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Fetal skeleton work-up in the prenatal management of Jarcho-Levin syndrome: an illustration of the recent technological advances

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Objective: To illustrate the recent technological advances in the field of fetal skeletal dysplasias.

Methods: Retrospective study of 2 recent cases: – a second intra-familial recurrence, where affected fetuses successively underwent standard X-Ray, first generation CT and for the last one three-dimensional MD-CT with MIP reconstruction; – a bichorial diamniotic twin pregnancy discordant for this syndrome.

Results: Both ultrasound and CT findings enabled the correct prenatal diagnosis of Jarcho-Levin syndrome. Besides, the most recent techniques allowed orthopedic surgeons to a better prenatal information to the parents and a more precise planning of post-natal management.

Conclusion: This very rare condition illustrates why, in most reference French centers, 3D MD-CT has replaced conventional X-Ray in the further evaluation of atypical and/or complex skeletal dysplasias.

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Reproductive function preservation in placenta previa accreta by uterine embolization after Cesarean section

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We describe a patient with a placenta previa in which we succeeded to manage conservatively with uterine embolization. A nuliparous patient was diagnosed in the first trimester as having a possible placenta previa-accreta. In the second trimester it was confirmed by using magnetic resonance imaging.

She underwent a Cesarean delivery at 38 weeks of gestation. The newborn weight was 2560g with Apgar scores of 9 and 10 at 1 and 5 min, respectively. Two hours after the abdominal closure, the patient had a heavy vaginal bleeding. She underwent a multiple blood transfusion. In order to preserve both the patient reproductive function and the uterus and also to control de bleeding an uterine embolization was done by using Gel-Foam guided by radiologic procedure. Few time after the procedure, the bleeding is gone. Pathologic placenta's examination revealed velamentous insertion of umbilical cord with membranous allantochorionic vessels and massive lacerations and avulsions of the basal plate consistent with the clinical diagnosis of placental accretism. This condition can be associated with massive blood loss at delivery. Prenatal diagnosis by imaging (ultrasound and magnetic resonance imaging) followed by planning of peripartum management by a multidisciplinary team, may help reduce morbidity and mortality. Women known to have placenta accreta should be delivered by Cesarean section. The majority of women with significant degrees of placenta accreta will require a hysterectomy. Good outcomes depend on prenatal diagnosis and Cesarean delivery before the membranes rupture. Prenatal diagnosis of placenta accreta is of importance because it reduces fetal and maternal morbidity as appropriate preoperative and perioperative procedures are possible. We are looking forward to knowing about the structural uterine integrity after the embolization to counseling new pregnancy.

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Antenatal diagnosis of CDH using ultrasound and magnetic resonance imaging (MRI) and prediction of neonatal outcome using lung : head ratio (LHR)

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Objectives: To compare USS findings with those of MRI and to examine the predictive value of these findings and LHR with neonatal outcome.

Methods: A retrospective case note analysis of all pregnancies with CDH from January 2000 – March 2006 ($n = 26$). MRI was performed in 21 cases (81%). Factors studied included gestation at diagnosis, fetal weight, apgars and antenatal steroid administration. USS and MRI findings included mediastinal shift and presence of stomach, bowel, liver and/or spleen in fetal thorax. In a subgroup ($n = 7$), LHR was calculated on USS at median gestation of 26 weeks (IQ range 21–29). Outcome measures included neonatal survival, CPR and ventilation requirements, need for surfactant, days of extra-corporeal membrane oxygenation (ECMO) required, gastro-esophageal reflux (GER) and day of discharge.

Results: There were no differences between USS and MRI findings studied. A trend towards an inverse relationship between ECMO requirements and antenatal steroid administration ($p = 0.07$), right lung volume at MRI ($r = -0.40$, $p = 0.08$) and LHR ($r = -0.72$, $p = 0.07$) was found. Shorter hospital stay was associated with increased right and left lung volumes at MRI ($r = -0.46$, $p = 0.07$ and $r = -0.58$, $p = 0.01$ respectively). Apgars at 1 and 5 minutes correlated with need for CPR at delivery ($r = -0.50$, $p = 0.01$ and $r = -0.55$, $p = 0.006$ respectively). Decreased LHR was associated with lower apgar scores at 1 and 5 minutes ($r = -0.84$, $p = 0.04$ and $r = -0.93$, $p = 0.008$ respectively). GER development was associated with reduced left lung volume ($r = -0.52$, $p = 0.04$).

Conclusions: In our cohort, antenatal CDH findings compare favorably between USS and MRI. Lung volume at MRI may be a good indicator of neonatal outcome based on ECMO requirements, day of discharge and GER. Preliminary data suggests that LHR may be a good predictor of neonatal outcome based on apgar scores and need for ECMO.

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Conservative versus extirpative management in case of placenta accreta: accuracy of ultrasound and MRI prenatal diagnosis has to be improved

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Objective: To evaluate ultrasound and MRI accuracy for prenatal diagnosis of placenta accreta, and their impact on per-partum management.

Methods: 21 patients at high risk for placenta accreta were retrospectively studied on a five past years' period: 15 had placenta praevia associated with Cesarean scar, 5 placenta praevia with endo-uterine surgical scar, and 1 had previous placenta accreta. All patients underwent ultrasound and MRI examination between 26 and 33 weeks' gestation. The following signs were researched at ultrasound examination: presence of placental vascular lacunae positive at color Doppler examination, loss of the clear space between the placenta and the myometrium, myometrium < 1 mm or absent, interruption of bladder border and protrusion of placenta within the bladder. Diagnosis of placenta accreta was confirmed per-partum if an absence of spontaneous delivery occurred. Per-partum management was studied in each case.

Results: Placenta was confirmed to be accreta in 15 cases. Values for sensibility (Sens), specificity (Spe), positive (PPV) and negative