Placental causes of stillbirth, ss13

Case 8

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• **Clinical history**

• First pregnancy: IUFD at 22 weeks GA with IUGR and anhydramnios.

• Second pregnancy: severe IUGR, TOP at 22 weeks GA.

• Third pregnancy: TOP at 17 5/7 weeks GA (treated with prednison and aspirin, started early in second trimester).

• Fourth pregnancy: missed abortion at 14 weeks GA.
Histology of first placenta
Placenta with normal weight
Umbilical cord 33 cm, CI 0.45
Histology of second placenta
Placenta with normal weight
Histology of third placenta

Placenta with low normal weight
Histology of first placenta
Histology of third placenta

CD68

CD3
Histology of fourth pregnancy

CD68
First fetus, IUFD 22 weeks GA
Weight and length normal for 18 weeks GA
Brain weight normal for GA
Brain : liver ratio 15 : 1

Translucent bones
Can also be seen with MPF
Second fetus, TOP 22 weeks GA
Weight and length normal for 17-18 weeks GA
Brain weight normal for GA
Brain : liver ratio 9 : 1
Recurrent chronic histiocytic intervillositis with intrauterine growth restriction, osteopenia, and fractures.
Crawford A et al.
Third fetus, TOP 17 5/7 weeks GA
Weight and length normal for 14 weeks GA
Brain weight normal for GA
Brain : liver ratio 7 : 1

Congenital anomalies:
Lunghypoplasia and bilateral cystic kidneys
Some form of autosomal recessive kidney disease
Diagnosis

- **Massive chronic histiocytic intervillositis (of unknown etiology).**

- Characterized by severe intervillous infiltrate of mononuclear cells (from maternal origin).

- First described by Labarrere and Mullen in 1987.

- Incidence 6-30 / 10,000 placenta in 2nd and 3rd trimester.
- Incidence 9.6 / 1000 up to 4.4 % in first trimester miscarriages.

- The histiocytic intervillositis can be combined with chronic villitis and / or with perivillous fibrin depositions in up to 30 % of cases.
Differential diagnosis

- **Massive chronic histiocytic intervillositis (of unknown etiology).**

- Infectious lesions
  - Malaria

- Listeriosis, CMV, Tularemia, Coccidiomycosis, Herpes, Psittacosis, Cryptococcosis, Blastomycosis
Outcome

- Massive chronic histiocytic intervillositis (of unknown etiology).

- 17 studies from 1987 – 2016, 286 patients 344 cases.

  - IUGR 56 %
  - Preterm birth 19 %
  - Fetal death 40 %
  - Recurrence risk 36 %

- Mechanism of origin: unknown

- Immuno-regulatory disturbance?
  - Increased presence of regulatory T-cells in decidua and intervillous space.

Expression of Toll-Like Receptors in Chronic Histiocytic Intervillositis of the Placenta.
Specific infiltration pattern of FOXP3+ regulatory T cells in chronic histiocytic intervillositis of unknown etiology.
Outcome

- **Massive chronic histiocytic intervillositis (of unknown etiology).**

- **Treatment**
  - Multicenter trial France: 24 women (age 34 ± 5 years) included in study.
  - Autoimmune disease present in seven (29%) cases.
  - 21 prospective pregnancies were treated with aspirin and/or corticosteroids.
  - Number of live births more frequent comparatively to previous obstetrical issues 16/24 versus 24/76.
  - No difference with respect to pregnancy outcome in different treatment regimens.
  - Prior history of IUFD and IUGR and presence of CHI in prospective placentas associated with failure to have a live birth.

- The number of live births increased from 32% to 67% in the treated pregnancies.
- Risk of preterm delivery remained at 30%.
- Recurrence rate of adverse pregnancy outcome persisted at 30% despite treatment intervention.

**Chronic histiocytic intervillositis: Outcome, associated diseases and treatment in a multicenter prospective study.** Arsène Mekinian et al. Autoimmunity, 2015; 48(1): 40–45
Thanks for the attention