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CASE REPORT

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Giant umbilical cord in a normal preterm infant: a case report and review of the literature

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Abstract

Background Giant umbilical cord, defined as a cord diameter of more than 5 cm, is an extremely rare malformation. There are few case reports of giant umbilical cord often associated with patent urachus duct or cystic malformation. These cases are usually managed by surgical excision and repair of patent urachus or cyst resection.

Case presentation We report the case of a 1-day-old Iranian boy with giant umbilical cord detected postnatally. The pregnancy course was uneventful, except for preterm premature rupture of the membrane and preterm delivery. There was no relevant family history. The patient was delivered by vaginal delivery with a good Apgar score. On clinical examination, the umbilical cord was very thick (about 6 cm in diameter), and huge fluctuating Wharton's jelly was observed. Other organs were normal. During the hospital stay, the patient did not develop any complications except borderline hyperbilirubinemia, which improved with conventional phototherapy. Since the umbilical cord had no discharge and was dried, the newborn was discharged with advice for cord drying care.

Conclusion The newborn was well, and the dried umbilical stump was detached after 32 days, leaving a granulomatous structure without discharge. The patient was followed up for 4.5 months and had no problems except delayed separation of the umbilical cord.

Keywords Umbilical cord anomaly, Giant umbilical cord, Thick umbilical cord, Case report

Background

Among umbilical cord malformations, the giant umbilical cord (GUC) is a very rare anomaly, which can be recognized by prenatal sonography or is obvious after birth. GUC is defined as a cord diameter of more than 5 cm [1], and the patent urachus duct is the most common simultaneous reported abnormality [2, 3]. The management of GUC and the need for investigation are challenging for neonatologists and pediatricians. Wildhaber *et al.* investigated the umbilical stump by histological examination, abdominal sonography, and cysto-urography [4]. These authors believed that surgery is usually required not for the condition itself but for the cause.

On the other hand, Young *et al.* stated that "most GUCs appear to be harmless, associated with normal urinary tract; hence, they may not warrant investigations" [1]. Here, we report the case of a male preterm infant with GUC, which was detected postnatally. Although the patient had delayed cord separation, the hospital course and follow-up were uneventful.

Case presentation

A male Iranian preterm infant was born at 32 weeks' gestation to a 28-year-old primigravida mother. The pregnancy course was uneventful, except for preterm premature (19 hours) rupture of the membrane and preterm delivery. The patient was delivered by vaginal delivery with Apgar scores of 9 and 10 at the first and fifth minutes after birth, respectively. GUC was detected

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management of GUC due to the absence of patent urachus and no sign of infection or discharge; thus, GUC seemed to be a pseudocyst. The umbilical cord shrank quickly after birth. True cord cysts are derived from the embryological remnants of the allantois, while pseudocysts arise from the liquefaction of Wharton's jelly and lack an epithelial lining [16]. Furthermore, in the presence of a true cyst and patent urachus, some data recommend its conservative management in newborns [17]. Table 1 presents some studies on GUC from 2000. We search on PubMed, Medline, and Google Scholar with the terms GUC, giant umbilical cord, umbilical cord, and umbilical urachal cyst. Articles with non-English language were excluded. In these cases, surgical treatment refers to patent urachus repair.

While most cases of GUC are associated with other malformations, our case was an isolated finding associated with normal outcomes without surgical intervention (Table 1).

Abbreviations

GUC	Giant umbilical cord
PPROM	Preterm premature rupture of the membrane
NICU	Neonatal intensive care unit

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Author contributions
FH, HB, and RO: drafted the manuscript, reviewed the literature, followed up with the patient, and edited the final manuscript. All authors read and approved the final manuscript.

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Availability of data and materials
Materials and data provided in this case study are available from the corresponding author upon reasonable request.

Declarations

Ethics approval and consent to participate
The publication of this case was approved by the ethics committee of Shiraz University of Medical Sciences.

Consent for publication
Written informed consent was obtained from the patient's legal guardian for the publication of this case report and any accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal.

Competing interests
The authors declare that they have no competing interests.

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