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CASE REPORT

Double Trouble: Meckel's Diverticulum Coexisting with Exomphalos Minor in a Neonate

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ABSTRACT

Exomphalos, also known as omphalocele is a midline defect, in which abdominal contents are covered with peritoneal membrane and herniated into the umbilical cord. It is commonly associated with other developmental anomalies. In this case report we illustrate a case of an omphalocele in a neonate associated with Meckel's diverticulum, which is a rare occurrence. To our knowledge, this is the first reported case of Meckel's diverticulum in an exomphalos in Pakistan.

Key Words: *Exomphalos; Omphalocele; Meckel's diverticulum*

INTRODUCTION

Exomphalos is an anterior body wall, midline, covered defect. The membranous covering consists of peritoneum, amnion, and Wharton's jelly.[1] Rare anomalies such as Septo-Optic Dysplasia Complex, Ectopia Cordis and Edward Syndrome are associated with exomphalos but association of Meckel's Diverticulum is scarce.[2] The case report presents a case of newborn with an exomphalos that had Meckel's diverticulum inside it.

CASE REPORT

7 days old, male baby, weighting 3.06 kg, was brought to a tertiary care NICU at Karachi Pakistan with complain of a midline swelling connected to an umbilical cord with a dried umbilical stump (fig 1). Baby was delivered via a spontaneous vaginal delivery at the home at the term gestation with an immediate cry at the birth. A semi-transparent, thin-walled omphalocele sac was visible on his abdomen, which was not detected in prenatal ultrasonography. Baby was vitally stable at the presentation with an otherwise normal head to toe examination except a large omphalocele. Before the hospitalization baby was tolerating direct breastfeed and had passed meconium with in first few hours of life. He was also passing urine and stool regularly. The preoperative evaluation was done to rule out other associated anomalies.

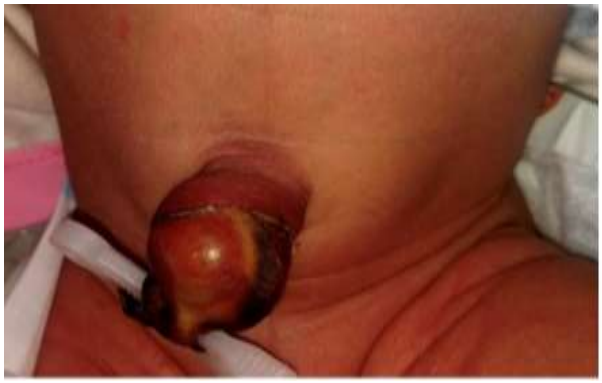

Fig 1: Neonate Presenting with Umbilical-Related Midline Swelling with dried umbilical stump

Exploratory laparotomy was performed with an infra umbilical incision and bands were released and gut was anatomized after wedge resection of meckel's diverticulum. Postoperative, baby was kept NPO for two days. On 3rd day, feed was gradually initiated and eventually full feed was allowed. Baby tolerated the feed well and passed stool and urine and so baby was discharged.

Operative findings: Meckel's diverticulum of 4 cm length was connected to umbilicus in an omphalocele. It was attached to ileum with no ulcer or perforation on mesenteric side. A separate blood supply of diverticulum was also identified.

Histological findings: Sections examined revealed wall of small intestine, exhibiting mucosa with intact villoglandular architecture lined by columnar epithelium and prominent goblet cells. Lamina propria showed dense lymphoplasmacytic inflammatory cells infiltrate along with few lymphoid follicles. Focal area showed ulceration with granulation tissue formation. Serosalaspect was edematous showing dilated and congested blood vessels. No heterotropic gastric mucosa or pancreatic tissue is seen.

DISCUSSION

Exomphalous is a midline anatomical defect. During the 5th to 7th week of fetal development, physiological herniation of intestines occurs into umbilical cord. The herniated portion of intestine draws back into the abdominal cavity during the 11th week.[3] Failure in return of the intestine back in abdominal cavity, results in an omphalocele.[4] Approximately 75% cases of omphalocele are associated with malformations including trisomy's, beckwith-weidmann syndrome, Marshall-Smith syndrome, CHARGE syndrome, Goltz syndrome, GI anomalies (Meckel's diverticulum, extrophy of cloacae, imperforate anus), extrophy of bladder and many others.[5] We presented a case of omphalocele with Meckel's diverticulum attached to umbilical cord. Incidence of such associations in a review study of 49 cases was 16%, while association was more common in omphalocele minor as compares to omphalocele major.[6] Meckel's diverticulum is embryological remnant of vitelline duct which is a connection between yolk sac and intestine during embryological life.[7] Meckel's diverticulum cannot be easily diagnosed prenatally on scans, unless there is marked dilation. At times, it may be found attached to umbilicus, like in our case, which may suggest that vitelline duct involutes late that may suggest a possibility explaining incomplete return of segment of intestine into the abdominal cavity.

All neonates having exomphalous either minor or major requires a detailed evaluation, specifically with echocardiography, ultrasound KUB, ultrasound brain and ultrasound abdomen as it is commonly associated with many developmental and congenital anomalies, especially other gastrointestinal and renal anomalies, and congenital heart diseases.

Conflict of interest: None

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