appropriate mid-sagittal section of the fetus and clear distinction of the nuchal region from the amniotic membrane in all the examined patients. This enabled us to obtain nuchal translucency measurements in 100% of cases. Rotation of the embryo and close scrutiny of the volume allowed systematic review of anatomic structures such as cord insertion, limb buds, cerebral cavities, stomach and bladder.

Conclusions: Three-dimensional ultrasound is advantageous for studying normal embryonic and/or fetal development, as well as providing information for families at risk for specific congenital anomalies by confirming normality. Three-dimensional ultrasound imaging complements pathologic and histological evaluation of the developing embryo rising a new term: 3D sonoembryology. It is expected that interesting data on fetal behavior will be collected with introduction of 4D sonography.

KÖ-21 [11:00]

Does fetal neurorisk mean neonatal neurorisk?

Milan Stanojevic

Department of Obstetrics and Gynecology, Neonatal Unit, Medical School University of Zagreb, Zagreb, Croatia

As the development of the brain is unique and continuing process throughout the gestation and after birth, it is expected that there is also continuity of fetal and neonatal movements which are the best functional indicator of developmental processes of the brain. Understanding the relation between fetal and infant behavior and developmental processes of the brain in different periods of gestation may make achievable the distinction between normal and abnormal brain development. Epidemiological studies revealed that many neurologically impaired infants belong to low risk population, which means that they seemed to be developmentally normal as fetuses and as infants, while later childhood neurological disability was diagnosed. Which methods of neurological assessment are available for that purpose? Prenatally we have not many possibilities for neurological assessment, while postnatally the repertoire of diagnostic possibilities is increasing. Among the postnatally available methods for neurological assessment, the most important are: clinical neurological assessment, neuroimaging methods, assessment of general movements (GMs) and combinations. Postnatal neurological assessment is probably easier to perform than prenatal, by using a simple and suitable for everyday work screening clinical test with good reliability, specificity and sensitivity.

Prechtl stated that spontaneous motility, as the expression of spontaneous neural activity, is a marker of brain proper or disturbed function. The observation of unstimulated fetus or infant which is the result of spontaneous behavior without sensory stimulation is the best method to assess its central nervous system capacity. All endogenously generated movement patterns from un-stimulated central nervous system could be observed as early as from the 7-8 weeks of postmenstrual age, with developing a reach repertoire of movements within the next two or three weeks, continuing to be present for 5 to 6 months postnatally. This remarkable fact of the continuity of endogenously generated activity from prenatal to postnatal life is the great opportunity to find out those high risk fetuses and infants in whom development of neurological impairment is emerging. Kurjak and coworkers conducted a study by 4D ultrasound and confirmed earlier findings made by 2D ultrasonography, that there is behavioral pattern continuity from prenatal to postnatal life. Although it is assumed that follow up of GMs is a better method for early detection of neurological impairment than neurological examination alone, there are data that even when GMs are impaired, the prediction of CP development is easy to make. Although assessment tools for fetuses and neonates are almost the same, one should be aware that environments in which assessment is taking place are different for fetuses and for neonates. On the other hand prenatal neurorisk does not indicate that it will continue to be present postanatally, and new neurorisks can develop postantally. These facts are complicating fetal neurological assessment for prediction of long term neurological outcome.

Are we approaching the era when there will be applicable neurological test for fetus and assessment of neonate will be just the continuation? This is still not easy question to answer, because even postnatally there are several neurological methods of evaluation, while in utero we are dealing with more complicated situation and less mature brain. Could neonatal assessment of neurologically impaired fetuses bring some new insights into their prenatal neurological status is still unclear and to be investigated. New scoring system for prenatal neurological assessment of the fetus proposed by Kurjak et al. gives some new possibilities to detect fetuses at high neurological risk, although it is obvious that dynamic and complicated process of functional CNS development is not easy to investigate.

KÖ-22 [11:15]

NTD ve fetal cerrahi seçenekleri

Ali Gedikbaşı

Kanuni Sultan Süleyman Eğitim ve Araştırma Hastanesi, Kadın Hastalıkları ve Doğum Kliniği, İstanbul

Miyelomeningosel, spina bifidanın en şiddetli formu olup yaklaşık olarak 2-3/1000 doğumda bir görülür. En önemli komplikasyonu hidrosefali gelişimi olup, daha sonraki süreçte ventrikülo-peritoneal şant konulmasını gerektirdiği gibi, motor ve kognitif defektlere, mesane ve barsak yaralanmalar ile emosyonel değişikliklere neden olur. Klinik bulguların şiddeti, miyelomeningoselin seviyesi ile ilişkili olup, yukarı

seviye lezyonlarda daha çok sinir etkilenip daha fazla defekt gelişimine neden olur. Miyelomeningoselli olarak doğan fetusların doğumu term süreçte gerçekleşir ve erken neonatal dönemde gerekli tedavisine başlanır.

Fetal cerrahi, anne ve fetusta gelişebilecek komplikasyonlar nedeniyle en son tedavi seçeneği olarak, fetal hayatı tehdit eden durumlarda düşünülür. Daha önce gerçekleştirilen hayvan deneylerinin sağladığı yararlar nedeniyle, lethal olmayan bu durumda da fetal cerrahi ameliyatlar gerçekleşmiştir. ABD'de MOM's çalışması olarak isimlendirilen çalışmada, kabul edilen 183 hasta randomize edilmiş ve antenatal operasyon ile postnatal operasyon seçenekleri arasında randomizasyon gerçekleştirilmiştir. Prenatal cerrahinin postpartum şant gereksinimi, motor fonksiyon indeksleri, beyin arka kısım herniasyonu (12. ayda), kendi başına yürüyebilme (30. ayda) durumlarının yenidoğan açısından yararlı olduğu görülmüştür. Buna karşın 30. ve 37. gebelik haftalarından önce erken doğumun, maternal pulmoner ödem gelişiminin, oligohidramnios gelişiminin, dekolman plasenta gelişiminin yine antenatal fetal cerrahi grupta istatistiksel olarak olumsuz olduğu görülmüştü. MOM's çalışması, yaygın prematürite komplikasyonları nedeniyle planlanandan önce sonlandırılmak zorunda kalınmıştır.

Laparoskopik yolla minimal invazif olarak gerçekleştirilen fetoskopik spina bifida cerrahilerinde Almanya ve yeni olarak Brezilya'dan örnekler var. Almanya'dan 51 gebelikte yapılan laparoskopik cerrahide girişim haftası 23. gebelik haftasıydı. Sadece bir fetusun kaybı girişime bağlı olarak prematürite nedeniyle gerçekleşti ve doğumların %90' ı 30.gebelik haftası sonrası, %49' u 34.gebelik haftası sonrası olarak gerçekleşti. Brezilya'da gerçekleştirilen 4 fetal girişimin 1 tanesinde uygun cerrahi yaklaşım sağlanamamış, diğer 3'ünde operasyon başarı ile tamamlanarak doğumların ortalama 32. gebelik haftasında gerçekleştiği görülmüştür. Bu girişimlerin hiçbirinde maternal komplikasyonlar görülmemiştir. Bu fetal girişimlerden sonra posterior fossada herniasyonu önlenerek hidrosefalus gelişimi önlenmiştir. Postnatal dönemde yenidoğanların ortalama %60' nda şant benzeri ek cerrahi girişime ilk 12 aylık sürede gerek kalmamıştır.

Sonuç olarak spina bifida tanısı konan gebeliklerde, gebelik terminasyonu önerilebileceği gibi, bunu kabul etmeyen ailelere, intrauterin fetal cerrahi önerilebilecek ek bir alternatif yöntemdir.

KÖ-23 [11:30]

Fetal posterior fossa fluid collections

V. D'Addario

Department of Obstetrics and Gynecology, University Medical School, Bari, Italy

The term "posterior fossa fluid collections" refers to different conditions characterized by the presence of "cystic" areas in the posterior fossa ruled out during the second trimester anomaly scan. They include:

- Dandy Walker malformation (DWM)
- Cerebellar vermis hypoplasia (CVH)
- Blake's pouch cyst (BPC)
- Megacisterna magna (MCM)
- Arachnoid cyst (AC)

The prognosis of these conditions is quite different: usually good in isolated BPC and MCM, frequently poor in DWM and CVH, depending on the cyst size in case of AC. For this reason the differential prenatal diagnosis is useful for a correct counseling.

The routine axial scan is can frequently be doubtful, particularly in differentiating DWM, CVH and BPC, which are all characterized by the presence of a median "cystic cleft" between the cerebellar hemispheres. In these case is extremely useful the midsagittal scan on the posterior fossa showing the brainstem and cerebellar vermis. This section allows evaluating the fourth ventricle, the shape and size of the vermis and its rotation in relation to the brainstem.

In DWM the vermis is severely hypoplasic and upward rotated; the posterior fossa is enlarged with high insertion of the tentorium.

In CVH the vermis is partially hypoplasic in its inferior area; it is slightly upward rotated; the size of the posterior fossa in normal as well as the insertion of the tentorium.

In BPC the vermis is normal with a slight upward rotation secondary to the posterior protrusion of a cystic dilatation of the forth ventricle, which is still not fenestred (Blake'pouch). The insertion of the tentorium is normal.

For the differential diagnosis the measurement of the angle between the vermis and the brainstem may be useful.

KÖ-24 [11:45]

Korteks anomalileri

Talat Umut Kutlu Dilek

Mersin Üniversitesi Tıp Fakültesi Kadın Hastalıkları ve Doğum Anabilim Dalı, Mersin

Fetal beyin; hücre proliferasyonu, nöronal migrasyon ve kortikal organizasyon şeklinde birbirini takip eden 3 basamakta gelişir. İkinci trimester ortalarında fetal beyin düz ve agyrik bir görünümdeyken, 20-35. gebelik haftaları arasında; kıvrımlı, gyrus ve sulkus yapılarını içeren nihai görünümüne kavuşmaya başlar. Bu süreç sırasında karşılaşılan iskemik, enfeksiyöz veya gelişimsel sorunlar anormal kortikal gelişime sebep olacaktır.

Kortikal gelişim problemleri nöronal migrasyon anomalilerinden kaynaklanır. Kortikal gelişim anomalileri arasında Şizense-