Kalp hızı

Anöploid fetusların kalp hızı paterni öploid fetuslara nazaran değişkenlik gösterebilir. Tr-13 ve monozomi X'de kalp hızının 95 persentil ve üzerinde olma olasılığı sırasıyla %69 ve %53'dür. Kalp hızı tr-21'de de artmakla beraber bu oran yalnızca %14'tür. Trizomi 18 ve triploidilerde bardikardi (kalp hızının 5. persentilin altında olması) sırasıyla %19 ve %36 oranında saptanmıştır.

Diğer bulgular

Minör marker olarak adlandırılan (koroid pleksus kisti >1.5 mm, ekojenik intrakardiak odak, hiperekojen barsak, hidronefroz- A-P çapı 1.5 mm) fetusa zararı olmayan fakat anöploidi riskini arttıran ultrasonografi bulgularıdır. İzole minör marker bulunması muhtemelen anöplodi riskini arttırmıyor görünmektedir. Bunun nedeni diğer minör markerların bulunmamasının oluşan riski dengelemesidir. Bazı ultrason bulguları ise hem fetal anatomik bozuluk olup hem de anöploidi riskini arttırır. Bunlara örnek olarak holoprozensefali (%50 tr-13 riski), diaframhernisi (%25 tr-18 riski), AVSD (%50 tr-21 riski), omfalosel (%25 tr-18 ve %10 tr-13 riski), megasistis (%10 tr-13 veya 18 riski) verilebilir.

KÖ-11 [14:30]

First trimester ultrasonographic findings for spina bifida

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Open spina bifida (OSB) is associated with the Arnold-Chiari II malformation, which is thought to be the consequence of leakage of cerebrospinal fluid into the amniotic cavity and hypotension in the subarachnoid spaces, leading to caudal displacement of the brain stem and obliteration of the cistern magna, was reported in 2009 to be recognized by first trimester ultrasound scan.

Anechoic area in the forth ventricle entitled as intracranial translucency by Chaoui et al. which is between two echogenic line anteriorly dorsal side of brainstem and posteriorly choroid plexus of the fourth ventricle at mid sagittal plane which is used for the examining nuchal translucency and nasal bone in normal fetuses. But, in their retrospective studies, they couldn't show this translucency area in few cases. Also prospective studies it is seen that same amount of fluid collection at this area on cases with open spina bifida but this collection is not clear as normal cases. Another first trimaster ultrasonographic finding for Spina Bifida is increased brainstem thickness due to replacing of brain towards to occipital bone and decreased distance between brainstem and occipital bone. In other words, ratio of brain stem thickness to brainstem – occipital bone distance is greater than 1. 2 Another one for Spina Bifida is shortening of the distance between occipital bone and Aquaductus Sylvius at axial plane. Also decrease of biparietal distance due to the decrease of cerebrospinal fluid amount and facial degree shortening are seen.

As a result, absence or decrease of intracranial translucency, ratio of brain stem thickness to brainstem – occipital bone distance is greater than 1, shortening of the distance between occipital bone and Aquaductus Sylvius at axial plane, decrease of biparietal distance and shortening of facial degree are the major first trimester ultrasonographic findings for fetuses with open Spina Bifida

KÖ-12 [16:45]

Ultrasound evaluation of anterior compartment defects

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Transperineal ultrasound (TPUS) is recognized nowadays as a gold standard technique in the diagnosis of urinary incontinence (UI) and voiding dysfunction (VD) and is a very useful method, which allows overall assessment of all anatomical structures (bladder, urethra, vaginal walls, anal canal and rectum) located between the posterior surface of the symphysis pubis and the ventral part of the sacral bone.

Urinary incontinence (UI) has been defined by the International Urogynecology Association and the International Continence Society as: "involuntary loss of urine". This condition is exceptionally common and more than 40% of women over 40 are estimated to experience UI. The most common types of UI are: 1) Stress Urinary Incontinence (SUI), defined as the involuntary loss of urine during increased abdominal pressure. It is thought to be due to a poorly functioning urethral sphincter muscle (intrinsic sphincter deficiency) or to hypermobility of the bladder neck or urethra; 2) Urge Urinary Incontinence (UUI), defined as the complaint of involuntary urinary leakage accompanied or immediately preceded by urgency, due to detrusor overactivity. The key to understanding female UI is an assessment of the anatomy and physiology of the lower urinary tract. Ultrasonography can provide essential information in the management of SUI. Tunn et al. recommended the measurement of the retrovesical angle with TPUS in patients with SUI. For quantitative evaluation of urethral mobility, the Valsalva maneuver is preferable to the cough test. In patients with SUI or UUI, funnelling of the internal urethral meatus may be observed on Valsalva and sometimes even at rest. Marked funnelling has been shown to be associated with poor urethral closure pressures. Schaer et al. reported that TPUS allowed the quantifica-

tion of depth and diameter of bladder neck dilation in incontinent women. Using Endovaginal Ultrasound (EVUS) to measure bladder wall thickness, Khullar et al. found that women with urinary symptoms and detrusor instability had significantly thicker bladder walls than women with SUI. Another study confirmed that bladder wall thickness greater than 5 mm at EVUS was a sensitive screening method for diagnosing detrusor instability in symptomatic women without outflow obstruction. TPUS and EVUS allow comprehensive evaluation of many abnormalities of the female urethra such as urethral diverticula, abscesses, tumors, and other urethral and paraurethral lesions. Multiplanar EVUS also gives the opportunity to assess the vascularity of the urethra which is believed to contribute to continence. Wieczorek et al. demonstrated that urethral vasculature is different along its entire length, with the mid-urethra, which includes the RS muscle, having the greatest intensity of perfusion. In females with SUI, urethral perfusion appeared significantly reduced.

Ultrasonography also allows the evaluation of tapes used in anti-incontinence surgery as improper positioning or dislodgement may be associated with failed surgery. Dietz et al. performed 3D-TPUS to assess the effectiveness of suburethral slings (TVT™, IVS™, Sparc™). All three tapes were visualized by ultrasound and showed comparable short term clinical and anatomical outcomes. Using 3D-TPUS, Ng et al. found that the midurethral position of the tension-free vaginal tape (TVT) may not be essential in restoring continence, a finding confirmed by Dietz et al., and that the TVT once inserted may not always remain in the midurethral position, likely due to shifting of the tape in the immediate postoperative period. Actual tape migration weeks, months or years after implantation, however, seems unlikely. It has been shown that over-elevation of the bladder neck after Burch colposuspension is associated with postoperative symptoms of the overactive bladder, and this is also observed after obstructive TVTs. Tighter placement of transobturator tapes seems to be associated with less UUI postoperatively, at least in the medium term.

Ultrasound is particularly useful in the assessment of postoperative voiding dysfunction. The minimal gap between implant and SP on maximal Valsalva seems the single most useful parameter in the postoperative evaluation of suburethral tapes as it is negatively associated with voiding dysfunction and positively associated with both SUI and UUI.

KÖ-13 [17:15]

Ultrasound evaluation of posterior compartment defects

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Ultrasonographic imaging is gaining a key role in the understanding of pelvic floor disorders of the posterior compartment. Endoanal and endorectal ultrasonography (EAUS/ERUS), endovaginal ultrasonography (EVUS) and dynamic transperineal US (DTPUS) are nowadays increasingly used in clinical practice for patients suffering from fecal incontinence, pelvic organs prolapse, obstructed defecation and anorectal sepsis. These non-invasive techniques not only provide a superior depiction of the pelvic anatomy but also yield unique dynamic information.

Recently, several new ultrasound techniques have been developed that could significantly improve the diagnostic value of ultrasonography (US) in this field. Three-dimensional (3D) and real-time four-dimensional (4D) imaging have been introduced into routine medical practice. These techniques overcome some of the difficulties and limitations associated with conventional two-dimensional (2D) US. Although 2D cross-sectional images may provide valuable information, it is often difficult to interpret the relationship between different pelvic floor structures because the 3D anatomy must be reconstructed mentally. Three-dimensional reconstructions may closely resemble the real 3D anatomy and can therefore significantly improve the assessment of normal and pathologic anatomy. Complex information on the exact location, extent, and relation of relevant pelvic structures can be displayed in a single 3D image. Interactive manipulation of the 3D data on the computer also increases the ability to assess critical details.

It seems likely that these new diagnostic tools will be increasingly used in the future to provide more detailed information on the morphology and function of examined organs, to achieve better accuracy in the diagnosis of complex diseases, to facilitate planning and monitoring of operations, and for surgical training.

EAUS has become the gold standard for the morphological assessment of the anal canal. It can differentiate between incontinent patients with intact anal sphincters and those with sphincter lesions (defects, scarring, thinning, thickening, and atrophy). Tears are defined by an interruption of the circumferential fibrillar echo texture. Scarring is characterized by loss of normal architecture, with an area of amorphous texture that usually has low reflectivity. The operator should identify if there is a combined lesion of the internal (IAS) and external anal sphincters (EAS) or if the lesion involves just one muscle. The number, circumferential (radial angle in degrees or in hours of the clock site) and longitudinal (proximal, distal or full length) extension of the defect should be also reported. In addition, 3D-EAUS allows to measure length, thickness, area of sphincter defect in the sagittal and coronal planes and volume of sphincter damage. EVUS can assess the levator ani muscle. Avulsion of the levator ani from the inferior pubic rami can be accurately evaluated and the levator ani gap measured. Levator ani damage