years The gold standard diagnostic modality for uterine fibroids appears to be gray-scale ultrasonography, with magnetic resonance imaging being a close second option in complex clinical circumstances.

In a study investigating the relationship between ultrasound appearance, blood flow, and angiogenic gene expression in fibroids (F), perifibroid (PM), and distant myometrial (DM) tissues. They hypothesized that angiogenic gene expression would be increased in tissues and participants that showed increased blood flow by Doppler ultrasound. The study was performed using Doppler ultrasound to measure blood flow prior to hysterectomy, with subsequent tissue samples from the F, PM, and DM being investigated for angiogenic gene expression. Overall, PM blood flow (measured as peak systolic velocity [PSV]) was higher than F blood flow, although significant heterogeneity was seen in vascularity and blood flow between different Fs and their surrounding myometrium. They did not find any correlation between PSV and any other clinical or molecular parameter in their study.

KÖ-34 [15:15]

Gestasyonel trofoblastik hastalıklar ve Doppler USG

Ateş Karateke

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Gestasyonel trofoblastik hastalıklar (GTH), plasental koryonik villuslardan kaynaklanan tümörlerdir. Ultrason incelemesi, semptomları olan hastalarda tanıya yardımcı olması açısından standart uygulama haline gelmiştir. Vajinal kanaması ve hızlı uterus büyümesi olan, β-hCG değerleri belirgin olarak yüksek hastalarda GTH'dan şüphelenilir. Ayrıca, hiperemezis, anemi, preeklampsi ve hipertiroidizm de eşlik edebilir. Pelvik ultrason, tipik olarak uterin kaviteyi dolduran, kistik komponentli, solid ve hiperekoik kitle gösterir. Teka lutein kistlerinin varlığı, tanıyı kuvvetlendirir. Doppler incelemesinde, kitle çevresinde düşük rezistanslı, yüksek sistolik ve diastolik frekanslarda ve yüksek hızlarda akım saptanır. Düşük dirençli arteriyel akım, myometriuma uzanıyorsa, invazyondan şüphelenilir.

İnvazif molar gebelikte, trofoblastlar, hipervaskularite gösterir. Uterin spiral arterler, genişlemiş alanları doğrudan besler. Düşük dirençli ve yüksek hızlı fonksiyonel arteriovenöz şantlar, anormal uterin hipervaskulariteyi oluşturur. Rezistiv indeks (RI), 0.5 veya altındadır (normali: 0.7). Tepe sistolik indeks ya da en yüksek hız, 50 cm/sn'den fazladır.

Sonuç olarak, GTH'da belirgin yüksek β-hCG seviyeleri ve USG tanıyı büyük ölçüde sağlar. Doppler, bu tanıyı konfirme etmede yardımcı olabilir. Bunun yanında, invaziv hastalığın tanınması, tedavi etkinliğinin değerlendirilmesi, rekürensin saptanması, Doppler ile mümkündür.

KÖ-35 [16:00]

Ultrasonographic markers of aneuploidy in second trimester

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Chromosomal abnormalities occur in 0.1% to 0.2% of live births, and the most common clinically significant aneuploidy among live-born infants is Down syndrome (trisomy 21). Other sonographically detectable aneuploidies include trisomy 13, 18, monosomy X, and triploidy. Second-trimester ultrasound scan detects 2 types of sonographic markers suggestive of aneuploidy. Markers for major fetal structural abnormalities comprise the first type; the second type of markers are known as "soft markers" of aneuploidy. These latter markers are nonspecific, often transient, and can be readily detected during the second-trimester ultrasound. The most commonly studied soft markers of aneuploidy include a thickened nuchal fold, rhizomelic limb shortening, mild fetal hydronephrosis, echogenic bowel, and echogenic intracardiac focus and choroid plexus cyst. There is a great deal of interest in the ultrasound detection of aneuploidy, as evidenced by the large number of publications in the literature on this topic.

Unfortunately, studies evaluating the significance of the soft markers of aneuploidy vary widely and show contradictory results. we review the most common ultrasonographic soft markers used to screen aneuploidy and discuss ultrasonographic technique and measurement criteria for the detection of soft markers. We also review the clinical relevance of soft markers to aneuploidy risk assessment and evidence-based strategies for the management of affected pregnancies with each of these markers in light of current literature.

KÖ-36 [16:30]

Umbilical cord abnormalities

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The umbilical cord develops in close association with the amnion and serves a vital function during intrauterine fetal development. Evaluation of umbilical cord entities and function is an integral part of every sonographic examination. It includes cord measurements (diameter of cord vessels as well as estimation of cord length,), analysis of cord anatomy (cord coiling, vessel number), estimations of cord abnormalities capable of impending blood flow and cord function (Cord Doppler).

Abnormalities of the umbilical cord may be related to cord length, diameter, cord coiling, vessel number, cord insertion, anomaly capable of impeding blood flow, funic presentation, and umbilical cord stricture.

Normal cord has 3 vessels: two arteries, one vein encased in Wharton jelly. Two arteries carry deoxygenated blood to placenta, one vein brings oxygenated blood back to fetus. Umbilical vein is the only conduit for oxygenated blood to return to fetus. Umbilical cord is is fully formed by 9 weeks gestation when cord is already coiled, where arteries coil around vein. Abdominal wall insertion is surrounded by intact skin while placental insertion normally centered on placental disc. Clinically, hypo-coiling has been associated with fetal demise, while hyper-coiling is correlated to fetal-growth restriction and intrapartum fetal acidosis and asphyxia. Both entity (hypo & hyper coiling) have been linked to trisomies and single umbilical artery.

Antenatal determination of cord length has technical limitations therefore evaluation of cord diameter use as a predictive fetal marker. The lean umbilical cords have been associated with poor fetal growth while large-diameter cords have been associated with macrosomia. The clinical utility of this parameter is still unclear.

Single umbilical artery (SUA) or two vessel cord is associated with growth restriction but if additional anomalies are present then risk for aneuploidy increases. The incidence is increased considerably in women with diabetes mellitus, epilepsy, preeclampsia, antepartum hemorrhage, oligohydramnios or hydramnios. Imaging findings have free loop of cord with 2 vessels seen best on cross section where only one UA is adjacent to fetal bladder. In more than 70% left UA is absent. In addition SUA is bigger than normal UA, almost 15% develop IUGR but are not coupled with trisomy 21.

Umbilical cord cyst (UCC) is cyst associated with umbilical cord and may be: Umbilical cord pseudocyst, Allantoic cyst, Urachal cyst, or Omphalomesenteric duct cyst. By definitions it is cyst or cysts associated with umbilical cord with paraxial location (in 60% eccentrically) where umbilical cord vessels are not displaced. It may be seen anywhere along length of cord, with thin walled cyst or cysts, usually anechoic with 2% prevalence. Most often it is transient finding usually as pseudo cysts. However multiple UCC are with increased risk of anomalies and aneuploidy If UCC is near fetal end of umbilical cord it should look at fetal bladder. Allantoic cysts can grow. In different diagnosis UCC may be similar with normal yolk sac or umbilical cord aneurysm or mucoid or cystic degeneration of Wharton jelly or embryonic duct remnants. It has excellent prognosis if transient. Single UCC has better prognosis than multiple UCC. In addition single umbilical cord cysts found in the first trimester tend to resolve completely, whereas multiple cysts may indicate miscarriage or aneuploidy (T18 and T13).

Umbilical cord aneurisms may be 1) Umbilical vein varix or 2) Umbilical artery aneurysm.

Umbilical vein varix is seen as focal dilatation of umbilical vein larger than 9 mm in diameter or larger than 50% of intrahepatic portion of umbilical vein. Best diagnostic clue for UV varix: is cyst-like space in upper abdomen with venous flow on Doppler. Umbilical vein varix in free floating loops of cord is much harder to see. UV varix is usually intra-abdominal but extrahepatic. It may also occur in free-floating loops of cord. Umbilical vein varix is usually seen as upper abdominal "cyst", oval or elongated shape, with thin walled, and anechoic.

It may occur in association with persistent right umbilical vein, may be large, must show continuity of "cyst" and presence of blood flow, usually runs between abdominal cord insertion site and inferior edge of liver with oblique orientation.

Umbilical artery aneurysm is dilatation of umbilical artery seen as sacular dilatation of umbilical artery with arterial flow. Umbilical artery aneurism is a rare congenital thinning of the vessel wall with diminished support from Wharton jelly. Aneurysm is usually near placental end of cord, where this support is absent.. UA aneurysm may have arteriovenous fistula to umbilical vein, usually associated with single umbilical artery, associated with multiple anomalies and trisomy 18. Cord "cyst" is near placental origin, wall may be calcified, it is much more rare than UV varix. Finaly it is arterial malformation not venous

Differential Diagnoses: Abdominal cysts (UVA), Umbilical cord cysts (UAV)

Pathology: UV varix may be first manifestation of abnormal venous pressure. Expanding varix in cord may compress umbilical artery

Clinical Issues: Karyotype if other anomalies present, close fetal monitoring, consider early delivery for UV varix.

Cord Entity Capable of Impeding Blood Flow are mechanical and vascular abnormalities of the umbilical cord, capable of impairing fetal–placental blood flow like knots, loops, funic presentation, umbilical cord stricture, hematoma, cysts, thrombosis, vessel dilatation

KÖ-37 [16:45]

Ultrasonic markers of fetal syndromes. Dysmorphic abnormalities detectable by ultrasound in the era of prenatal diagnosis

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From piece to a full puzzle

A dysmorphic feature is a difference of body structure. It can be an isolated finding, part of normal human variation in an