Myelomeningocele Imaging  
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1. **What features distinguish myelomeningocele from other forms of spinal dysraphism that you might see on prenatal imaging?**
   
   A. It is a closed spinal dysraphism characterized by a placode interface that is external to the spinal dysraphic defect.  
   B. It is a closed spinal dysraphism characterized by a placode interface that is flush with the spinal dysraphic defect.  
   C. It is an open spinal dysraphism characterized by a placode that is external to the spinal dysraphic defect terminating upon the wall of a sac.  
   D. It is an open spinal dysraphism characterized by a placode that is flush with the spinal dysraphic defect.  

   **Correct Answer: C**  
   **Rationale:** Myelomeningocele is an open spinal dysraphism (ie, non-skin covered) that is characterized by a placode interface that is external to the spinal dysraphic defect without a lipoma.  

   **References:**  

2. **The MOMS trial showed which of the following outcomes in comparison with conventional operative repair?**
   
   A. Lower maternal morbidity  
   B. Lower rate of preterm deliveries  
   C. Fewer features of Chiari II malformation  
   D. No improvement in motor outcomes at 30 months  

   **Correct Answer: C**  
   **Rationale:** Fetal repair is associated with fewer and less severe features of Chiari II malformation and 50% reduction in need for shunting when compared to conventional postnatal repair.  

   **References:**  

Fetal Neck Masses  
*Beth M. Kline-Fath, MD*  
*Christopher I. Cassady, MD, FAAP*

3. **Which of the following imaging findings is least useful in differentiating a lymphatic malformation from a cervical teratoma?**
   
   A. Cysts  
   B. Vascularity  
   C. Infiltration  
   D. Calcification
Correct Answer: A
Rationale: Cysts can be present in both lymphatic malformations and teratomas, and their presence alone is therefore not helpful to differentiate lesion type.
Reference:

4. What is the added value of MRI over ultrasound in the evaluation of a fetal neck mass?
   A. Define vascularity
   B. Exclude spinal canal invasion
   C. Define the airway
   D. Exclude associated brain anomaly

Correct Answer: C
Rationale: The compression of the airway is only variably seen with ultrasound but reliably with MRI due to the high contrast of the technique. In terms of delivery planning, it is most important to protect and support the airway.
Reference:

Congenital Diaphragmatic Hernia Update
*Teresa Victoria, MD, PhD*
*Erika Rubesova, MD*

5. Which of the following MRI findings is associated with better outcome in patients with CDH:
   A. Herniation of the liver
   B. Presence of a hernia sac
   C. Stomach behind the heart
   D. Low lung volumes

Correct Answer: B
Rationale: Presence of hernia sac is associated with lower morbidity and possibly mortality. One theory is that the sac creates a physical barrier that restricts further herniation of the abdominal organs.
Reference:

6. The most commonly encountered congenital diaphragmatic hernia is:
   A. Left sided
   B. Right-sided
   C. Bilateral
   D. None of the above

Correct Answer: A
Rationale: Left-sided, for reasons not completely understood. The ratio is 85%, 13%, 2% for left, right and bilateral CDH.
References:
7. **Which therapy is no longer utilized in the treatment of CDH?**
   A. Emergent surgical repair  
   B. Fetal tracheal occlusion  
   C. Extra-corporeal membrane oxygenation  
   D. Non-surgical management  

**Correct Answer: A**  
**Rationale:** In the late 80’s CDH was felt to be the most urgent surgical emergency in the newborn. It was believed that the bowel was causing pulmonary compression and that emergently removing the bowel from the chest would improve the situation. Soon it was realized that emergent decompression was not optimal and that initial neonatal stabilization was optimal, followed by eventual repair.  
**Reference:**

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**Placental Imaging**  
*Brandon P. Brown, MD*  
*Maria F. Ladino-Torres, MD*

8. **Which two MR pulse sequences, when used in combination, are best for identifying placental vasculature on non-contrast MRI?**
   A. T1 spoiled GRE and SSFSE  
   B. T1 spoiled GRE and SSFP  
   C. SSFSE and SSFP  
   D. SSFSE and DWI  

**Correct Answer: C**  
**Rationale:** Combining these two common prenatal MR pulse sequences takes advantage of bright blood (SSFP) and dark blood (SSFSE) imaging properties to distinguish between hypointense signal from flow voids, and hypointense signal from other, non-vascular causes.  
**References:**

9. **Which of the following imaging findings shows the highest sensitivity and specificity for the diagnosis of invasive placenta/placenta accreta?**
   A. A thin, hypoechoic rim at the inner aspect of the myometrium  
   B. Multiple vascular lacunae within the placenta and abnormal uteroplacental vascularity on color Doppler imaging  
   C. Diffuse myometrial thinning  
   D. Increased placental thickening and heterogeneity
Correct Answer: B

Rationale: Abnormal intraplacental hypervascularity, lacunae, inseparable cotyledonal and intervillus circulations and tortuous vascularity with chaotic branching demonstrate highest sensitivity and specificity for invasive placenta/accreta.

References: