Fetal Evaluation of CNS Infections

David M. Mirsky, MD

1. Regarding TORCH infections, which is the most common source of intrauterine infection in the United States?
   A. Toxoplasmosis
   B. Rubella
   C. Cytomegalovirus
   D. Herpes Simplex Virus

Correct Answer: C

Rationale:
The most prevalent TORCH infection is CMV and can be seen in 0.6%-0.7% of all live births. 30,000-40,000 cases are encountered per year in the US.

Reference:

2. On the topic of Zika Virus, which statement is true?
   A. It kills neuroprogenitor cells and disrupts neuronal proliferation, migration, and differentiation, all of which slows brain growth.
   B. It remains a global health emergency as per the World Health Organization
   C. The most serious sequelae have been shown to occur when maternal infection happens later in pregnancy.
   D. Microcephaly is a relatively uncommon finding on imaging in patient’s infected by the virus.

Correct Answer: A

Rationale:
Zika Virus destroys neuroprogenitor cells and disrupts neuronal proliferation, migration, and differentiation, retarding brain growth.

References:
Cortical Dysplasias
Gregor J. Kasprian, MD

1. Which of the following statements regarding the ganglionic eminence is correct?
   A. The absence of the ganglionic eminence on MRI is always a sign of fetal brain malformations.
   B. A thickened ganglionic eminence is a normal variant at 20 gestational weeks
   C. The ganglionic eminence harbors future GABAergic interneuron
   D. The ganglionic eminence is a transient structure and irrelevant for cortical development

Correct Answer: C

Reference:

2. At 20 gestational weeks fetal MRI is most accurate in the detection of:
   A. Subependymal heterotopia
   B. Focal cortical dysplasia Palmini Type 1
   C. Lissencephaly Type 2
   D. Mitochondrial disorders

Correct Answer: C

Reference:

Fetal Evaluation of Midline CNS Anomalies
David M. Mirsky, MD

1. Septo-optic dysplasia is characterized by which of the following:
   A. Absent cavum septi pellucidi, incomplete cleavage of the forebrain, fused thalami, dorsal cyst
   B. Absent cavum septi pellucidi, small optic nerves, endocrine dysfunction
   C. Absent cavum septi pellucidi, agenesis of the corpus callosum, intracranial cysts, cerebellar anomalies
   D. Absent cavum septi pellucidi, no cortical mantle, macrocephaly

Correct Answer: B

Rationale:
Septo-optic dysplasia is defined as association of optic nerve hypoplasia, midline brain malformation, ± hypopituitarism.
2. Which statement regarding holoprosencephaly (HPE) spectrum is true:
   A. Lobar HPE represents the most extreme end of the spectrum
   B. Typically associated with unilateral clefting of the hard palate and hypertelorism of the eyes
   C. Severity of facial anomalies does not correlate with severity of brain findings
   D. Syntelencephaly is characterized by midline continuity of posterior frontal/parietal cortex with normal separation of frontal pole

Correct Answer: D

Rationale:
Syntelencephaly, the middle interhemispheric variant of holoprosencephaly, is characterized by interhemispheric cortical continuity usually in posterior frontal-parietal area. The anterior and posterior hemispheres are typically separated by the falx.

Reference: