Sampling the Placenta and Canned Comments

Beverly B. Rogers, MD
Children’s Healthcare of Atlanta and Emory University
USA
Fetal Surface, Membranes, and Cord

Membranes at point of “rupture”

5 cm from placental insertion

Parenchyma
Parenchyma
Canned Texts and the Scientific or Non-Scientific Basis
Severe inflammation of the chorionic plate vessels, especially when seen with fibrin thrombi, is associated with neurologic impairment of the infant.

Candidiasis

- Yellow spots on umbilical cord
- Peripheral umbilical funisitis with yeast and budding pseudohyphae, consistent with *Candida* spp.
- Necrotizing funisitis with organisms
- Necrotizing acute chorioamnionitis with organisms
Candidiasis

Comment

Candidiasis of the placenta is associated with preterm delivery and the infection is particularly severe in the very preterm infant. Term infants typically do not show signs of infection or, if signs are present, this typically manifests as a rash.


<table>
<thead>
<tr>
<th>Gest. Age</th>
<th>No.</th>
<th>Deaths</th>
<th>Cong. Candidiasis</th>
</tr>
</thead>
<tbody>
<tr>
<td>≤ 25 weeks</td>
<td>7</td>
<td>7 (100%)</td>
<td>1 (14%)</td>
</tr>
<tr>
<td>26 – 36 weeks</td>
<td>17</td>
<td>0</td>
<td>3 (18%)</td>
</tr>
<tr>
<td>≥ 37 weeks</td>
<td>8</td>
<td>0</td>
<td>1 (12%)</td>
</tr>
<tr>
<td>Total</td>
<td>32</td>
<td>7</td>
<td>5</td>
</tr>
</tbody>
</table>

32 cases of *Candida* funisitis over 13 years
Chronic Intervillositis

• Monomorphic infiltrate of maternal monocytes in the intervillous space
• Not focal or associated with chronic villitis

Comment

Chronic intervillositis has a high recurrence risk (80%) and has been associated with fetal demise in approximately 50% of cases. Treatment of subsequent pregnancies with aspirin and/or prednisolone has not been effective.

Contro E, et al. Chronic intervillositis of the placenta: A systematic review 6 series from 1987 – 2009 Data compiled on 69 cases All >14 weeks’ gestation
Chronic Deciduitis

- Diffuse lymphocytic inflammation in the basal decidua and/or
- Plasma cells in the decidua.
Chronic Deciduitis

Comment

The etiology of chronic deciduitis has been debated, some suggesting a reflection of chronic endometritis and others proposing an immune response by the mother at the fetal/maternal interface. It has been associated with some cases of idiopathic preterm labor.


- Chronic deciduitis definition
  - Plasma cells AND increased lymphocytes in decidua basalis
  - No chronic villitis

<table>
<thead>
<tr>
<th>Pathologic findings</th>
<th>Preterm labor (n=39)</th>
<th>Controls (n=39)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chronic Deciduitis</td>
<td>16</td>
<td>6</td>
</tr>
<tr>
<td>Acute Chorioamnionitis</td>
<td>18</td>
<td>7</td>
</tr>
</tbody>
</table>
Lymphoplasmacytic villitis is highly suggestive of cytomegalovirus infection, even in the absence of inclusions.

Clinical History of Abruption Without Pathologic Findings

There should be no villous stromal hemorrhage or blood clot with indentation of the parenchyma.

Comment

There is no evidence of placental abruption seen. The diagnosis of abruption is best made by the obstetrician at the time of delivery. Pathologic findings may be absent, as in this case.

From Don Singer, MD
Rounded Parenchymal Hematomas

- A hematoma in the placental parenchyma that is round in appearance. It is often associated with surrounding infarct.

Comment

The hematoma(s) seen in this placenta have a unique morphology, which is simply referred to as “rounded”. This type of hematoma is associated with pregnancies complicated by pregnancy induced hypertension or other maternal vascular disease.

Chorangiosis

• Greater than 10 vessel lumens in 10 terminal villi in ten 10X fields in 3 different placental locations.
Chorangiosis reflects generalized hypervascularity of the placenta. It’s prevalence is variable, but it is generally considered to be present in around 5% of placentas from pregnancies with pathologic evaluation of the placenta. It is hypothesized to reflect a fetal response to an hypoxic placental bed, due to its association with high altitude pregnancies, severe maternal anemia, mothers heterozygous for Factor V Leiden mutation, and maternal smoking. It is also common in placentas of mothers with diabetes, and so the possibility of having a component of overgrowth should be considered. Chorangiosis has also been described to have an increased frequency in stillbirths, twins, and malformation syndromes.

Multiple other articles and statements, and some degree of personal observation about overgrowth.
Villous Stromal Hemorrhage

- Fresh hemorrhage within the villous stroma. This is most often seen adjacent to the maternal surface.

Comment

Villous stromal hemorrhage is most commonly associated with placental abruption.
Comment

If the dividing membranes are diamnionic, monochorionic the twins are monozygotic (identical).

Comment

If the dividing membranes are diamnionic, dichorionic and the twins are the same sex, there is approximately a 15% chance they are identical.


Studied blood groups and placental enzymes.

45% Same sex, dichorionic
8% monozygotic
37% dizygotic
Comment
May ever day bring thoughts of placenta to your life.

B. Rogers – Personal Communication