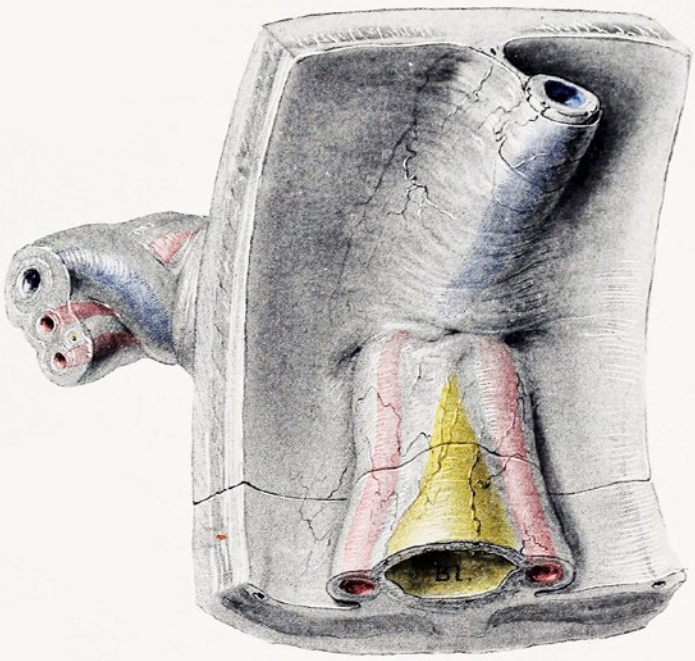
SWISS SOCIETY OF NEONATOLOGY

Spontaneous umbilical cord hematoma



October 2019

Berger TM, NEO FOR NAMIBIA – Helping Babies Survive (BTM), Lucerne, Switzerland

Title figure:
Intra-abdominal view of the umbilical region of a human embryo 6.5 cm in length (Source: Cullen TS. Embryology, anatomy, and diseases of the umbilicus together with diseases of the urachus. (1916) W. B. Saunders Company, Philadelphia And London).

INTRODUCTION

Umbilical cord abnormalities are not uncommon. They range from benign lesions, such as granulomas, to more serious lesions due to persistent remnants (omphalomesenteric duct, urachus), many of which can change the normal course of cord separation and may be associated with significant morbidities if unrecognized and left uncorrected (1). Knowledge of umbilical embryology helps to recognize and manage congenital disorders of the umbilical cord.

In this report, a term infant with a rare abnormality of the umbilical cord is presented. Depending on the time of its appearance it can be associated with significant morbidity and mortality or, alternatively, be entirely harmless.

This male infant was born to a 33-year-old G3/P3 at 40 0/7 weeks of gestation after an uncomplicated pregnancy. The mother was admitted to the labor ward with regular contractions. At a cervical dilatation of 8 cm, amniotomy was performed and meconium-stained amniotic fluid was noted. The CTG, however, remained reassuring. During extraction of the baby, a McRobert's maneuver combined with suprapubic pressure was performed twice to help release the infant's posterior (right) shoulder.

The infant adapted well with Apgar scores of 8, 9, and 9 at 1, 5, and 10 minutes, respectively. Arterial umbilical cord pH value was 7.24. His birth weight was 3845 g (P70), length 50 cm (P15) and head circumference 37 cm (P85). There was no evidence of brachial plexus injury.

When the baby was examined further, a nontender swelling and red to purplish discoloration of the umbilical cord was noted (Fig. 1), thought to represent bleeding into the Wharton's jelly. The 3-vessel cord had been clamped approximately 2.5 cm above the skin. The remainder of the physical exam was unremarkable.

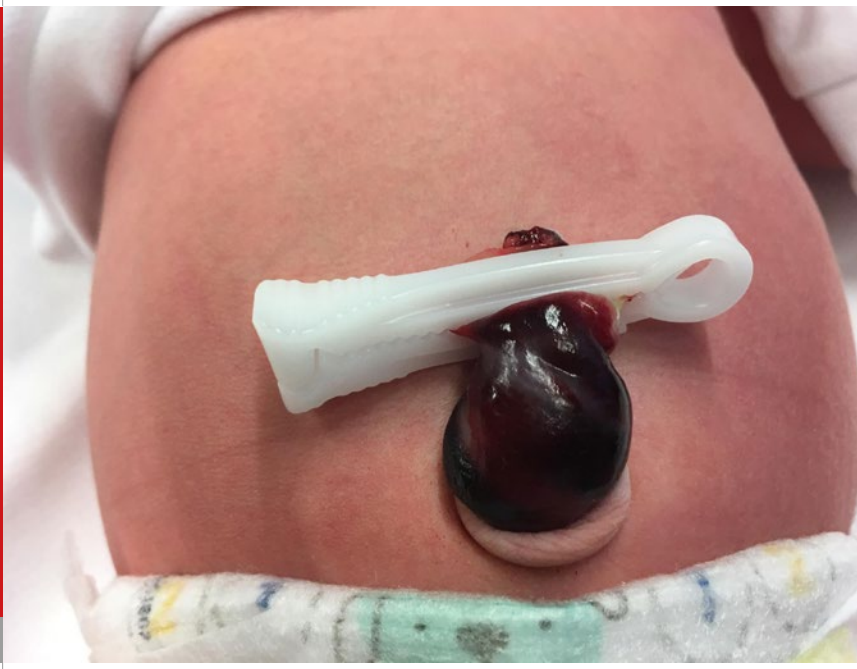


Fig. 1

Appearance of the clamped umbilical cord 4 hours after delivery: nontender, reddish swelling is obvious.

Of note, during the third stage of labor, the umbilical cord ruptured when cord traction was applied in an attempt to deliver the placenta. The placenta was subsequently manually removed in the operating room without difficulties. The cord had ruptured about 2 cm above the placental insertion point.

The baby remained asymptomatic and there was no clinical evidence of a bleeding disorder. The hematoma did not increase in size over the next 24 hours (Fig. 2, 3).

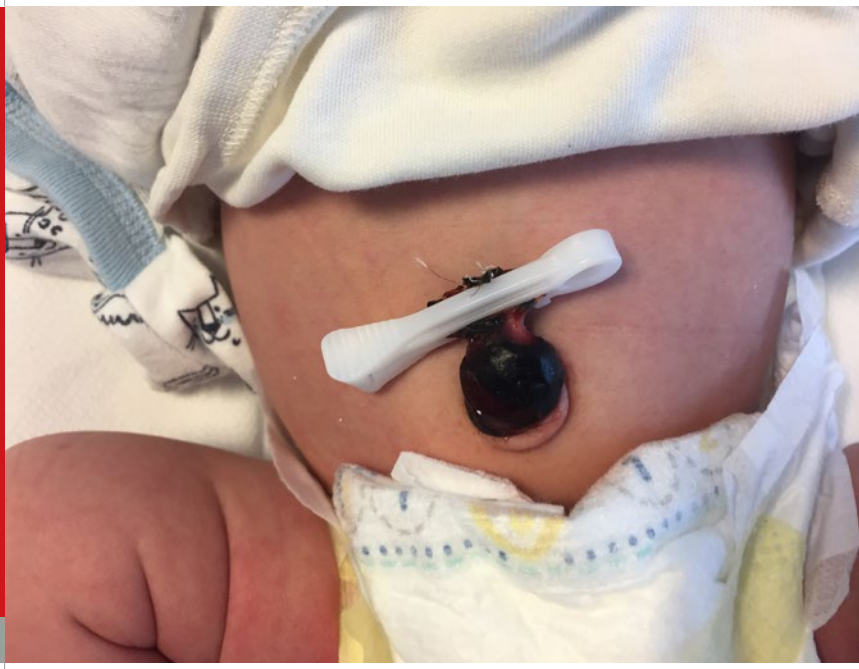


Fig. 2

Appearance of the umbilical cord at the age of 24 hours: no increase in size of the hematoma was noted.

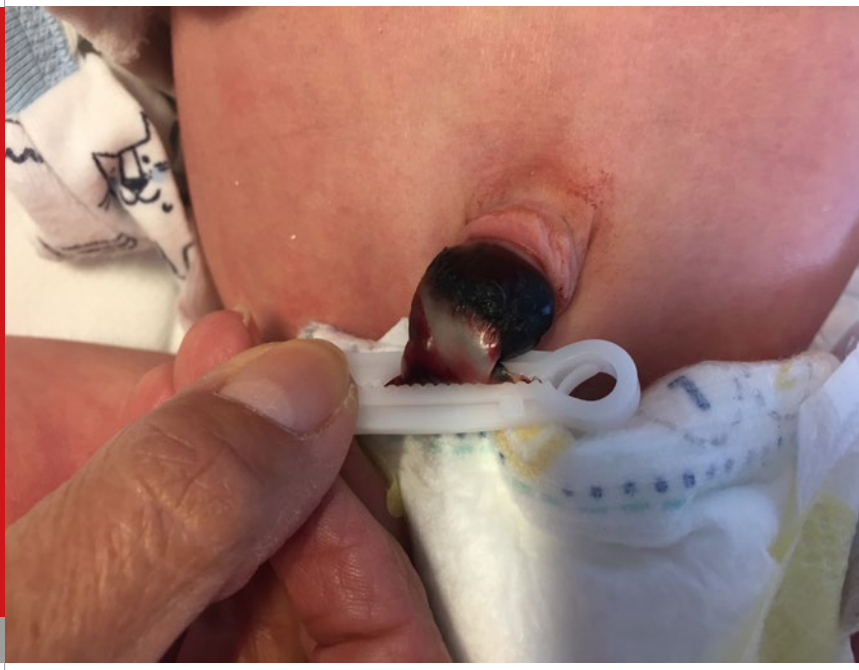


Fig. 3

Appearance of the umbilical cord at the age of 24 hours: normal drying and shrinking of the Wharton's jelly.

The baby was discharged on day of life 4; at this point, the cord had continued to dry and shrink normally (Fig. 4, 5). No excessive bleeding was noted when blood for the newborn screening (Guthrie test) was drawn. Ultimately, the cord fell off on day of life 10.

Fig. 4

Appearance of the umbilical cord on DOL 4: normal drying, no evidence of additional bleeding.

Fig. 5

Appearance of the umbilical cord on DOL 4: close-up view of the drying cord.

DISCUSSION

Spontaneous umbilical cord hematomas are a known but rare complication. The incidence is estimated around 1 in 5'500 to 11'000 deliveries with a perinatal loss rate of 50 % (2).

Spontaneous umbilical bleeding into the umbilical cord appears to result from rupture of the umbilical vein with extravasation of blood into the Wharton's jelly (3). The exact mechanisms involved are unclear, but several risk factors have been described: morphologic abnormalities of the umbilical cord (both in length and thickness), true knots, cord prolapse, traction or torsion, velamentous insertion, vessel wall abnormalities, umbilical cord cysts, maternal abdominal trauma, post-term pregnancy, infections (chorioamnionitis, funisitis), and deficiencies of Wharton's jelly (4, 5). In addition, and more obviously, the cord can be injured during amniocentesis, in utero transfusions or diagnostic cordocentesis (5). None of these risk factors were identified in the presented patient. However, the fact that the umbilical cord ruptured during cord traction to deliver the placenta is of interest and may indicate increased fragility.

When umbilical cord hematomas occur in utero, they can compromise feto-placental circulation by compressing the blood vessels within the umbilical cord and lead to perinatal asphyxia or even stillbirth in up to 50 % of cases. On the other hand, umbilical cord hematomas noted after an uneventful delivery usually

do not need any special care and can be left to fall of with the umbilical cord (3); in some instances, delayed separation of the cord has been reported (6).

Even though it has been suggested that bleeding disorders should be excluded (7), no such investigations were carried out in the presented patient since the family history was unremarkable and there were no other manifestations of a bleeding disorder.

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