patients with congenital uterine malformations. The contrast substances normally used for HyCoSy were found obstruct an optimal visualisation of the endometrial surface, thus the saline solution was used as a substitute. The three-dimensional reconstruction was performed both before and after the instillation of the contrast substance. **Results.** In the evaluation of the uterine cavity, the 3D HyCoSy method outperforms both the endovaginal ultrasound with 3D reconstruction and the 2D HyCoSy. **Discussion and conclusions.** In the case of patients with fertility pathologies, HyCoSy is typically performed to test tubal permeability; however, following the investigation with the addition of 3D reconstruction, it was found that additional benefits were detectable. The shortened diagnosis period, the substantially lower costs for the patient and the reduced risks are some of the benefits of the three-dimensional HyCoSy method.

Keywords: HyCoSy, 3D ultrasound, uterine cavity

Congenital club foot

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Introduction. Congenital club foot is a relatively rare pathology with an incidence in the literature between 1/1000 and 2/1000 in the number of live births for the Caucasian population. There are racial variations, being more common in Polynesia and less common in China. It is more common in male newborns and half of the cases are bilateral. It may occur as a single, isolated malformation or may occur in complex malformative syndromes associated with other skeletal or joint malformations. There are three etiopathogenetic hypotheses: the compressive, external one most frequently associated with oligo-amnios, the theory of neurogenic pathogenesis and the pathogenesis of bone system development. The three theories do not contradict and they complement each other. The treatment of congenital club foot is the Ponseti protocol, considered the gold standard for treating idiopathic disease. This method involves weekly manipulations and positioning, followed by a tenotomy of the Achilles tendon. The correction is maintained with orthoses for abduction of the foot until the child turns 4 years old. Sometimes, additional surgery is needed due to recurrence. Most congenital crooked legs require limited surgery, such as Achilles tendon extension or anterior tibial tendon transposition. **Materials, method and results.** A small series of cases from the pathology of the Sibiu Obstetrics and Gynecology Clinic are presented, with several cases of congenital club foot, most of them unilateral, with the extended presentation of a congenital crooked leg case in an advanced maternal age primiparous woman with pregnancy obtained by *in vitro* fertilization with oocyte donation, including the postoperative results. **Conclusions.** Congenital crooked foot is a relatively rare condition with a good prognosis when it is a singular pathology, not associated with complex malformative pathology.

Keywords: congenital club foot

Ultrasound aspects of the ectopic pregnancy in different locations

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Introduction/objectives. Ectopic pregnancy is a relatively frequent pathology, with an incidence between 1% and 2% of all pregnancies. There are significant differences in the incidence between different countries, the difficulty of the assessment resulting from data reporting. The incidence is continuously increasing, and this is due to the increase in the incidence of sexually transmitted diseases and smoking at the reproductive age, the accessibility of the ART procedures and by improving the means of diagnosis and treatment. The main risk factors are tubal pathology (PID with *Chlamydia* infection, endometriosis), failure of contraception, age over 35 years old, history of ectopic pregnancy, history of spontaneous or elective abortion, smoking etc. **Materials, method and results.** The paper presents the experience of the authors in the imaging diagnosis of ectopic pregnancy in different locations. Imaging documentation of ectopic pregnancies diagnosed and treated in the Obstetrics and Gynecology Clinic of the Sibiu during 2020-2022 were analyzed. Ectopic pregnancies had various locations, mostly tubal, abdominal pregnancies, but pregnancies located in the uterine horn and cervical locations were also present. The diagnosis of ectopic pregnancy has been improved significantly by increasing the performance of ultrasonography devices. The diagnosis consists of the uterine cavity without a pregnancy sac documented, identifying the pregnancy in another location and the correlation with sequential dosing of the beta-HCG. Rarely, the diagnosis is made at the first evaluation. Early diagnosis is important for the conservative treatment of the pathology. In some cases, the diagnosis was completed with magnetic resonance imaging and computed tomography, images which are also being presented. **Conclusions.** Ectopic pregnancy is a severe pathological condition that can be life threatening. The diagnosis is difficult and requires the correlation of imaging aspects with hormonal dosages observed in dynamics. The reproductive prognosis is often affected, especially if the pathology is resolved surgically. The imaging aspect is not always obvious and it involves serial examinations, the use of high-resolution imaging diagnostic tools and often an interdisciplinary consultation between a gynecologist-obstetrician and a radiologist.

Keywords: ectopic pregnancy, different location, ultrasound imaging

Cleft lip and palate diagnosis, management and counseling

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Introduction. Cleft lip and palate (CLP) represent the most frequent congenital craniofacial malformation discovered during prenatal ultrasound examination. Potential problems associated with cleft lip/palate vary according to severity. It may affect the child's airway functioning, feeding, hearing and speech, as well as psychological health. **Materials and method.** The current guidelines recommend the evaluation of the fetal face at 11 to 13+6 gestational weeks, optionally including the integrity of mouth and lips as well. We enrolled patients who presented in our clinic between 11 and 13 weeks of gestation for the last five years. This was a prospective study and allowed storing images of sagittal, oblique and coronal views of the fetal face. The newborn examination was the gold standard method for assessing accuracy. **Results.** In this study, 26 cases of lip or/and palate cleft were found, amongst them two cases of median cleft, having normal anterior bony palate and lip. Eighteen cases were picked-up at the detailed first-trimester anomaly scan (including unilateral and bilateral cleft). Eleven pregnancies were terminated subsequently. Six were diagnosed in the second trimester. Both median clefts were missed during the prenatal period, and they were diagnosed postnatally. **Discussion.** Despite the advancement of reconstructive techniques, the early diagnosis of CLP raises risk of on parental request pregnancy termination.

Keywords: cleft lip, prenatal diagnosis, management

Diagnostic challenges in pericardial effusion

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Depending on the clinical context, pericardial diseases can represent diagnostic challenges in etiology, pathophysiology and imaging, which are sometimes difficult to interpret. This paper aims to present the management of a pregnancy diagnosed antepartum with fetal pericardial effusion and the evolution of the newborn. The newborn child was born prematurely at 26 weeks of gestation, with a severe general condition that required sustained resuscitation measures, and was subsequently mechanically ventilated. In evolution at 12 hours, the patient presented generalized convulsions that were difficult to cease under treatment. Gradually generalized edema and fluid effusions appeared. In particular, the cardiac ultrasound revealed an impressive pericardial fluid collection without apparent impairment of cardiac function. Its etiopathogenesis is determined considering all possible causes and the extended differential diagnosis. Despite the medical and supportive treatment on all levels, the general condition progressively deteriorated until the declaration of death.

Keywords: pregnancy, prematurity, pericardial effusion, ultrasound

Intraabdominal fetal echogenic masses

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Introduction. Congenital tumors are very rare, with a reported incidence between 2 and 14 infants per 100,000 live births, although there are likely many unreported cases as well. Many are associated with no additional risk for the fetus or neonate. However, since abdominal cysts may be derived from different reproductive, urinary and digestive systems, it becomes more difficult to accurately determine the nature of cysts antenatally via ultrasound and predict the postnatal outcome. **Materials and method.** We present several cases of abdominal masses diagnosed by ultrasound in the second and third trimesters of pregnancy in order to emphasize the importance of proper understanding of fetal anatomy and morphological characteristic of such fetal tumors on ultrasound and the advantage of follow-up in improving clinical expertise. **Results.** The first case is an enteric duplication cyst that was diagnosed by ultrasound in the second trimester of pregnancy as an inechogenic mass that was localized in the right hemiabdomen measuring 4/5 centimeters; at the follow-up, it maintained the ultrasound characteristics and it increased its size at 6/7 cm at birth. Immediately postpartum the fetus was operated and the prognosis was favorable. The second case was a female fetus diagnosed prenatally at 34 weeks of gestation with a hypoechogenic pelvic mass measuring 6 cm localized posteriorly to the urinary bladder with low color Doppler score, suggesting an ovarian cyst. The fetus was delivered at 36.2 weeks of gestation due to maternal preeclampsia and she was operated at seven days after birth, confirming an ovarian mass which was excised. The third case was diagnosed in the second trimester with unilateral pelvic mass suggestive for polycystic kidney. The ante- and post-partum evolutions were favorable. The last case raised the suspicion of a duodenal stenosis in the third semester of pregnancy due to "double bouble" like aspect and mild polyhydramnios. After birth, X-ray revealed a large stomach but with passage of the content. After the pediatric consultation, the neonate was diagnosed with incomplete duodenal stenosis and was followed-up periodically. **Conclusions.** These case reports highlight the importance of continuum of care through pregnancy and neonatal period. Expertise can be improved by making a dedicated attempt towards clinical-sonographic-pathological correlation.

Keywords: intraabdominal fetal, congenital tumors, fetus

Atypical case of ruptured tubal pregnancy

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Introduction. Ectopic pregnancy is a pregnancy that develops outside the uterine cavity, most often located in the ampullary region of the Fallopian tube. Given the improved methods of diagnosis, ectopic pregnancies can be diagnosed before rupture. Ruptured tubal pregnancy is a gynecological emergency that in the absence of rapid diagnosis can be fatal. **Materials and method.** The 33-year-old patient presented with dyspnea, chest pain and metrorrhagia in small quantities started in the last six hours. The clinical examination revealed a pelvic mass 3 cm large located in the right annexal area. The ultrasonographical examination revealed a 6-cm anechoic area in the Douglas cul-de-sac and another one of 2 cm in the interhepatorenal space. Surgery was indicated and right partial salpingectomy was performed, with the drainage and lavage of the peritoneal cavity. **Results and conclusions.** The peculiarity of the case is represented by the atypical symptoms for a ruptured tubal pregnancy.

Keywords: ruptured tubal pregnancy

Cystic degeneration of an intramural leiomyoma in a patient with polycystic kidney disease – case report

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Introduction. Polycystic kidney disease is frequently associated with extrarenal manifestations such as hepatic and pancreatic cysts or even cerebral aneurysms. The presence of uterine cysts as an extrarenal manifestation is an extremely rare condition, reported in only three cases in the literature as degenerated fibromyomas in the form of massive cysts. **Materials and method.** We present a case, from the experience of our clinic, of a 42-year-old patient diagnosed with polycystic kidney disease 23 years ago, with two deliveries by caesarean section in 2006 and 2011, ultrasonographically detected with a cystic mass in the anterior uterine wall about 90 mm in diameter. The MRI examination revealed numerous renal and hepatic cysts and a multiloculated septate interstitial formation with non-homogenous content, 94/82/58 mm in size, compatible with degenerated fibromyoma, in the anterior uterine wall. Although we do not know if this patient had a preexisting leiomyoma, it is likely that genetic mutations play a role in the cystic transformation of the fibroid. **Conclusions.** Although only three such cases are described in the literature, we would like this case to be a step forward in establishing a link between polycystic kidney disease and uterine cysts as an extrarenal manifestation.

Keywords: polycystic kidney disease, uterine cysts, degenerated fibromyoma

Fetal supraventricular tachycardia – approach and management

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Introduction. Fetal arrhythmias are primarily benign and transient. Fetal supraventricular tachycardia is an uncommon arrhythmia. It is often associated with adverse perinatal outcomes if untreated. After exclusion of maternal and fetal heart diseases that can result in secondary fetal tachycardia, supraventricular tachycardia is the most common cause of primary sustained fetal tachyarrhythmia. The diagnosis of fetal tachycardia can be challenging as a traditional electrocardiogram cannot be performed on a fetus. If it is not treated, fetal tachycardia can lead to hydrops fetalis, which increases the risk of fetal demise, perinatal morbidities and premature delivery. The purpose of this paper is to present the medical approach in a case of fetal supraventricular tachycardia and the evolution of the case. **Case report.** We examined a secundiparous 29-year-old patient in the third trimester of pregnancy. We performed an ultrasound, and we observed an increased fetal rhythm. The analysis of fetal heart rhythm was based on ultrasound (M-mode and Doppler echocardiography). The patient was admitted to the hospital until birth. During hospitalization, we performed a daily ultrasound and treated the arrhythmia with digoxin, sotalol and flecainide until we managed to maintain a regular fetal heart rate. The fetal heart rate remained stable until term, and a healthy baby was born. **Discussion.** In fetal supraventricular arrhythmias, pregnant women may need significant doses of antiarrhythmics to achieve adequate transplacental bioavailability. Sotalol or flecainide is administered orally, and if no sinus rhythm is obtained nor a reduced ventricular rhythm occurs, it can be administered with digoxin. In the case of hydrops, fetal digoxin intravenously or flecainide orally is being studied. The treatment controlled the heart rate, and the conversion to sinus rhythm was achieved. **Conclusions.** Managing fetal supraventricular tachycardia is a condition that sometimes represents a real challenge. Establishing the diagnosis and administering an appropriate treatment contributes to a favorable result. The interdisciplinary approach is the key to success.

Keywords: pregnancy, ultrasound, fetal supraventricular tachycardia, digoxin

Oncological pathology associated pregnancy – particular aspects

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Introduction. Neoplasms during pregnancy are rare because almost all women diagnosed with this type of pathology decide to postpone the pregnancy until cured, one of the most common types of cancer during pregnancy being malignant melanoma. However, the impact of hormonal changes during pregnancy on cancer is controversial – the incidence of pregnancy associated with malignant pathology is expected to increase as more women delay reproduction. **Materials and method.** A retrospective study was conducted during 2019-2022 in the Obstetrics-Gynecology Clinics of the "Pius Brînzeu" Emergency County Clinical Hospital from Timișoara. The inclusion criteria were: pregnant patients and positive biopsy for neoplasm during pregnancy. The most appropriate treatment was selected for all the cases admitted to our clinic. **Results.** Pregnancy associated with malignant pathology was diagnosed in three cases (malignant melanoma, endometrial adenocarcinoma and cervical carcinoma). In all our three cases, the oncological and gynecological decision was to postpone the oncological treatment until birth because of the patients' consent to continue the pregnancy. During the pregnancy, the women were under continuous oncological and gynecological monitoring. Each patient gave birth to a healthy baby. **Discussion.** The management of pregnant women with oncological pathology requires an individualized approach that must consider the staging of the disease, the need for treatment, the possible adverse effects on the mother and fetus and, last but not least, the request of the patient. Both surgery and chemotherapy are generally safe in the third trimester of pregnancy, whereas radiotherapy is relatively contraindicated. Optimal treatment involves balancing the mother's benefit while minimizing harm to the fetus. **Conclusions.** The association of an oncological pathology in pregnant women is a challenge. However, the multidisciplinary approach to these cases, a good collaboration between specialists, and the patient's compliance can increase the maternal survival rate and decrease the maternal-fetal complications.

Keywords: pregnancy, pregnancy-associated cancer, melanoma, endometrial adenocarcinoma, cervical carcinoma

Placenta accreta spectrum disorders – the relationship between prenatal imaging & postpartum clinical grading and histology findings in a case series

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Uterine scar associated complications constitute a diagnosis and management challenge. *Placenta accreta* spectrum disorders must be suspected prenatally in all patients with history of prior caesarean delivery and a low anterior placenta. Ultrasound and magnetic resonance imaging describe the topography and depth of placental invasion and allow proper patient counseling and efficient obstetric management. PAS patients require recurrent admissions during episodes of vaginal bleeding, have long-duration hospital stays, iatrogenic preterm deliveries, elaborate surgeries with increased blood loss and protracted recoveries. Multidisciplinary teams involving the obstetrician, the radiologist, the neonatologist and the perinatal pathologist should be involved in case management. The correlation between antenatal diagnosis and postpartum histology grading is crucial for tailoring the approach in future cases.

Keywords: placenta disorders, prenatal imaging, postpartum

Ultrasonographic findings for the early diagnosis of abnormal placentation

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Early diagnosis of abnormal placentation significantly influences the management of the antepartum period as well as the birth protocol. Abnormal placentas – such as *placenta accreta* – represent rare pathologies. Moreover, 75% of *placenta percreta* cases are associated with *placenta praevia*. A history of multiple caesarean sections is the best-known risk factor, but it has been shown that other features, such as advanced maternal age, Asherman's syndrome or curettage, are associated with placental defects. Massive bleeding, which may require emergency hysterectomy or intensive care for both mother and newborn, are complications that can be avoided or at least anticipated in case of the early diagnosis of placental defects. These are cases that mandate utmost caution and thorough investigations in favor of prolonging the pregnancy. In this respect, ultrasound, magnetic resonance imaging (MRI), cystoscopy and blood sampling detecting circulating trophoblasts should be in favor of the obstetrician with clear criteria, following which a diagnosis of vicious placentation can be made as early as possible in pregnancy. Ultrasound has a sensitivity of 89.5%, a positive predictive value of 68%, and a negative predictive value of 98% for the diagnosis of *placenta accreta*, being considered the most accessible and most frequently used diagnostic method for abnormal placentation.

Keywords: *placenta percreta*, *placenta accreta*, *placenta praevia*, early diagnosis

Statistical comparison of regression formulas for hypertensive pregnancy complications

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Introduction. Hypertensive complications of pregnancy can often lead to serious, even life-threatening situations for the mother and fetus. First trimester uterine artery Doppler can be a predictive tool for such complications. **Materials and method.** We have examined 305 pregnant patients from 11 weeks to 13 weeks+6 days gestational age by ultrasound in our hospital, both as in and outpatients, and we have assessed the evolution of their pregnancy. We have calculated the values of AUC for hypertensive pregnancy complications for different combinations of demographic and/or ultrasound factors without and with multiples of median (MoM) of pregnancy-associated plasma protein-A (PAPP-A) and we have compared the results of the two studies. **Results.** There were 21 patients with hypertensive pregnancy complications (6.89%), and 284 with normal outcome (93.11%). Three patients had gestational hypertension or GH (0.98%), and 18 had preeclampsia or PE (5.90%, with 12 cases of mild PE or 3.95%, and six cases of severe PE, or 1.97%). The study including PAPP-A offered the majority of higher AUC values for GH (61.11%), severe PE (88.89%), all PE (75%) and all hypertensive complications (52.78%) and the higher mean AUC value for mild, severe and all PE, while the ultrasound study offered the majority for mild PE (58.33%) and the higher mean AUC value for GH and all hypertensive complication. The only statistically significant difference was that between the mean AUC values of the two studies for severe PE (p=0.0004). **Conclusions.** The combination of all available ultrasound and demographic factors offers the highest AUC values for all hypertensive pregnancy complications in our study.

Keywords: screening, pregnancy, uterine artery, preeclampsia, area under curve

Comparison of demographic, ultrasound and PAPP-A regression formulas for hypertensive pregnancy complications

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Introduction. Hypertensive complications of pregnancy can often lead to serious, even life-threatening situations for the mother and fetus. First-trimester uterine artery Doppler can be a predictive tool for such complications. **Materials and method.** We have examined 305 pregnant patients, from 11 weeks to 13 weeks + 6 days of gestational age, by ultrasound, in our hospital – both as inpatients and outpatients – and we have assessed the evolution of their pregnancy. We have calculated the values of AUC for hypertensive pregnancy complications for different combinations of demographic and/or ultrasound factors with multiples of median (MoM) of pregnancy-associated plasma protein-A (PAPP-A). **Results.** There were 21 patients with hypertensive pregnancy complications (6.89%) and 284 with normal outcome (93.11%). Three patients had gestational hypertension (GH; 0.98%) and 18 had preeclampsia (PE; 5.90%, with 12 cases of mild PE, or 3.95%, and six cases of severe PE, or 1.97%). The AUC values ranged from 0.506 to 1 for GH, from 0.554 to 0.942 for mild PE, from 0.556. to 1 for severe PE, from 0.535 to 0.928 for all PE, and from 0.526 to 0.888 for all hypertensive complications. The range of the mean values of each separate combination was 0.582-0.952. Severe PE had the highest mean of AUC values, with 0.796. The total mean value was 0.715. **Conclusions.** The combination of all available ultrasound and demographic factors offers the highest AUC values for all hypertensive pregnancy complications in our study.

Keywords: screening, pregnancy, uterine artery, preeclampsia, area under curve

Comparison of demographic and ultrasound regression formulas for hypertensive pregnancy complications

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Keywords: screening, pregnancy, uterine artery, preeclampsia, area under curve

The relevance of ultrasound screening by cervical length measurements for the prediction of premature birth

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Premature birth represents a major obstetrical challenge due to high rates of neonatal morbidity and mortality. The prevalence of premature birth did not change in the last few decades. Transvaginal ultrasound (TVU) measurement of the cervical length was proposed as a method of screening for pregnant women in order to evaluate their risk for premature birth. The inverse variation between the cervical length and the risk of preterm birth has already been proven. But a short cervix doesn't necessarily mean cervical insufficiency because only a small fraction of pregnant women with short cervix (less than 2.5 cm evaluated by ultrasound) will experience preterm birth. Maternal age, premature birth antecedents and previous cervical interventions constitute factors to be taken into consideration as part of a screening algorithm. Antecedents of premature birth is the most significant known risk factor, but only 10-15% of premature births repeat. More than half of premature births occur in women without a history of premature birth. The screening of cervical length by TVU is less effective by itself, but the negative impact of premature birth is so strong that any screening able to reduce this risk is relevant and should be taken into consideration.

Keywords: ultrasound screening, premature birth

Our experience in late fetal growth restriction

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Introduction. Late-onset fetal growth restriction (L-FGR) is associated with good pregnancy outcome. Our objective was to determine outcomes in patients with L-FGR without fetal or genetic anomalies and to identify additional risk factors for poor outcomes in these patients. **Methodology.** The prospective cohort study included singletons between 32 and 41 weeks of gestation, FGR being defined as sonographic estimated fetal weight under the 10th percentile (<10 p). We excluded cases with fetal structural or chromosomal abnormalities confirmed before the L-FGR diagnosis. Data were collected and analyzed, using a control group. **Results.** Thirty-three patients with L-FGR were included. Two more fetuses were found to have structural or chromosomal abnormalities. In this cohort, we had no cases of intrauterine fetal demise and there were higher rates of preterm birth <37 weeks (25%), birth weight <5 p (50%), gestational hypertension (15%), and diabetes mellitus type 1 (5%) compared to the control group. Earlier gestational age at diagnosis and abnormal umbilical artery Doppler indices at the initial assessment were also associated with poorer outcome. **Conclusions.** Isolated L-FGR have good pregnancy outcomes. We confirmed that earlier gestational age at diagnosis, preterm birth (both spontaneous and iatrogenic), low birth weight and pregnancy-induced hypertension are the most important predictors for poor pregnancy outcome.

Keywords: late fetal growth restriction, ultrasound, preterm birth

Caesarean scar ectopic pregnancy – a non-standardized approach still

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Introduction. Caesarean scar pregnancy (CSP) is an ever-increasing form of ectopic pregnancy. In most cases, successful term pregnancy is not possible and it has dangerous consequences. Timely recognition is paramount to provide rapid interventions and to reduce major complications. **Objective.** To review the management, success and complication rates of women who presented with CSP in our clinic. **Methodology.** In this retrospective five-year study, patients were identified through the hospital's services coding system and data were collected from medical files. Successful treatment was defined as no additional treatment needed, no visible mass on ultrasound (US) and serum β subunit of human chorionic gonadotropin level returning to normal within four weeks. **Results.** Thirteen cases were identified. In stable patients, we administered methotrexate (intramuscular, intrasaccular or both). Non-selective uterine arteries embolization, US-guided aspiration, surgical management and various associated interventions were used is selected cases. The highest success rate was obtained in the group managed by hysterectomy and the lowest success rate was noted in the curettage/aspiration group. **Conclusions.** Caesarean scar ectopic pregnancy may be managed with expectation, surgically (by means of laparoscopy and laparotomy) and medically. If surgical expertise in hysteroscopy is not available, medical management is feasible in early diagnosed cases. Yet, this strategy implied the longest hospital stay and highest expenses. The success rate is highest in the radically managed group.

Keywords: caesarean section, scar pregnancy, methotrexate

Our experience in obstructed hemivagina and ipsilateral renal agenesis (OHVIRA) syndrome

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Introduction. OHVIRA syndrome is a rare condition, first reported in 1925 and subsequently described in detail by Herlyn, Werner and Wunderlich. In most cases, a triad of anomalies is found: didelphys uterus, obstructed hemivagina (OHV), ipsilateral renal anomaly (IRA). **Materials and method.** We searched for studies published the last five years, in English language, on OHVIRA. We bring into light the differences and complications in these cases, confirming the extreme variability of the anatomical structures involved in the syndrome. We used for diagnosis and management – the clinical examination, two- and three-dimensional transvaginal ultrasound, magnetic resonance imaging, laparotomy and laparoscopy. **Results and conclusions.** Eleven cases have been managed over the past five years in our hospital. The most common signs and symptoms were dysmenorrhea, pelvic pain and reproduction failure. The diagnosis before the menarche was missed in most cases (10 out of 11), symptoms related to the accumulation of menstrual blood, purulent collections and/or reproductive issues being absent. All patients had undergone different surgical techniques. The complexity of the OHVIRA syndrome and the large spectrum of pattern evolution in pregnancy make prenatal counseling very difficult. In our case series, six pregnancies were obtained. Four of them evolved near term or at term uneventfully, having a good outcome.

Keywords: obstructive congenital uterine malformation, renal anomaly, OHVIRA syndrome

Antenatal diagnosis and postnatal evolution of kidney congenital abnormalities

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Introduction. The routine use of prenatal sonography allows not only the sequential visualization of kidney development, but in some cases also the recording of the evolution of kidney development abnormalities. The confirmed visualization of the kidneys in the prenatal period and the absence of other congenital anomalies do not exclude a diagnosis of acute or chronic kidney disease in the postnatal period. **Materials and method.** This is an analysis of cases detected antenatally in standard ultrasound examinations and their postnatal evolution. The spectrum of abnormalities includes dilatations of the renal pelvis, vanishing kidney, pelvic or thoracic ectopia, crossed renal ectopia, horseshoe kidney, renal duplication, congenital cystic kidney disease and posterior urethral valve. The postnatal evolution of cases varies from asymptomatic, chronic kidney disease, renal sepsis or incompatible with ectopic life. **Results and conclusions.** Neonatologists, pediatric nephrologists or urologists should be aware of the existence of antenatal renal abnormalities detected in order to intervene postnatal as early as possible and avoid unnecessary investigations and treatments.

Keywords: vanishing kidney, pelvic or thoracic ectopia, crossed renal ectopia, horseshoe kidney, renal duplication

Sonohysterosalpingoscopy – a new approach

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The affected tubal permeability represents up to a third of infertility cases, which occur at a gynecological office. Sonohisterosalpingoscopy involves real-time ultrasound visualization and imaging documentation of the uterine cavity and fallopian tubes and is a first-line method in examining tubal permeability by a gynecologist. Today we are witnessing the migration of the evaluation of the fallopian tubes from laparoscopic chromotubation or ionizing radiological hysterosalpingography to the examination of the tubal patency with sonographic contrast solutions. Undoubtedly, each method has its advantages and disadvantages, if we take into account the risk of the procedure, the speed of its execution and the information brought in the diagnostic plan, as well as the comfort for the patient. Last but not least, the cost and efficiency of the materials consumed, the personnel expenses involved in performing the procedure and the possibility of repeating it as needed are important. This paper presents the clinical experience of using different methods of ultrasonographic examination of the uterine cavity and fallopian tubes, bringing to the fore the use of hydrogen peroxide (H_2O_2) as a hyperechoic contrast and which can be available to any gynecological office equipped with ultrasound machine with 2D endovaginal probe.

Keywords: tubal permeability, hyperechoic contrast, hydrogen peroxide (H_2O_2)

Prognostic and therapeutic assessment of the ovarian tumors – possibilities and limits of the ultrasound diagnosis, between white box and black box

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Introduction/objective. Ovarian tumors represent a frequent pathology of the female genital system with a variable prognosis due to the uncharacteristic symptomatology for both benign and malignant forms. The diagnostic characterization becomes important because it changes the therapeutic management. **Methodology.** The paper aims to carry out a comparative study between the methods of white or black box statistical analysis regarding the transvaginal ultrasound examination with the aim of improving the prognostic differentiation of ovarian tumors. **Results.** The methods for quantifying the neoplasia risk are different depending on the parameters used. The IOTA (International Ovarian Tumor Analysis) group has developed a stratification strategy to assess the neoplasia risk based on clinical and imaging elements. It was achieved a classification method related with histologic prognosis using an open box statistical method. To increase the efficiency of the detection, especially for cases with uncertain histopathological diagnosis, borderline type, we also followed the way in which the evaluation of these conditions was detected with the help of the black box mathematical methods. By means of artificial intelligence, the automated analysis of ultrasound images and their subsequent prognosis interpretation are possible. **Discussion and conclusions.** The comparative evaluation of the two methods of analysis leads to the conclusion that the open box type analysis allows, through the intervention of experts, a rigorous selection of the parameters used and therefore an increase of the degree of diagnostic accuracy. We used this type of method for an efficient identification of ovarian tumors from a prognostic and therapeutic point of view. With the help of artificial intelligence methods, the diagnostic performance in this type of pathology can be increased.

Keywords: artificial intelligence, ovary

Ultrasound characterization of the benign ovarian tumors using the IOTA criteria (international ovary tumor analysis)

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Introduction/objective. Ovarian tumors represent a frequent pathology with a significant impact on both the fertility prognosis and the survival one. The differentiation between benign and malignant forms involves a staged approach depending on the degree of neoplasia risk. Imaging methods and especially transvaginal ultrasound allow the characterization of the two categories. In benign tumors, the obstetric prognosis can be modified and the approach can be performed in any hospital with a surgical gynecological department, while for the malignant category, the procedure is complex and can only be performed in the multidisciplinary tertiary centers. **Methodology.** Our study was carried out retrospectively and we followed a group of gynecological cases in which the presence of the simple criteria stated by IOTA for the ultrasound exploration of ovarian tumors were evaluated. The diagnostic evaluation was performed by transvaginal ultrasound and the "simple rules" proposed by IOTA were used for prognostic differentiation. **Results.** In the gynecological pathology group, 84 cases of ovarian cyst were detected by ultrasound. In addition to these, two cases with increased neoplasia risk were detected, which were sent for management in a multidisciplinary center of gynecological oncological surgery. **Discussion and conclusions.** The cases addressed in the present study were included in the low-risk group for neoplasia in which the surgical approach can be performed in a center equipped only with resources necessary for standard gynecological surgery.

Keywords: IOTA, ultrasound, ovary

Ultrasound evaluation of the endomyometrial junction in relationship with the clinical signs of adenomyosis

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Introduction/objective. Endometriosis is a condition with a complex etiology that influences the fertility and obstetric prognosis but also the quality of life. Its location inside the uterine wall is specific to adenomyosis, the clinical anatomical form that determines a specific symptomatology and presents with a characteristic ultrasound diagnosis. **Methodology.** Our study was carried out retrospectively on a group of 192 cases of patients in whom the presence of adenomyosis was suspected. In this group, the transvaginal ultrasound examination was performed with the aim of correlating the symptoms of the patients with ultrasound markers of adenomyosis. **Results.** Among the main clinical signs detected, we observed the presence of dysmenorrhea and menorrhagia as characteristic to adenomyosis. These were related with the progressive evolution of the endometrial invasion towards the interior of the myometrium. The lesions initially appear at the level of the endomyometrial junction where microcystic images can be detected, later the thickening of the posterior uterine wall occurs due to muscle hyperplasia, and finally echogenicities are observed inside the structure of the myometrium, markers of abnormal invasion. In addition to these lesions specific to adenomyosis, concurrent lesions of the presence of peritoneal or ovarian endometriosis can be detected, as well as other associated conditions, among which uterine fibromatosis is a sign of local or general hyperestrogenism. **Discussion and conclusions.** The presence of adenomyosis lesions at the level of the uterine wall, variably identified by transvaginal ultrasound, determines different clinical manifestations.

Keywords: ultrasound, adenomyosis, symptomatology

Evaluation of fetal cardiac geometry and contractility in gestational diabetes mellitus by speckle tracking technology

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Introduction. The most common cardiac effect of gestational diabetes mellitus (GD) in the fetus is hypertrophic cardiomyopathy, but recent studies suggest that subclinical cardiac dysfunction precedes this. Our study aimed to assess the effect of GD on fetal cardiac geometry and contractility by speckle tracking technology. **Methodology.** We performed a prospective observational study that included 33 pregnant patients with GD and 30 healthy patients. For all fetuses, a 4-chamber 3s cineloop was recorded and analyzed online with Fetal Heart Quantification (FetalHQ), a novel proprietary speckle tracking software. The following cardiac indices were calculated: global sphericity index (GSI), global longitudinal strain (GLS), fractional area change (FAC), and 24-segments end-diastolic diameter (EDD), fractional shortening (FS), and sphericity index (SI) for both ventricles. Demographic and cardiac differences between the two groups were analyzed, as well as intra-rater and inter-rater reliability. **Results.** There were significant changes in right ventricular FAC and FS for segments 4-24 in fetuses exposed to GD (-1 SD; $p<0.05$). No significant differences were detected for GSI, GLS, EDD or SI for either ventricle. **Conclusions.** Fetuses exposed to GD present impaired right ventricular contractility, especially in the mid and apical segments.

Keywords: gestational diabetes mellitus, fetal cardiac function, echocardiography, speckle tracking, FetalHQ

Fetal tachycardias with unexpected postnatal evolution

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The majority fetal arrhythmias are benign conditions, such as premature atrial contractions, that do not require treatment, sustained fetal tachycardias representing rare entities. However, these dysrhythmias may lead to hemodynamic decompensation, hydrops, premature birth, or even perinatal death. The assessment of the rhythm disturbances can be a challenge, echocardiography serving as an important, wide spread and available diagnostic tool of evaluation. The determination of the underlying arrhythmia mechanism holds great prognostic value and may represent an important aspect in choosing the appropriate transplacental medication, when needed. Firstly, we report the case of a newborn with sotalol-controlled fetal ventricular tachycardia, who was postnatally diagnosed with COVID-19 infection. In the neonatal period, myocardial injury was described and sustained on the basis of left ventricular dysfunction, rapid progression to coronary artery dilation, pericardial effusion and an arrhythmic storm. We believe that, in this case, there was a significant overlap between the fetal ventricular tachycardia and the COVID-19 infection, as both factors may have contributed to the myocardial dysfunction and to the fulminant clinical evolution. Secondly, we present the case of a fetus with ongoing atrial tachycardia, that despite the initiated transplacental therapy, resulted in the deterioration of the intrauterine hemodynamic status, thus making an emergency caesarean section necessary. Postnatally, the tachycardia had an unusual characteristic (abrupt onset and cessation, non-responsiveness to overdrive, termination by direct cardioversion) in association with an ostium secundum type atrial septal defect and a large interatrial septal aneurysm. Electrocardiographic recordings showed P-waves with characteristics making a right low septal origin likely, making the involvement of the septal aneurysm possible.

Keywords: fetal tachycardias, fetal arrhythmias

Is MRI sufficient as the only method for assessing recurrent deep endometriosis lesions? A revision of the data from literature

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Introduction. Endometriosis is a chronic neuroinflammatory disorder affecting approximately 6-10% of reproductive age women. The diagnosis of endometriosis is suggested on the combination of symptoms, clinical examination findings and imaging methods including transvaginal sonography (TVS), magnetic resonance imaging (MRI) and rectal echo-endoscopy (REE). Imaging plays a pivotal role for the diagnosis and presurgical mapping of the disease. However, imaging's roles in the identification of disease recurrence and postoperative complications are not well established. **Materials and method.** The analysis of articles published in the literature for evaluating the role of MRI in the examination of disease recurrence in the case of patients who have suffered a surgical intervention for pelvic endometriosis. **Results.** Currently, there is no data in the literature of specialty regarding the best imaging method for detecting endometriosis recurrence after the surgical intervention. Moreover, there is no clear recommendation concerning the TVS protocol in the diagnosis of recurrent endometriosis. The majority of the studies confirm the fact that posterior shading represents a true limitation of TVS during the postoperative period for evaluating recurrence and no MRI protocol which could help us analyze correctly all pelvic compartments is known to exist. Additional studies are needed to be able to determine whether MRI could be a first imaging line of evaluation of the recurrent endometriosis or not. The MRI with a protocol in accordance with European Society of Urogenital Radiology (ESUR)'s guidelines, with vaginal gel, shows promising results in the detection of endometriosis recurrence. **Conclusions.** The ultrasound is the first imaging method used for diagnosing endometriosis recurrence. MRI could be superior in the case of detecting profound endometriosis recurrence (DE) thanks to its capacity to detect small peritoneal hemorrhaging implants, pelvic fibrosis, and to its ability to differentiate active endometriotic tissue from fibrosis sequelae. Extensive studies are necessary for improving the performance of imaging techniques in the diagnosis of recurrent endometriosis lesions.

Keywords: endometriosis, postoperative recurrence, magnetic resonance imaging (MRI)

The challenges of diagnosing the transposition of the great arteries in the first trimester

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Transposition of the great arteries is one of the most common fetal cardiac anomalies. It is a severe congenital heart disease that requires emergency surgical treatment in the neonatal period and, thus, the prenatal diagnostic is of most importance. Usually "anomaly scans" for fetal malformations are performed in the first, second and third trimesters, but as ultrasound machines have evolved and images resolution has improved, the challenge nowadays is to diagnose severe fetal malformations such as congenital heart disease in the first trimester of pregnancy. Transposition of the great arteries, although a severe cardiac malformation, with important alterations of the heart anatomy, is a difficult to diagnose heart anomaly. Large populational studies and official reports state that the prenatal detection rate for transposition of great arteries is only around 65%. Very few articles report the diagnosis of transposition of great arteries in the first trimester and even fewer offer a detailed ultrasound and pathological description. The exact diagnosis of what type of fetal anomaly is present in the first trimester is usually difficult due to the small dimensions of the fetal heart at 11-13 weeks and in the case of termination of pregnancy we don't have the privilege to perform a second-trimester anomaly scan at 20-22 weeks. We present our first ultrasound findings and pathology slides that confirm the diagnosis of transposition of the great arteries.

Keywords: great arteries, fetal cardiac anomalies

Hypoplastic left heart syndrome – prenatal diagnostic, postnatal management and prognosis

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Hypoplastic left heart syndrome is characterized by the hypoplasia of the left ventricle alongside the hypoplasia of the aortic arch, that leads to a significand reduction in systemic blood flow. The incidence is around 0.10-0.25 cases per 1000 newborns, representing 3.8% of all congenital heart disease. The prenatal diagnostic is established using ultrasound, on the 4-chamber view, where we see only one ventricle, the right one, the left one being small in dimensions, hypoplastic and with a severely decreased contractility. Also, on the 4-chamber view we observe other more subtle changes such as smaller than normal left atrium, compared to the right one, and a foramen ovale flap that opens paradoxically to the right, both these changes appearing due to the altered hemodynamics of the heart. In many cases, the prenatal diagnostic is established late in the pregnancy or the parents do not want to terminate the pregnancy, so newborns with hypoplastic heart syndrome are born and require neonatal intensive care support. These cases represent a challenge for any neonatal intensive care department and have a high morbidity and mortality rate. Maybe the most important fact to be discussed is the long-term prognosis, that is generally poor, even for cases that benefit from surgical repair. For hypoplastic left heart syndrome, the surgical intervention has a palliative role, as biventricular circulation cannot be obtained.

Keywords: hypoplastic left heart syndrome, prenatal diagnostic, blood flow

Second-trimester uterine notching persistence as an independent factor in predicting preeclampsia

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Objectives. Preeclampsia (PE) is a multisystemic disease with a heterogenous pathogenesis involving maternal, fetal and placental factors. Uterine arteries Doppler indices assessment has become an integral part of first trimester PE screening protocols. Our objective was to determine if second-trimester (ST) persistent bilateral notching could be used as an independent factor in predicting PE. **Materials and method.** A number of 220 normotensive pregnant women with risk factors for PE were enrolled between 19 and 25 weeks of gestation. Beside the protodiastolic notching subjectively assessed, the following indices were analyzed: cross-sectional – the mean resistivity index (RI); longitudinal – the individual longitudinal flow pattern of mean RI. Multivariable logistic regression analysis was performed, having as endpoints early- and late-onset preeclampsia, and gestational hypertension. **Results.** Persistent bilateral notching was seen in 7.6% of cases and 3.4% of the patients developed PE (3% – late onset; 0.5% – early onset PE). Bilateral uterine artery notching in the ST was an independent explanatory variable for early-onset PE and gestational hypertension, but not for late-onset PE. **Conclusions.** Including a subjective marker in ST screening protocols for PE may improve the detection rates in patients at risk for developing early-onset PE and other pregnancy-induced hypertensive disorders. This may be easily obtained and may raise awareness in late booked patients.

Keywords: uterine artery spectral Doppler, ultrasound, preeclampsia

The sonographic imaging of the fetal ureter

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Ultrasound textbooks usually state that the fetal ureter is not visible unless it is dilated. However, things have changed given that advances in ultrasound technology have constantly improved the resolution of the images. The objective of this paper is to describe the features and size of the normal fetal ureter and of the fetal ureter in suspected urinary tract anomalies. For this purpose, a number of 201 consecutive ultrasound examinations, performed at 20-22 and 30-34 weeks, were studied. The objectives were to find out the percentage of fetuses where the ureter is visible, the mean size of the ureter in fetuses with no suspicion of urinary tract anomaly, and in fetuses with suspected anomaly. The technique of obtaining the ureter measurements is described, together with the common pitfalls. A total of 193 measurements were obtained, out of the possible 402 ureters examined. The mean measurements of the ureter in the second and third trimesters were calculated, and some particular cases are detailed. The mean diameter of the ureter in the second trimester was calculated to be 1.5 mm, and in the third trimester – 2 mm.

Keywords: fetal ureter, urinary tract anomalies

A rare case of live tubal ectopic pregnancy at 13 weeks of gestation: a diagnostic challenge

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Introduction. We report a rare case of live tubal ectopic pregnancy at 13 weeks of gestation, with an atypical presentation, the correct ultrasound diagnosis of this case representing a real challenge for us. **Materials and method.** A 36-year-old patient presented to the emergency department with lower abdominal pain and genital bleeding in small amounts two weeks after an abortion on request. Ultrasound examination revealed a uterine cavity with a nonspecific content, as well as a parauterine image with a gestational sac with a live embryo of 13 weeks. The positive and differential diagnosis of the case was a real challenge, especially due to the fact that the MRI examination provided confusing data. **Results and conclusions.** In this context, we decided to perform a diagnostic laparoscopy, with a multidisciplinary team, which highlighted the tubal location of the pregnancy, with subsequent salpingectomy. This rare case had a favorable evolution, despite the fact that there were all the conditions for the occurrence of important complications.

Keywords: ectopic pregnancy

The value of routine fetal echocardiography in the first-trimester combined screening for trisomy 21

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Objectives. High-quality equipment and obstetricians experience in evaluating congenital heart defects (CHD) make fetal echocardiography in the first trimester a routine investigation. Our aim is to present the importance of fetal heart examination within the first-trimester combined screening for trisomy 21 (T21), FMF protocol. **Materials and method.** This is a retrospective study conducted between 2.02.2010 and 30.06.2022. The study included 1745 pregnant women who performed FMF screening for T21 and 14 pregnant women who performed the noninvasive test on request. The ultrasound included examination of the fetal anatomy, measurement of the nuchal translucency (NT), and assessment of blood flow through the tricuspid valve and venous duct (VD). The evaluation of the fetal heart was done using color Doppler in the 4-chamber view, atrioventricular and ventricular-arterial connections, the pulmonary trunk and the aortic arch. Invasive testing for aneuploidies was done according to the FMF protocol. **Results.** The cardiac defects that were identified were as follows: atrioventricular septal defect – nine cases, hypoplastic left heart – five cases, absent pulmonary valve syndrome – five cases, common arterial trunk – two cases, transposition of the great vessels – one case. NT thickness ranged between 1.1 and 8.9 mm (median 5.3 mm). We identified 11 cases with hydrops, 18 cases with tricuspid regurgitation, and 13 cases with negative "a" wave at VD level. Extracardiac malformations were identified in 13 cases. Eight cases with chromosomal abnormalities were diagnosed. Twelve pregnant women refused genetic diagnostic tests. Outcomes: therapeutic abortion – eight cases, elective abortion – seven cases, miscarriage – four cases, full-term birth – two cases, ongoing pregnancy – one case. **Conclusions.** Improving technology and the skills of operators in assessing the fetal heart increase the chance of diagnosing severe CHD in the first trimester. The benefits of early detection of CHD include access to abortion in selected cases with adequate time to make an informed decision, and follow-up with additional tests (karyotyping and fetal cardiologist counseling).

Keywords: congenital heart defect, first trimester screening, prenatal diagnosis

Conotruncal cardiac anomalies – a challenge in ultrasound diagnosis and outcome

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Conotruncal heart defects are structural abnormalities of the cardiac outflow tract, that encompass tetralogy of Fallot, transposition of the great arteries, and common arterial trunk. In this study, we analyzed 18 cases of conotruncal heart malformations, diagnosed in the last four years, in two obstetrics and gynecology university clinics from Bucharest. The difficulty in ultrasound diagnosis of these malformations is high, the rate of detection of these abnormalities on second-trimester fetal morphology ultrasound, reported in the literature, ranging from 36.4% (for transposition of the great arteries) to 69.1% (for common arterial trunk). Most cases were analyzed by at least two ultrasound experts with experience in fetal morphology scan. In a high number of cases, we found discrepancies between the interpretations of the changes identified in these conotruncal malformations, with frequent diagnostic divergences. In some cases, as a result of abortion, we performed an anatomical pathology investigation on the fetus. In these cases, there were sometimes difficulties in interpreting certain anatomical aspects, especially in cases where the investigation was not performed by a pathologist specialized in fetal heart defects diagnosis. Given the low frequency of these malformations in the global context of fetal malformations, the rate of antenatal identification and difficulty of detection through fetal morphology scan, the prognosis of these malformations is difficult to predict. These elements lead to difficulties in counseling the pregnant women, especially in cases where these cardiac malformations are also associated with other fetal structural or chromosomal abnormalities, which can also affect the prognosis.

Keywords: conotruncal cardiac anomalies, ultrasound diagnosis

Metachronous Krukenberg tumor of colonic origin – ultrasonographic, histopathologic and immunohistochemical diagnosis

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Introduction. Krukenberg tumor (KT) is a metastatic ovarian carcinoma, usually secondary to gastric cancer, but it can be caused by other adenocarcinomas such as colorectal, with specific immunohistochemical findings. Ovarian metastasis after colorectal cancer is uncommon, with a prevalence of 0.9% in synchronous tumors and 0.8% in metachronous tumors. **Case report.** We report the case of a 57-year-old patient diagnosed one year ago with colon cancer, oncological treated and removed by Dixon surgery, who presented at the hospital with a 15-cm ovarian tumor. The ultrasound revealed a predominantly cystic tumor on the area of the right adnexa, with a diameter of 15/12/12.5 cm, with multiple septations; 25% solid mass, heterogeneous, with papillary projections, the Doppler analysis showing multiple tumor vessels with low impedance flow – the overall aspect was suggestive for a malignant ovarian tumor. During the surgery, the right ovary was removed and sent for an ice histopathological exam that suggested a mucinous adenocarcinoma. Afterward, the surgery was completed with total hysterectomy, salpingectomy, contralateral adnexectomy and appendicectomy. The final result after the embedded paraffin exam confirmed the first histopathological aspect, and the immunohistochemistry markers confirmed the metastatic origin of the tumor from the previous colon cancer (CDX2+, CK20+, CK7+ and 30-40% ki67 and p53 expression). **Results and conclusions.** Metachronous KT is a rare entity. The ultrasound aspects may suggest a metastatic ovarian tumor, but the histopathological exam, along with the immunohistochemistry markers, establish the diagnosis and the etiology of the primary tumor. The guidelines for KT treatment are insufficient. The best course of action remains the resection of the primary tumor with total hysterectomy, salpingectomy, and contralateral adnexectomy followed by adjuvant treatment, depending on the synchronism of the tumor.

Keywords: Krukenberg tumor, colon cancer, immunohistochemistry

The use of ultrasonography in personalized embryo transfer procedures

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Ultrasonography (US) is a vital tool used during human assisted reproduction procedures. It is used for evaluation before and during the procedure in order to monitor the ovarian response, for oocyte harvesting and embryo transfer. Nowadays, couples undergoing assisted reproduction procedures benefit from personalized protocols for stimulation and embryo transfer so as to reach the highest chances of success. The personalized embryo transfer offers the chance to either follow through with the procedure or to cryopreserve all the embryos. Important factors in making this decision are the ovarian stimulation parameters, the risk of hyperstimulation syndrome and the assessment of the endometrial receptivity either through determination of progesterone levels or by ultrasound. The assessment of the receptivity implies the measurement of the endometrium thickness, the assessment of its morphology and vascularization. During the embryo transfer, abdominal or transvaginal US is used in order to achieve a better control of the passage and position of the embryo transfer catheter in the uterine cavity, meaning that we tailor the procedure to the patient. Difficulties during the passage can be met depending on the position, uterus dimensions, presence of anatomical variants of the cervical canal or underlying pathologies. Using ultrasound, one can avoid excessive manipulation of the uterus and cervix, actions that could induce uterine contractions, thus lowering the chances of success. The moment of the embryo transfer, the embryo flash, is a marker for successful transfer. It can be followed-up through 4D US in order to assess the migration during the following hours. The migration towards the fundus of the uterine cavity correlates with a higher success rate.

Keywords: IVF, embryo transfer, ultrasonography

Prenatal diagnosis of isolated fetal cleft lip – case report

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Introduction. Cleft lip is one of the most common abnormalities diagnosed in newborns. The incidence of cleft lip is two times higher among male newborns compared to female newborns. Its prevalence is 1 in 700 births. Cleft lip is associated in 6% of cases with alveolar cleft, and in 75% of cases, with both alveolar cleft and palate cleft. However, the evaluation of the fetal palate is not recommended in ultrasonography screening to assess fetal anatomy in the second trimester of pregnancy. Approximately 1-2% of cases are associated with trisomies 13 and 18. Isolated cleft lip is not associated with chromosomal abnormalities, but oral clefts may be associated with approximately 400 syndromes. In recent years, there has been an evolution in 2D and 3D ultrasound evaluation of the fetal palate. Several techniques with different rates of detection of hard and soft palate defects have been proposed. Although no consensus has currently been reached on the technique with the highest detection rate, the trend is to explore the usefulness of 3D ultrasound in this regard. **Materials and method.** The purpose of this paper is to present a case of isolated cleft lip, diagnosed by 2D and 3D ultrasounds in the second trimester of pregnancy. The ultrasound evaluation of the fetus was done with a Voluson E8 ultrasound. The cleft lip was highlighted at 20 weeks of gestation, when the second-trimester screening for fetal abnormalities was performed. No other fetal abnormalities or cleft palate were detected. The ultrasound evaluation revealed a linear defect that extended from the left side of the lip to the left nostril. Serial ultrasound evaluations were performed at 24, 28, 32 and 36 weeks of gestation, without other fetal abnormalities being highlighted. The patient gave birth to a live male fetus at 38 weeks of pregnancy, without other associated abnormalities. **Results and conclusions.** Ultrasound techniques in the prenatal diagnosis of oral clefts are constantly evolving and, although cleft lip is frequently diagnosed in the second trimester of pregnancy, the current trend is to diagnose this pathology at the end of the first trimester of pregnancy.

Keywords: ultrasound, cleft lip, fetal

Uterine fibroid torsion during pregnancy: laparotomic myomectomy in the sixth week of pregnancy – case report

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Introduction. Uterine fibroids or myomas represent benign hormone-dependent tumors of smooth muscle on the uterine wall. Fibroids are found in 2-10% of pregnant women. Pregnancy along with a fibroid represents a high-risk pregnancy which may lead to many complications. We present a case of successful multiple laparotomic myomectomy at 6+1 weeks of gestation. **Case report.** A 34-year-old gravida 2 para 1, at six weeks of gestation, was admitted to our department with severe lower abdominal pain. On ultrasound examination, it has been determined a multinodular uterine myomas. Considering the severe pain syndrome and the patient's desire to keep the pregnancy, it was decided to perform a laparotomic myomectomy. The intervention was under epidural anesthesia. The abdomen was opened with inferior median laparotomy. The intraoperative examination showed the presence of a multinodular uterine fibroids, and a pedunculated torsionated fibroid, 10x9 cm in diameter, on the posterolateral right uterine border. The myomas were enucleated and nodules lodges were sutured in multiple layers to restore the integrity of the uterine walls. On the anterior uterine wall, at the level of the isthmus and left border, it was detected an intramural myomatous node, 9x10 cm in diameter, which was impossible to remove. The pregnancy continued with no further problems, and at 37 gestational weeks, an elective caesarean section was performed, being delivered a healthy neonate, with a birth weight of 2035 g and 7/8 points by Apgar score. During caesarean section, the myomectomy of two intramural myomas in lower segment of the uterus was successfully done. The postpartum period was without complications. **Conclusions.** The most common indication for myomectomy during pregnancy is acute severe abdominal pain. We believe that our experience will encourage our colleagues and pregnant women with uterine myomas, that the surgical management of uterine myomas during pregnancy can be successfully performed.

Keywords: torsion, myomectomy, pregnancy

Management and ultrasonographic findings of rare cases of placental tumors

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Placental tumors are broadly divided into trophoblastic and non-trophoblastic tumors. Non-trophoblastic placental tumors include chorioangiomas, hemangiomas, teratomas and hematomas. Chorioangioma is the most common histological type of placental tumors, with a prevalence of 0.6-1%. Placental tumors are usually asymptomatic, and they are discovered during routine ultrasound examination. Despite the rarity of these tumors, they can lead to multiple maternal or fetal complications, such as premature uterine contractions, placental abruption due to sudden fall of the intrauterine pressure after membrane rupture, malpresentation, increased risk of caesarean section performance, and postpartum hemorrhage. Fetal complications include fetal heart failure, thrombocytopenia, nonimmunologic fetal hydrops, hemolytic anemia, intrauterine growth restriction, brain infarction, umbilical vein thrombosis, fetal cerebral embolism and intrauterine fetal and neonatal death. Doppler ultrasound examination is the gold standard in the primary diagnosis of placental tumors. Taking into consideration the degree of vascularity of the placental tumor, the clinician may indicate the risk of fetal complication. Magnetic resonance imaging is used only in suspicious cases, while computed tomography has a limited role due to its high radiation dose and poor tissue differentiation. We present a series of cases of placental tumors diagnosed by ultrasonography, and their management and outcome until parturition.

Keywords: placental tumors, ultrasonography, chorioangioma

Hysteroscopy diagnosed utero-intestinal fistula

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We report the case of a 61-year-old patient, H.O., who presented in our office with foul discharge and pelvic pain, symptoms which started a few months back, but became more serious days prior to his presentation. Relevant from the medical history were a caesarean section and a cholecystectomy (30 years and 20 years before). A pelvic examen was performed and cytological smear as well as a swab for bacteria and fungi were collected, without pathogens present on the result. Upon pelvic ultrasound, uterus and ovaries were without pathological findings and the intestine seemed adherent to the anterior uterine wall. The decision to perform a hysteroscopy was taken due to the persistent pelvic pain. On hysteroscopy, a communication was found between the anterior uterine wall (probably on the site of the caesarean scar) and the small intestine. In the underwent surgery the uterine-intestinal fistula was confirmed and repaired.

Keywords: fistula, utero-intestinal, hysteroscopy

Vaginal leiomyoma: rare and unusual localization for fibroids

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Introduction. Leiomyomas are common benign tumors consisting of smooth muscle cells and fibrous stroma. Their most frequent localization is in the uterus, affecting about 20-30% of women of reproductive age. Vaginal leiomyomas are rarely discovered, with only around 300 cases reported since their first description in 1733. These benign tumors are thought to evolve from Müllerian smooth muscle cells in the subepithelium of the vagina walls. Their most common location is on the anterior vaginal wall and, depending on their size, they may produce symptoms such as dyspareunia, pain or dysuria. These benign tumors sometimes may occur simultaneously with leiomyomas elsewhere in the body. **Materials and method.** In this present paper, we present the case of a 54-year-old patient who underwent an abdominal hysterotomy for uterine leiomyomas in March 2022. Two months after surgery, during a vaginal examination, we discovered a vascularized vaginal tumoral formation, mobile with the upper and lower planes that was intermittent hemorrhagic. The transperineal ultrasound revealed a vascularized tumoral mass measuring 3.5 cm with the same echogenicity of the myometrium which raised the suspicion of leiomyoma. Tumoral excision was performed and the histopathological examination and immunohistochemistry validated our suspicion of vaginal leiomyoma. **Conclusions.** The correlation between ultrasound examination and clinical assessment allows establishing the diagnosis and finding the best therapeutic approach.

Keywords: leiomyoma, perineal ultrasound, unusual localization

Fetal growth restriction – diagnostic and management challenges in a COVID-19 exclusive facility

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Introduction. Fetal growth restriction (FGR) is defined as the condition where the fetus has not reached its genetic growth potential, the cut-off value for the EFW being below the 10th percentile, in association with other abnormal Doppler parameters. The purpose of our study was to identify pregnancies with FGR and to evaluate the ultrasound diagnosis criteria, the birth management and the neonatal outcome. **Materials and method.** We realized a retrospective study in the "Bucur" Maternity that included pregnancies with the diagnosis of FGR at term. The analyzed data were between 2018 and 2021. **Results.** During the study period, there were revealed 123 pregnancies with FGR. The peculiarity of the period 2020-2021 is that in our unit only COVID-19 births were admitted. Regarding the prenatal diagnosis, it was performed by ultrasound fetal measurements. In a significant rate of 92.5%, the FGR was established based on estimated fetal weight, compared to the expected EFW, but not using percentiles. That represented a major bias and an inadequate diagnosis because those fetuses cand also be small for gestational age (SGA). Being a retrospective evaluation, there were no data if the FGR was early or late. Most pregnancies were delivered by caesarean section, in 84.3% of cases. The correlation of FGR with neonatal criteria of growth anomalies criteria was positive in 65.6% of cases. The neonatal outcome was favorable in 96.4% of cases. **Conclusions.** The applicability of ultrasound criteria for the correct FGR diagnosis is crucial. A heterogeneity of criteria and definition use among clinicians causes an unappropriated diagnosis and management of the cases. The neonatal outcome and the management of pregnancy are in strict dependence to the prenatal diagnosis.

Keywords: intrauterine fetal growth restriction, small for gestational age, ultrasound

Is it enough to see the *corpus callosum* for a normal outcome of the newborn?

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Mid-trimester examination of the fetal brain includes, according to the ISUOG guidelines, as basic examination in two axial planes, transventricular and transthalamic. The structures that are mandatory to be visualized are: the interhemispheric fissure, frontal horns of the lateral ventricles, CPS, thalami and posterior horn of the ventricles giving indirect information of the *corpus callosum* (CC). CC is the largest white matter commissure of the human brain, connecting the left and the right cerebral hemispheres, and has an essential role in cognitive and behavioral development. CC has four segments and is best seen on imaging in a sagittal section of the head starting with 18 weeks. The most common and easily demonstrating anomaly of the CC is the absence of *corpus callosum* (complete or partial agenesia). Apart of this anomaly, there are others that can be also ominous and with impact in brain function, such as hypoplasia, hyperplasia, dysplasia, or lipoma in the CC. Those are more difficult to diagnose, requiring detailed and experienced examination and corroboration with MRI examination. The most difficult part is to counsel the woman about the prognosis and outcome since the literature is scarce and especially in isolated anomalies the outcome is not always predictable. Starting from a case with present but abnormal shape of CC and lateral ventricles anterior horns, we are performing a literature review of the *corpus callosum* anomalies others than agenesia.

Keywords: fetal brain, human brain, *corpus callosum*

Ultrasound guided procedures for nontubal ectopic pregnancies – our experience

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Background. Ectopic pregnancies in Romania have a rate of about 2% of all pregnancies and in steady raise due to multiple factors among whom caesarean section is the most important. Most ectopic pregnancies are tubal, but lately we confront with entities that were very rare in the past: cervical, in the interstitial portion of the fallopian tube, or at the level of the caesarean scar. Ultrasound is indispensable for both early diagnosis and treatment, in order to avoid the high rate of complication and mortality. **Case series.** We report a series of non-tubal ectopic pregnancies diagnosed and conservatory treated in our clinic, with the ultrasound aid, between January 2018 and March 2019. There were five cases treated with ultrasound guided local injection of methotrexate (MTX) 2-4 ml and 1 mg/kg body weight MTX, intravenous injection, in the same session. The first case was a 28-year-old patient with a right interstitial pregnancy diagnosed at five weeks of pregnancy. Only one injection of 2 ml MTX was performed, the beta-HCG levels dropped constantly but slowly, and the image of the pregnancy disappeared after six months. Two cases of caesarean scar pregnancies were diagnosed at five and six weeks and treated with 2 ml MTX injected in the gestational sac, transcervically, under ultrasound guide. One needed repeated injection after 14 days due to no satisfactory drop of beta-HCG level. None required D&C or complicated after the procedure. The ultrasound check 8-16 weeks after the procedure showed the complete resolution. One cervical pregnancy was diagnosed at six weeks and 3 ml of MTX were transcervical injected in the gestational sac. The evolution was favorable, with the normalization of beta-HCG levels five weeks after the procedure. We noticed that the decrease of beta-HCG levels is slower in cases of cervical or interstitial ectopic pregnancies. Therefore, verifying the viability of the pregnancy should be done by measuring beta-HCG at 7, 9 and 11 days after the administration of MTX. One cervical pregnancy was diagnosed at six weeks of pregnancy and 4 ml of MTX were injected transcervically. The pregnancy evolution was arrested, but the uterine important bleeding imposed D&C and Foley catheter in order to achieve hemostasis. Overall success of the ultrasound guided MTX injection was good, without any radical surgery needed. **Conclusions.** Ultrasound constant technology improvements allow the early diagnosis and the minimal invasive procedures make possible the conservative treatment of an otherwise ominous condition.

Keywords: ultrasound, pregnancy, ectopic pregnancies, MTX

Peritoneal cysts and peritoneal cystadenoma imagistic findings and surgical correlation – case series

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Introduction. Although intraabdominal cystic neoplasms arise most frequently from the ovaries, there is a large spectrum of non-ovarian pathologies that may present similarly. Peritoneal cysts are common in premenopausal women with positive history. Especially when large, establishing their origin is challenging. **Case series – method and results.** We present a series of seven cases of histologically confirmed peritoneal cysts and peritoneal cystadenoma, detailing their clinical and imaging findings, and the surgical correlations. The patients were aged between 15 and 53 years old, usually having a long history of abdominal discomfort and distention. All underwent multiple imaging procedures (pelvic ultrasound – US, computed tomography – CT, and magnetic resonance imaging – MRI). The preoperative workout was inconclusive or led to the suspected diagnosis of "ovarian cystic mass". The cystic masses were found to be attached to the peritoneum or mesentera during the surgery, ruling out the ovarian origin. The excision was performed by means of laparoscopic or open surgery; peritoneal washing was routinely performed. All patients had a favorable outcome. **Conclusions.** As in our case series, the literature describes often misdiagnosed peritoneal cysts. US remains the method of choice. CT and MRI offered no additional information in this case series. The nonspecific clinical manifestations and imaging features hampers an accurate preoperative diagnosis in peritoneal cysts.

Keywords: peritoneal cystadenoma, cystic adnexal mass, imaging, surgery

A challenging case of prenatal diagnosis of cerebral arteriovenous fistula draining into the vein of Galen

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Introduction. Cerebral arteriovenous malformations (CAVMs) represent arteriovenous cerebral shunts, usually associated with high flow through the midline venous system, causing severe morbidity and high mortality in the neonatal period if no treatment is offered. CAVMs are very rare vascular defects and most reported prenatally in the literature are related to genuine aneurysmal malformations of the vein of Galen (VGAM). However, it is often difficult to differentiate an authentic VGAM from cerebral arteriovenous fistulas (CAVFs) draining into the vein of Galen (VG), representing a subtype of the arteriovenous cerebral high flow shunts, causing secondary dilatation of the later. **Materials and method.** We present a case of prenatal diagnosis of the intracranial CAVF draining into the VG. A 30-year-old woman was referred to our institution at 32 gestational weeks for a second opinion due to VGAM. Fetal brain scan revealed dilation of the VG, sagittal inferior, straight, transversal sinuses and torcular herophili. Dilation of the VG appeared rather tubular than cystic lesion, with a venous-type flow. Willis's circle appeared abnormally shaped. An abnormal single vessel draining into VG was found, showing high-velocity turbulent flow with low resistance, mainly supplied by a branch of the left posterior cerebral artery. Also, fetal echocardiography revealed moderate cardiomegaly. After birth, the neonate rapidly developed severe cardiorespiratory distress associated with cardiomegaly, high-output cardiac failure and pulmonary hypertension. The newborn died soon after birth, therefore no other imaging modalities were available. Necropsy confirmed the CAVF and the left temporal cystic atrophy. **Results and conclusions.** Doppler imaging, including 3D mode, allowed the detection and differentiation of the CAVF draining into the secondary dilated VG, which has shown a venous-type flow, in opposite to genuine VGAM, where Doppler usually show arterialized venous flow within the lesion. The visualization of the CAVF, draining into VG, venous-type flow in the dilated VG and connection of the later to deep venous system (inferior sagittal sinus) were the main diagnostic features of this condition. This case highlights the difficulties encountered in the prenatal diagnosis of CAVFs. Dilation of the VG may result from drainage of CAVFs into the deep venous system and should not be misdiagnosed as genuine aneurysm of the VG. Timely diagnosis and management of the CAVF is crucial. Embolization, when available, is the treatment of choice. However, the accurate classification is important due to the therapeutic implications, which differ between a true VGAM and a fistula that drains into the VG.

Keywords: aneurysm of the vein of Galen, cerebral arteriovenous fistula

Fetal *ductus arteriosus* premature closure and constriction in both monochorionic twins: a case report and literature review

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Introduction. Idiopathic intrauterine premature closure of the ductus arteriosus (DA), distinct from intrauterine constriction associated with nonsteroidal anti-inflammatory drugs (NSAID) maternal intake or other secondary causes, such as polyphenol-rich foods intake, naphazoline, fluoxetine, caffeine and pesticides, is an uncommon event that often results in significant morbidity and mortality. **Materials and method.** We report a case of a premature DA closure and constriction in both monochorionic twins in a woman without any possible risk factors and a literature review of NSAID-unrelated DA constriction cases. A 32-year-old woman was referred to our institution at 31 gestational weeks and 4 days, because of fetal weights discrepancy in a monochorionic diamniotic gestation. The woman had no history of medication intake, including NSAIDs, as well as alcohol, tobacco or other polyphenol-rich-food consumption, except tea and dark chocolate, during pregnancy. The pregnancy was not complicated by twin-to-twin transfusion syndrome (TTTS) or any discordant structural abnormality. However, selective intrauterine growth restriction (sIUGR) of one of the fetuses was established. Echocardiography of restricted fetus revealed a dilated and hypertrophic right ventricle (RV), as well as right atrium and pulmonary artery (PA), holosystolic tricuspid regurgitation and absent flow in PA and DA. Also, floating hypoechoic masses in PA were seen, presuming early thrombosis. As for the second twin – slightly dilated RV and PA with narrow DA with high velocity flow, indicating premature ductal constriction. An urgent caesarean section was performed. Echocardiographic examinations performed immediately after birth confirmed the normal cardiac anatomy and function in both twins. **Results and conclusions.** Our case is interesting because the DA closure and constriction occurred in both monochorionic twins, of which the premature closure of DA occurred in the restricted fetus. We think that the early diagnosis based on detailed fetal echocardiography and optimal obstetrical management can lead to a timely delivery and reversal of the pathophysiology, providing the potential for a favorable outcome. Beyond the NSAID intake, further research is needed to confirm the role of exposure to risks factors or substances.

Keywords: ductal constriction, ductal closure, monochorionic twin, selective intrauterine growth restriction

Correlation between the value of the posterior ureterovesical angle and the impact of stress urinary incontinence in women with and without cystocele

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Introduction. Stress urinary incontinence (SUI) is a highly prevalent condition which is currently underdiagnosed. To diagnose SUI, clinical examination, patient history, bladder diary, urodynamics and questionnaires may be used. However, the impact of the condition is hard to standardize. The role of transperineal ultrasound (TPUS) for the documentation of pelvic floor dysfunctions has been previously recognized. We aimed to use a novel tool to assess SUI by investigating the association between the bladder neck mobility, reflected by the TPUS measurement of the posterior ureterovesical angle (PUVA) and the SUI score, reported by patients. **Materials and method.** The included patients were allocated to "cystocele" or to "no cystocele" group. All women suffered from SUI and had at least one vaginal delivery. All study subjects underwent TPUS to measure the PUVA. One side of the angle represents the axis of the proximal urethra and the other one was a tangent line to the bladder base. Moreover, the included patients were asked to quantify the subjective burden of SUI on a 100 mm scale. Statistical analyses (Mann-Whitney test, Spearman correlation) were performed using GraphPad Prism 8. **Results.** The two groups were comparable with respect to age, Body Mass Index and parity. In the cystocele group, Spearman coefficient showed a negative, negligible correlation (r=-0.118, p=0.53) between PUVA and VAS score for SUI. In the group without cystocele, no correlation between PUVA and VAS score (r=-0.031, p=0.895) emerged. **Conclusions.** This study analyzed the correlation between PUVA and VAS scores for SUI in women with or without cystocele. Although a negative trend was seen in the "cystocele" group, the statistical significance was not reached. These findings suggest that women with lower PUVA tend to report higher VAS scores for SUI, irrespective of the presence of a cystocele, but studies with larger sample size are required to validate this statement.

Keywords: transperineal ultrasound, urinary incontinence, cystocele

Clinical and imaging findings in a postmenopausal patient with a giant endocervical polyp mimicking pelvic organ prolapse – case report

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Introduction. Endocervical polyps are common benign proliferative lesions composed of a fibrovascular core, surrounded by endocervical glandular and metaplastic squamous epithelium. Chronic inflammation, surface erosion, tissue remodeling and elevated estrogen levels represent common causes for endocervical polyps. Multiparous women, in their 40s or 50s, are predisposed to this pathology. These tissue growths vary in size, most ranging between 1 and 2 cm. Polyps greater than 4 cm are considered giant, and only a few such cases have been described in the literature. We report the case of a 75-year-old lady who presented with a protrusive vaginal mass, a history of occasional vaginal bleeding and vaginal pressure. Although the symptoms were suggesting pelvic organ prolapse (POP), a giant endocervical polyp was found. **Materials and method.** Patient's history was recorded, and clinical examination was carried out. Consequently, a transperineal ultrasound was performed at rest and on Valsalva. Additionally, a pelvic MRI with contrast dye was performed to further investigate the mass. **Results.** The paraclinical investigations revealed a mass arising from the proximal endocervical lumen that was filling the vaginal cavity and protruding through the vaginal introitus. A 1.6/0.6 cm stem was observed at the level of the cervical canal. No malignancy indicators were noticed on imaging. A complete surgical resection of the polyp was performed following dilatation of the cervical canal and exposure of the implantation base of the polyp. A curettage of the endocervix was performed subsequently and hemostasis was achieved with electrocauterization. The recovery of the patient was uneventful, and the symptoms remitted after surgery. **Conclusions.** A protruding vaginal mass is suggestive, in most cases, for POP. Clinical and paraclinical investigations are required to establish differential diagnosis. In this case, a rare entity – giant cervical polyp, mimicking POP – was diagnosed and resected.

Keywords: endocervical polyp, pelvic organ prolapse, menopause

The role of ultrasonography in the concurrent diagnosis of adenomyosis and uterine fibromatosis

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Introduction. Adenomyosis and uterine leiomyomatosis are benign uterine pathologies that affect a large proportion of patients during the reproductive period, as well as their quality of life, causing dysfunctional symptoms such as menometrorrhagia and abdominal-pelvic pain. If only one of these pathologies is present, ultrasonographic diagnosis may be unproblematic, but if these conditions coexist, ultrasonographic detection can be a real challenge. The aim of this study is to determine the utility of 2D ultrasonography in the concurrent diagnosis of these two conditions. **Materials and method.** We conducted a prospective study (from January 2019 to November 2021) on 34 patients with benign uterine pathology, at reproductive ages, who benefited from surgical treatment. All patients underwent a preoperative 2D transvaginal scan using the GE Voluson E8 and GE Voluson E10 ultrasound machines and were evaluated for suggestive ultrasonographic changes of these conditions. Ultrasonographic changes were correlated with the histopathological findings. **Results.** Out of the 34 patients with benign tumor pathology, we selected two groups: the first group consisted of patients with uterine leiomyomatosis and the second group was composed of patients with combined pathology (leiomyomatosis and adenomyosis), histopathologically documented. Typical ultrasonographic findings of both adenomyosis and leiomyomatosis were present in 29.4% of cases. Concomitant adenomyosis and leiomyomatosis was histologically confirmed in 50% of cases. **Conclusions.** In conclusion, specific changes detected upon ultrasound may be suggestive for a combined diagnosis of adenomyosis and uterine fibromatosis in more than half of the cases, but with low specificity and sensitivity.

Keywords: ultrasonography, fibromatosis, leiomyomatosis, adenomyosis, uterine pathologies

Ultrasound diagnostic and management in ovarian mucinous tumors

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Introduction. The ultrasound diagnosis of ovarian tumors may be a challenge even for experienced examiners. The accuracy of ultrasound diagnosis is correlated with the preoperative and intraoperative management of each case. The purpose of our study was to reveal the ultrasound characteristics of diagnosis and management for mucinous ovarian tumors based on the most recent publications from the literature and our clinical experience. **Materials and method.** We searched the international data bases using keywords such as "ovarian tumors", "mucinous ovarian tumors" and "borderline ovarian tumors". There were extracted only the publications about mucinous ovarian tumors. **Results.** The initial research revealed 9120 reports about mucinous tumor, but there is a lack of publications about strictly mucinous ovarian types. The majority of publications are about pathology characteristics. The studies revealed that patients with histological diagnosis of mucinous ovarian tumor may have ultrasound appearance of multilocular cyst with 2-10 locules, being representative of a benign cystadenoma, whereas a multilocular cyst with >10 locules is indicative of borderline tumor. Most invasive tumors of mucinous contain solid components, the most typical ultrasound appearance being that of a multilocular-solid tumor. Papillary projections are typical features of borderline tumors. There is a heterogeneity regarding surgical approach. **Conclusions.** There is a reduced number of studies regarding the ultrasound diagnosis and operative management of ovarian mucinous tumors. The literature is based on case reports, but the clinical features presented are substantial. Further studies are required regarding the subject.

Keywords: ovarian tumors, mucinous ovarian tumors, ultrasound diagnosis

The role of ultrasound in the diagnosis and monitoring of isthmocele

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Background. Uterine isthmocele represents nowadays a high-frequency pathology. It is an indentation at the site of a caesarean scar that represents anterior myometrial interruption or a triangular anechoic flaw, having a base that communicates to the endometrial cavity. Over the last twenty years, the rate of caesarean births has risen wide world, and iatrogenic complications such as uterine scar defect, ectopic pregnancy implanted at caesarean scar or *placenta praevia* are more often encountered. Since its incidence increased, new prevention and therapeutic methods have been developed. **Objective.** The purpose of this study is to present diagnostic and management methods in uterine niche that have been used in two hospital centers by comparison with the literature data. **Materials and methods.** The ultrasonography, by various imaging tools utilized to evaluate the integrity of uterine wall, and clinical management or hysteroscopic procedure of the uterine scar defect were performed in all cases, depending on the dimension of the niche, symptoms, infertility and planning to conceive. New available methods of prevention and treatment were also discussed. We present a series of nine cases analyzed regarding the ultrasonography before procedure, after procedure and at a 3 to 12 months of follow-up. **Results.** Our cases were admitted for symptomatology regarding dysfunctional menstrual period, algodysmenorrhea and/or infertility. The median age was 36 years old, and the parity was between 1 and 3, being caesarean sections in most of the births. The pretreatment with progrestative was present in all cases. The height of isthmocele was between 3.5 and 10 mm, and the myometrial distance at the level of the niche was 3-6.5 mm. The procedure was hysteroscopic ablation of the defect. The follow-up was for more than three months, with favorable outcome in all cases, reduced pain during menses, and partial reduction of the menstrual flow. The ultrasound evaluation done in the majority of cases showed the absence of the niche, and the myometrial thickness of more than 6 mm. **Conclusions.** Isthmocele is a more and more frequent pathology, and combined echography and hysteroscopy represents the appropriate management for these cases.

Keywords: isthmocele, hysteroscopy, ultrasound evaluation, caesarean section

Particular case of deep venous thrombosis in pregnancy

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Lower abdominal pain in the third trimester of pregnancy is a common sign in our practice. The goal is to maintain a high index of suspicion to evaluate the risk factors, thus the right diagnosis and treatment strategy can be done. This is a case report of a 25-year-old patient, with an uneventful previous pregnancy, examined for third-trimester anomaly scan. At the detailed transabdominal scan, we note a well-developed fetus in cranial position. Right uterine artery interrogation was painful, and revealed a normal flow, but a high maternal rate between 121 and 128 beats per minute. Transvaginal scan on the right side found tangled veins dilated up to 20 mm, with turbulent flow but no clots. Venous thromboembolism disease is an important cause of pregnancy-related morbidity and mortality, which remains underdiagnosed until the stage of pulmonary embolism. Because the patients' complains are nonspecific and the consequences of missing diagnosis are serious, the clinical suspicion and the presence of risk factors should be considered.

Keywords: pain, deep venous thrombosis, transvaginal ultrasound

Ultrasound placental pathological features

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Placenta (exchange path) is an organ derived from maternal tissues – decidua, and fetal tissues – chorion, that's why we have to examine it carefully, thinking at physiology and pathology of each gestational age, from maternal point of view and fetal, as well. Ultrasound evaluation of the placenta greatly contributes to the diagnosis and clinical management of pregnancy. Placental pathology can be associated with obstetric complications in varying degrees, from fetal anemia and growth restriction to fetal death. This study follow-up four main pathways of placental pathology as infectious diseases with CMV, parvovirus B 19 and SARS-CoV-2, metabolic changes processes in gestational diabetes, circulatory aspects and placental tumors. Ultrasound aspects and changes in the placental structures during the pregnancy dynamic, sustained by images from personal collection, will lead us to the associated pathology.

Keywords: placenta, pathology

An unusual case of urachal cyst misdiagnosed as an ovarian cyst: ultrasound assessment and differential diagnosis

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Introduction. We report a rare case of complicated urachal cyst misdiagnosed as an ovarian cyst, with an atypical presentation, the correct ultrasound diagnosis of this case representing a real challenge for us. **Materials and method.** A 45-year-old patient presented into our department with lower abdominal pain and intestinal disorders onset of about three weeks. Ultrasound examination revealed a large hypoechoic cystic formation located to the right of the uterus, interpreted as an ovarian cyst. MRI examination confirmed the diagnosis of right massive hydrosalpinx and ovarian cyst. **Results and conclusions.** In this context, we decided to perform surgery, which actually highlighted the presence of an atypical urachal cyst, which required partial resection of the bladder. In some cases, the differential imaging diagnosis between a urachus cyst and an ovarian cyst cannot be made before surgery, which can lead to major complications.

Keywords: urachal cyst, ovarian cyst

Postnatal management of newborns detected with heart diseases – a single academic public center experience over a two-year period

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Congenital heart defects (CHD) are the most common type of congenital malformation. Despite the improved survival rates, CHD remains a major cause of mortality and morbidity in children and young adults. CHD is one of the congenital malformations that lead to frequent hospitalization and long hospital stays. Data collection took place between January 2020 and June 2022 at a maternity university clinic in Romania, with around 1500 admissions annually. The Neonatal Intensive Care Unit is a secondary level of care, with around 200 admissions annually. During the study period, six neonatologists and 35 nurses worked at the unit. The inclusion criteria for the study were all inborn and outborn infants admitted to the unit who had at least one echocardiography study during hospital stay and were assumed to have either a highly suggestive pathological murmur detected at the postnatal clinical exam or were detected antenatally with CHD. Before the study commence, all participants received verbal and written information from the healthcare providers. All echocardiographic examinations were retrieved from the medical file either performed by cardiologists or neonatologist performing targeted neonatal echocardiography (TNECHO). The design of the study met the criteria for operational improvement activity at this university hospital, and it was also tailored to investigate the postnatal management including pre-transfer and post-transfer to tertiary level of care referral unit or pediatric cardiology process. Demographic, obstetrical and perinatal data were analyzed along with the hospital stay and resourced used for infants detected with CHD or heart diseases associated with critical events related to pathological pregnancy or asphyxia at birth. The results of this study stated that there was a surprisingly higher percentage of infants detected with CHD and also an important number of infants with associated cardiac disfunction in the absence of CHD. The conclusion of this study is that there is a need for an improved management of newborns, especially those without antenatally ultrasound screening, but also for those infants from pregnancy affected by intrauterine growth restriction and preterm birth.

Keywords: congenital heart defects, newborns, patients' safety, neonatal intensive care unit

Think and look outside the box – the pentalogy of Cantrell: case report

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The pentalogy of Cantrell (PC) represents a rare congenital disease, having a poor prognosis, with an incidence varying from 1 to 65 per 200,000 births. It comprises five anomalies: defect of the anterior diaphragm, of the lower part of the sternum, of the abdominal wall, of the diaphragmatic pericardium, and different intracardiac abnormalities. It was suggested that this anomaly appears due to a defect in the embryonic development around the 14th and 18th day of gestation. The ultrasound represents a valuable tool, allowing a correct and early diagnosis even from the first trimester of pregnancy. The *ectopia cordis*, a common feature in the PC cases, is defined as the displacement of the heart and it can be classified as: cervical, cervicothoracic and thoracoabdominal. Frequent heart defects associated with the PC are represented by: left ventricular diverticulum (20-50%), tetralogy of Fallot (17-20%), ventricular septal defect (VSD) – 100%, atrial septal defect (ASD) – 53%, interatrial communication (34.6%), pulmonary stenosis or atresia (31.5%), transposition of the major arteries, tricuspid atresia, *truncus arteriosus*, and atrioventricular septal defect. A classification has been proposed due to the existence of incomplete spectrums of the PC: Class 1 – definitive diagnosis, comprising all five defects; Class 2 – probable diagnosis, presenting four defects that include intracardiac and ventral walls abnormalities; Class 3 – incomplete, presenting various defects, including a sternal abnormality. Thus, we describe the case of a 29-year-old patient, with amenorrhea of 17 weeks, who presented in our institution for ultrasound anomalies detected in another service. During the transabdominal ultrasound, we found a fetus presenting an anterior defect, with a hernia sac containing the stomach, intestinal loops, liver and partially the heart associated with pleurisy, pericarditis and ascites. PC was suspected. The patient opted for a medical interruption of the pregnancy and the anatomopathological results confirmed the diagnosis of PC. In conclusion, we emphasize the need for a thorough ultrasound in order to early diagnose entities with poor prognosis, such as pentalogy of Cantrel.

Keywords: pentalogy of Cantrell, *ectopia cordis*

The IVF fetal heart – a ventricular functional assessment

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Introduction. Taking into account the increasing numbers of the babies conceived by assisted reproductive technology (ART), it is easy understandable why the health of these kids and the safety of specific ART procedures are of great concern for public health. The cardiac remodeling and suboptimal function of these hearts are now considered real facts, and some of these features might persist even postnatally, potentially leading to systemic and pulmonary vascular dysfunction during adulthood. **Methodology.** The author designed a prospective case-control study in order to evaluate the morphological, functional and global cardiac parameters in 100 cases of ART obtained pregnancies and to demonstrate the potential alterations of these parameters. The etiology and length of infertility, stimulation data, number of embryos transferred, use of fresh or frozen embryos, and the embryonic stage at the time of transfer were also considered. In this paper, since the study is still ongoing, only the data regarding the function of the ventricles will be presented. **Results.** A trend of impaired ventricular function in the ART group was observed in this study even without strong statistical significance. Both ventricles are affected, with a predominance of the right one. **Conclusions.** These findings, even subclinical, are juxtaposed with literature data and suggest once more the independent contribution of the ART in inducing cardiac remodeling and altered function. The long-term health implications of these alterations remain unclear, that is why this paper confirms also the need of a longitudinal assessment of the fetal cardiac function, taking into account the fact that these changes might persist in the first three years of life and some prompt intervention after birth, including breastfeeding, may help in reducing the long-term cardiovascular risk.

Keywords: ART, cardiac, remodeling

Dilemmas in the diagnosis of some breast tumors – cases presentation

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In the clinical application, the ultrasound image is an integral component of the diagnostic evaluation of breast lesions. It is applied for further diagnosis to avoid missed diagnosis in mammography and is a primary modality used to examine palpable abnormalities in young women. Its new role as a primary screening tool in women with dense breast tissue is growing. However, there are some problems regarding this – for instance, the poor quality and uneven echo distribution, which creates an obstacle to diagnosis. The results from ultrasound screening are usually dependent on the operator, and are related to clinical experience and sometimes personality. Overestimates or underestimates of lesions can either lead to a misdiagnosis of cancer or to an unnecessary biopsy. Mimickers of breast cancer can be divided into three groups: inflammatory breast conditions, proliferative breast conditions, and benign breast tumors. We present two cases of breast inflammatory conditions (one malignant and one hyperplasia with atypia), two patients with hamartoma, some cases with breast architectural distortion, and one case with a very large intramammary node. Conclusions. The role of breast ultrasound has evolved, progressively gaining recognition as a diagnostic tool. Ultrasound provides a significant contribution in the management of breast tumors and will continue to be considered as an indispensable diagnostic and screening tool.

Keywords: breast tumor, ultrasound, screening

The role of ultrasound in the diagnosis of breast cancer

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Objective. The aim of this study was to evaluate the concordance of tumor sizes estimated by ultrasound with those determined by the histological examination. We analyzed the clinical value of ultrasound features of breast lesions and axillary lymph nodes for predicting the tumor grading and risk of nodal metastases in patients with breast cancer. **Methodology.** In this retrospective and prospective study, 85 patients with surgery for breast cancer in the First Clinic of Gynecology, Iaşi, were recruited between January 2019 and June 2022, and their preoperative ultrasound features and postoperative pathologic results were collected. For axillary lymph node, there were evaluated the cortex thickening, the hillum aspect, the echo pattern and the contour of the node. We took into account the largest tumor and lymph node dimension. **Results.** The mean age of the study group was 44.5 ± 4.3 years old (range: 33-83 years old). A number of 34 women (39.08%) had axillary lymph node metastases at the pathological examination. The correlation between ultrasound and histological tumor size is direct, moderate in intensity and statistically significant (r=+0.481; p=0.001). The analysis of tumor ultrasound parameters indicated that only irregular tumor outline (p=0.014) and imprecise margins (p=0.016) were important for tumor grading, while orientation (p=0.357), echogenicity (p=0.264), posterior acoustic features (p=0.369), surrounding tissue appearance (p=0.973), calcifications (p=0.689), vascularity (p=0.411), vascular score (p=0.303) and perilesional edema (p=0.398) had no statistical significance. The tumor vascular score was predictive of lymph node metastases (p=0.023). Ultrasound evaluation of the axillary nodes is useful in estimating metastases. We had several cases with comparison between axillary lymph nodes ultrasound features and sentinel lymph node biopsy results. **Conclusions.** The ultrasound features of breast cancer and axillary lymph node seems to be promising tools in the predicting of nodal metastases, as well as for informing patients about the type of surgical intervention proposed.

Keywords: ultrasound, breast cancer, diagnosis

Turner syndrome diagnosed in the first trimester of pregnancy – case report

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It is estimated that about 6% of all pregnancies in a year are affected by a genetic condition. This percentage amounts to approximately 7.9 million pregnancies out of a total of approximately 131 million newborns annually. The incidence of Turner syndrome is 1/2500 births, being the only monosomal syndrome after which there is survival. The case presented in this paper is of a 27-year-old patient who presented a modified double test and who performed several additional investigations to establish a final genetic diagnosis.

Keywords: Turner syndrome, karyotyping, cytogenetics

Prenatal diagnosis of fetal thoracic hemangioma – case report

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Introduction. Hemangiomas are benign vascular tumors frequently diagnosed in the neonatal period. Their incidence among newborns is between 1% and 3%. Studies in the literature show that they are more common among female newborns as well as in premature or low birth weight newborns. Although most hemangiomas are small and do not present risks, there are still situations when they can generate important complications due to their number and size. **Materials and method.** The aim of this paper is to present an isolated case of fetal thoracic wall hemangioma diagnosed at 30 weeks of gestation, its evolution and management, as well as data from the literature on this pathology. We present a case of fetal thoracic wall hemangioma diagnosed following a routine consultation performed at 30 weeks of gestation. The fetus was evaluated on a Voluson E8 and E10 ultrasound. The previous evaluation took place at 26 weeks of gestation and no fetal abnormalities were revealed at that time. The ultrasound evaluation revealed, at the level of the right hemithorax, a voluminous image with dimensions of approximately 6 cm/4 cm developed from the thoracic wall to the outside, inhomogeneous with intense Doppler signal. Fetal MRI was performed in order to evaluate the extension in the depth of the thoracic wall of the tumor formation, as well as in order to evaluate its nature. The evolution of the case was unfavorable, with the increase in size of the tumor formation and the appearance of fetal heart failure highlighted by ultrasound by cardiomegaly. The patient gave birth at 36 weeks of gestation by caesarean section due to fetal complications. **Results and conclusions.** Although the current trend is to diagnose fetal abnormalities in the first trimester of pregnancy, ultrasound evaluation in the second and third trimesters of pregnancy is an important tool in assessing fetal development and in diagnosing fetal abnormalities that appear late in pregnancy. Although hemangioma is considered a benign tumor, its evolution can be associated with fetal complications that can endanger the fetus' life.

Keywords: fetal ultrasound, hemangioma, prenatal

Pre- and post-therapeutic ultrasound evaluation in the treatment of fibroids by embolization of the uterine arteries

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Introduction. Uterine artery embolization (UAE) is a conservative, minimally invasive therapeutic method that has earned a well-deserved place in the therapeutic arsenal of uterine fibroids. The judicious selection of cases, in strict accordance with the indications, ensures a favorable prognosis for this intervention. In this approach, ultrasound is a first-line investigation both in the pre-therapeutic evaluation and in the dynamic follow-up after treatment. It correctly detects the location and volume of fibroids. Color Doppler examination brings useful information about the vascularization of fibroids and about the hemodynamic changes after the procedure. **Methodology.** Transvaginal ultrasound examination before the UAE evaluates the size and structure of leiomyomas and after the UAE evaluates the changes in size and structure. Color Doppler made before and after UAE allows the comparison of blood flows in uterine arteries and fibroids before and at different intervals after surgery. **Results.** The ultrasound study of the cases led to the outline of some observations: hypervascularized fibroids tend to shrink more in size after treatment than hypovascularized ones. The higher the resistance index (IR) immediately after embolization, the more the size of the fibroid will be reduced three months after treatment. In this context, color Doppler examination can be considered a prognostic index. **Conclusions.** Ultrasound examination is a simple, safe, noninvasive method of pre- and post-therapeutic evaluation in the treatment of fibroids in the UAE.

Keywords: uterine arteries embolization, ultrasound in leiomyomas

The outcome of structural heart defects diagnosed in the first trimester of pregnancy

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Introduction. We present the results of a detailed protocol of fetal heart examination in the first trimester, in a fetal medicine unit in Bucharest, Romania. **Methodology.** Since October 2009, in the "Filantropia" Clinical Hospital of Obstetrics and Gynecology, Bucharest, we have systematically assessed pregnancies at 11-14 weeks to screen for aneuploidies and for major fetal structural defects. The fetal anatomy examination protocol included the detailed assessment of the fetal heart. This was performed using the same principles as for the second-trimester examination, in the entire cohort. **Results.** Our population consisted of 7693 patients and 7816 embryos. The protocol for the ultrasound evaluation of the fetal heart was completed for 7597 embryos (97.2%). The outcome is known for 6912 cases (90.9%). We diagnosed 39 heart defects – 30 in the first trimester, seven in the second trimester, two postnatally. Twenty of the 39 heart defects were isolated cardiac malformations. Twelve of the isolated heart defects were diagnosed in the first trimester. The sensitivity of the first-trimester ultrasound in identifying major heart defects was 76.92%. The overall survival in cases of isolated congenital heart disease diagnosed in the first trimester was significantly lower than the survival in the cases diagnosed in the second trimester. **Conclusions.** Many (76.92%) of the significant heart defects can be diagnosed by ultrasound examination, in the first trimester. Our study is an argument for developing the multidisciplinary approach needed for the management of early detected structural heart disease.

Keywords: heart defects, first trimester, ultrasound, protocol, outcome

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