G123 Extreme Shortness of Umbilical Cord Associated to Hematoma During Labor in Uncomplicated Pregnancy: A Fatal Case

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After attending this presentation, attendees will receive exhaustive information about an uncommon case of fatal hematoma at labor in a short umbilical cord fetus following an uncomplicated pregnancy. A complete forensic examination was performed by autopsy including histological examinations. The cause of death was established as acute asphyxia caused by acute traumatic vascular rupture of umbilical arteries as a consequence of the protracted cord traction during labor.

This presentation will impact the forensic science community by expanding awareness of with a fatal complication related to alterations of umbilical cord. In particular, the present case report will inform attendees about the risks associated with a short funiculus in an uncomplicated pregnancy and the significance of an accurate evaluation of umbilical cord morphology during the gestational period.

Case Presentation: A 26-year-old woman with an uncomplicated antenatal course, at 40 weeks of gestation + 2 days, was admitted to hospital for a scheduled induce labor. The contraction spontaneously started in the evening of the same day. The next day, at 2:00 a.m., the cervical dilation was 2cm and the fetal heartbeat resulted regular. At 3:20 a.m., the dilatation was 6cm and a significant deceleration of fetal heart tracing was recorded: at this point, the head of the fetus was fully engaged in the pelvis. On the bases of this risky circumstance, at 4:20 a.m. the dilation was complete. Oxytocin (10 IU, i.v. infusion) was administered and Kristeller procedure as well as episiotomy were performed. At 5:18 a.m., the woman delivered a dead female newborn (body weight: 3.610kg; body length: 55cm).

No significant findings at external examination of the fetus were found. The autopsy showed intense polyvisceral stasis. Funiculus disclosed a reduced length (27cm vs normal value of 35-80 m) and diameter (1cm vs normal value of 1.6cm); it showed the presence of multiple hematoma. Placenta, that was normally inserted, didn't reveal any significant alterations.

Histological examination of lung samples revealed the presence of fetal squames and debris in pulmonary vessels, acute emphysema, and pulmonary hemorrhages. The histopathological examination of the placenta didn't show anything of interest. Sections of umbilical cord demonstrated significant periarteriolar hemorrhage ascribable to the rupture of the umbilical vessels. The wall of arteries was characterized by manifest signs of traumatic dissection. Weigert's elastic stain and PAS were negative.

The cause of the death was indeed attributed to acute asphyxia dependent by the intrapartum traumatic rupture of arterial funiculus vessels. Strong traction of the short umbilical cord had a basic role in the pathogenesis of the fatal complication.

The present case report provides the evidence about the absence of alterations in the physiological development of the fetus as well as of complications for the pregnant in the antenatal period, despite the presence of a short umbilical cord. However, this morphological alteration resulted significantly involved in the newborn death, since the traction of short funiculus during the labor, caused the occurrence of a diffused hematoma through umbilical vessels tearing. These data suggest the opportunity of an accurate evaluation of the umbilical cord morphology during the gestational period using virtual reality system measurement also in pregnant without apparent complications.

Shortness and Hematoma of Umbilical Cord, Fetal Death, Autopsy

