

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?**

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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 postnatally, and new neurorisks can develop postnatally. 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**

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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