CASE REPORT

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A Newborn with Patent Omphalomesenteric Duct with Fecaloid Umbilical Drainage

Fekaloid Umblikal Drenajı Olan Patent Omfalomezenterik Kanal Tanılı Bir Yenidoğan

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Abstract

Umbilical anomalies are seen quite frequently in the neonatal period. Knowing the embryological development steps and anatomy is essential for accurate diagnosis and treatment in cases with umbilical pathology. A rare type of these anomalies is the patent omphalomesenteric duct, which can be diagnosed on the first day of life. It was observed that a term male newborn was hospitalized in our unit due to transient tachypnea of the newborn having umbilical yellow-green colored, foamy fecaloid drainage. The umbilical cord had a tissue compatible with cherry-colored mucosa. Following the examinations, the diagnosis of the patent omphalomesenteric duct was operated on and discharged with complete recovery. We wanted to report a rare neonatal omphalomesenteric duct anomaly among umbilical anomalies.

Keywords: Congenital anomaly, neonate, omphalomesenteric duct

Öz

Yenidoğan döneminde umblikal anomaliler oldukça sık görülmektedir. Göbek patolojili olgularda embriolojik gelişim basamaklarını ve anatomiyi bilmek doğru tanı ve tedavi için esastır. Bu anomalilerin nadir bir tipi patent omfalomezenterik kanal olup hayatın ilk gününde tanı koyulabilir. Yenidoğanın geçici taşipnesi nedeniyle ünitemize yatırılan miadında bir erkek bebeğin umbilikustan sarı-yeşil renkli, köpüklü fekaloid drenajı olduğu görüldü. Göbek kordonunda vişne renkli mukoza ile uyumlu doku görüntüsü mevcuttu. Tetkikleri sonucu patent omfalomezenterik kanal tanısı koyularak opere edildi. Umblikus anomalileri arasında nadir olarak görülen patent omfalomezenterik kanal anomalisi olgusunu bildirmek istedik.

Anahtar kelimeler: Konjenital anomali, omfalomezenterik kanal, yenidoğan

Introduction

The omphalomesenteric duct (OMD), also entitled the vitelline duct, is an embryonic form that connects the primitive yolk sac to the primitive midgut through the umbilical coelom and includes the omphalomesenteric vessels, which supply alimentation to the early growing embryo in advance of the placenta is initiated (1). It comes by obliteration at 5-9 weeks of gestation. The defect of this duct closing, seen in almost 2% of the population, can bring about varied OMD residues (2).

Complete or partial defect of the involution of the embryonic OMD can remain an abnormal connection between the umbilical cord and the gastrointestinal tract. It can lie behind several degrees of abnormalities that can result in drainages from the umbilicus, such as Meckel diverticulum (partly patent at the intestinal side), umbilical sinus (patent at the umbilical side), omphalic cyst (patent centric part), omphalomesenteric fistula (entirely patent duct) or an umbilical polyp (mucosal residue at umbilicus) (3).

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We wanted to report a rare neonatal OMD anomaly among umbilical anomalies diagnosed on the first day of life.

Case Report

As the fifth surviving neonate of a 33-year-old mother with non-consanguineous marriage, 2830 gr (10% p) 50 cm (50% p) height and 35 cm (50% p) head circumference born at term by cesarean section, was hospitalized in our unit considering transient tachypnea of the newborn. The newborn was delivered after an uncomplicated pregnancy, and the APGAR score was 7 at 1st minute, 8 at 5th minute and 9 at 10th minute. In the baby's physical examination, vital signs were stable, and bowel sounds were normoactive. The umbilical had a cherry-colored appearance compatible with the intestinal mucosa. The abdomen was non-tender, non distended, and without organomegaly.

The pediatric surgeon was consulted when a bubble, yellow-green-colored fecal drainage came from this orifice (Figure 1). With the preliminary diagnosis of omphalomesenteric fistula, radiopaque material using a 6 fr catheter was given through the fistula opening on the cord. The plain abdominal radiographs showed that the contrast material continued to pass through the intestine (Figure 2a, 2b). Blood count, acute phase reactants, infection markers, coagulation, and biochemical parameters were normal. Abdominal and cranial ultrasonographic imaging of additional anomalies revealed no pathological conditions. There was a distal meconium outlet. He was operated on with a patent OMD diagnosis, and interrelated intestinal parts were resected (Figure 3). No complications were observed in the postoperative follow-up, and the patient was discharged with complete recovery on the seventh postoperative day. The histopathology showed that the OMD was compatible with intestinal tissue.

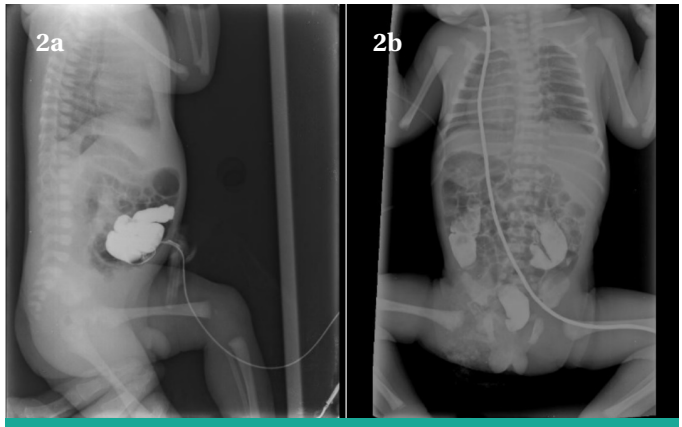

Figure 2a, 2b. The contrast material continued to pass through the intestine plain in plain abdominal radiographs

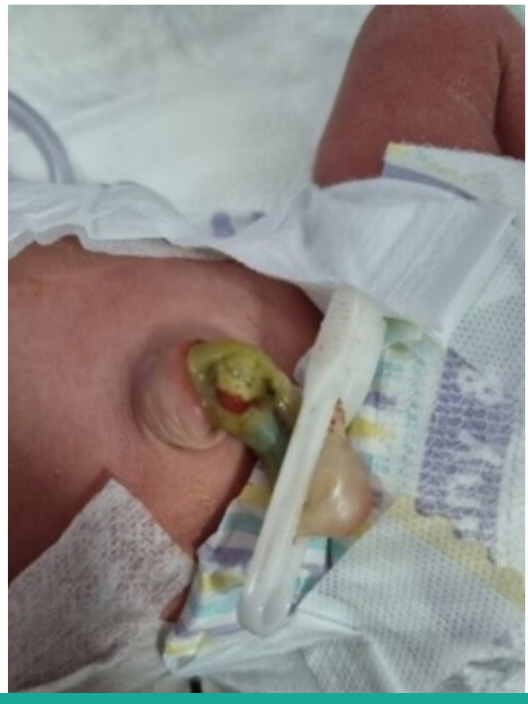

Figure 1. Fecaloid content from the umbilicus and cherry-colored duct orifice

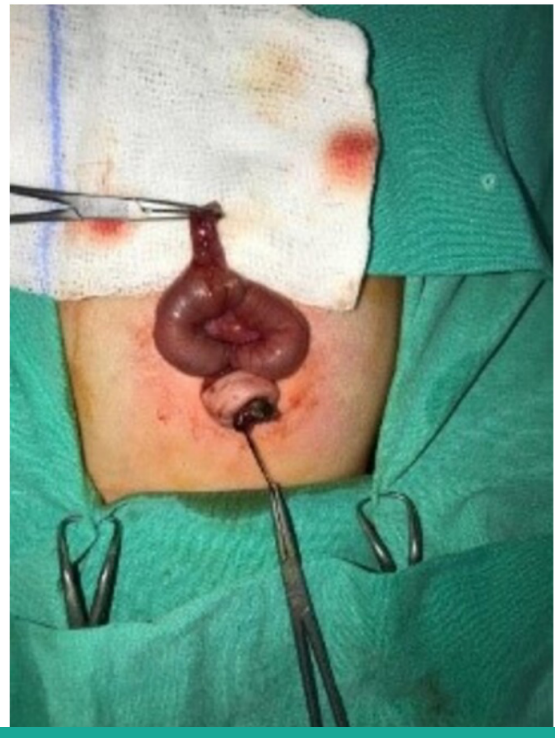

Figure 3. Peroperative patent omphalomesenteric duct

Discussion

Many variants of the OMD remnants have been declared in the literature. While Meckel diverticulum is the most widespread abnormality caused by the failure of OMD's resorption, patent OMD is unusual (4). A persistent OMD residue is pathological and rarely appears in adult age, but it is typically an anomaly type present in the pediatric population (2).

A 10-day-old girl newborn with patent OMD presented fecal umbilical discharge and was operated on with a semicircular periumbilical incision up to the abdominal cavity. The OMD, which was pursued to the intersection with the small intestine, was resected (5). At a 32-week preterm, the umbilical cord was sectioned for vein catheterization, resulting in watery content from a lumen. Following the aspiration of intestinal contents from the catheter inserted through this orifice, patent OMD was diagnosed and operated on (6). In 2021 Zvizdic et al. (7) declared a case of a newborn with a functional intestinal obstruction due to peritonitis produced by necrosis of iatrogenically clamped patent OMD in the congenital hernia into the umbilical cord. While very unusual, analogous complications have been noticed in the literature. Preventing unintentional gut injury in the course of cord cliping at delivery is possible with raised perception and experience concerning congenital hernia into the cord (7). After the detailed examinations of two newborns, one of which was examined with umbilical bleeding and one with omphalitis, it was reported that patent OMDs were revealed to be diagnosed (8). When a case of a patent OMD in an umbilical cord hernia is determined without delay, potential complications could be prevented with surgery (9).

The diagnosis of the patent OMD was made in a 6-week-old male newborn baby with a small volume of fluid and bile-stained small intestine with the appearance of umbilical drainage and a raspberry-sized mass under the umbilicus by detecting that the contrast agent administered with a catheter inserted into the stoma had entered the lumen of the small intestine (10). The simultaneous attendance of more than one abnormality of OMD in the same patient has also been declared (2). An adolescent with vomiting and intermittant periumbilical abdominal pain defined with coincident omphalomesenteric cyst and ileal diverticulum, inducing internal hernia and gut obstruction that was treated with surgery, has been presented recently (11). In the literature, although sporadic, adult cases that may be present with urachal anomalies (12) and the OMD remnants that may transform into cancerous tissue have also been reported (13).

As in our case, it is probable to diagnose the entity of the OMD in early life by attentive physical examination of all neonates at birth. In this newborn, we identify a four mm orifice on the umbilical cord enabling an early surgical approach of the newborn and interception of complications. A segmental intestine resection containing the fistula or a simple diverticulum excision is admissible. Assessment of the umbilical cord is a routine part of every newborn examination in the delivery room. Umbilical discharge should enhance the question of a patent OMD. Either any suspicious unnatural sight of the umbilical cord or any other malformations detected should be upwards assessed by a pediatric surgeon or neonatologist.

Ethics

Informed Consent: The consent form from the family of the case is obtained.

Peer-review: Internally and externally peer-reviewed.

Authorship Contributions

Concept: N.A., A.A., E.N.T., Design: N.A., A.A., E.N.T., Data Collection or Processing: N.A., A.A., S.K., E.Y., Analysis or Interpretation: N.A., A.A., S.K., O.T., Drafting Manuscript: E.Y., E.N.T., S.K., Critical Revision of Manuscript: N.A., A.A., K.A., O.T., Final Approval and Accountability: S.K., O.T., K.A., N.A., E.Y., A.A., E.N.T., Technical or Material Support: N.A., O.T., A.A., E.N.T., K.A., Writing: S.K., O.T., K.A., N.A., E.Y., A.A., E.N.T.

Conflict of Interest: No conflict of interest was declared by the authors.

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