

## Spontaneous umbilical cord hematoma as a clinical and forensic medical problem in case of suspected obstetrician's medical malpractice

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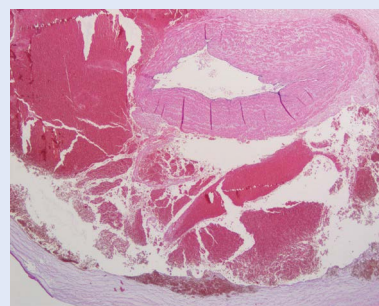
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We present a case from our forensic medical expertise practice of a spontaneous umbilical cord hematoma finding during the operational completion of a 41-week pregnancy due to an intrauterine fetal distress.

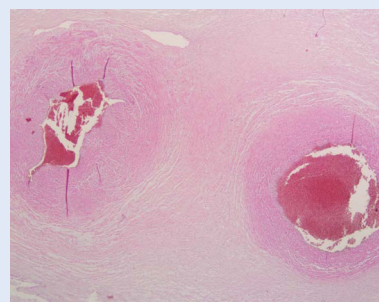
Spontaneous umbilical cord hematoma is rarely the cause of perinatal fetal death. It occurs in 1:5500 pregnancies. The most common risk factors are: infections, morphological anomalies, changes in the walls of vessels or prolapse and twisting of the umbilical cord. In many cases, the cause of hematoma within the umbilical cord remains unknown. Most often, this pathology occurs at the end of pregnancy in the perinatal period. The hematoma is most frequently located in the fetal end of umbilical cord. It can lead to the compression of umbilical vessels resulting in impaired blood flow, acute hypoxia, and in extremely unfavorable cases - fetal death. The diagnosis is most often made postnatally during the assessment of the umbilical cord and placenta.

An unigravida aged 25 was admitted to the obstetric pathology department 10 days after the expected date of delivery. The course of pregnancy was normal. On admission the fetus was in occipito longitudinal position, fetal heart sounds were rhythmical, 140 bpm. The patient was qualified for a preinduction of delivery by a Foley catheter. Due to incorrect CTG records (including fetal bradycardia up to 80 bpm), the decision was made to end the pregnancy by emergency cesarean section. A neonate, weighing 3950 g, 60 cm long, was born in a severe condition (1 point on the Apgar scale). Amniotic fluid was clean. The length of the umbilical cord was 39 cm. Within it, closer to the fetus, a dark-violet 15-cm section was found. After the delivery the complete placenta was sent to the pathomorphology department. In addition to the presence of an extravascular hematoma of unknown aetiology (Fig. 1), the studies showed no structural abnormalities in the structure of the umbilical cord within its stroma and wall (Fig. 2). Also within the placenta (Fig. 3) and fetal membranes (Fig. 4), apart from the changes typical to the time of pregnancy, no morphologically available pathology was found.

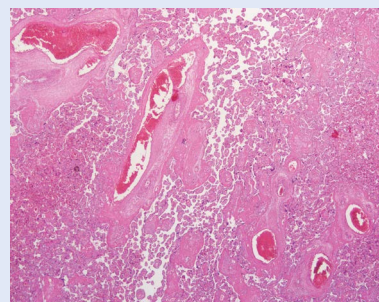
During the forensic medical assessment of this case, ordered by the court, one of the most significant problems was the inability to clearly determine the causes and timing of the above described umbilical cord hematoma. Therefore, in similar



**Figure 1.** Cross-section of the umbilical cord at the site of extravascular hematoma. Magnification 20x



**Figure 2.** Cross-section of the umbilical cord in the unchanged place. Magnification 20x



**Figure 3.** Placenta. Magnification 20x

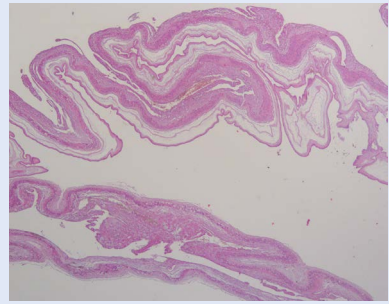
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cases with the image suggesting the possibility of the presence of a spontaneous umbilical cord hematoma, an accurate, intraoperative morphological description of the lesion, and full post-mortem and histopathological examination of placenta and fetus (in lethal cases) should be performed.



**Figure 4.** Fetal membranes. Magnification 20x