Patent Vitellointestinal Duct with Inverted Ileal Loop Prolapse with Strangulation at Birth in Preterm (34 Weeks): A Rare Presentation

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Abstract

Patent vitellointestinal duct (VID) can present to us in many variety of congenital intestinal malformations. Patient presented with either anomaly alone or complications secondary to the anomaly. Most common reported anomaly of residual vitelline duct is Meckel’s diverticulum with different presentations like bleeding, intestinal obstruction or diverticulitis. Prolapsed ileal loops through a patent VID is a rare presentation of the above. To date only fifteen cases of this presentation have been reported in the English medical literature but none reported in a premature newborn baby presenting with it from the time of birth, which to the best of our knowledge has not been reported before and therefore this the youngest reported case of its nature in the current English medical literature.

Keywords: Patent vitellointestinal duct; Preterm birth

Introduction

During the fifth to seventh week of gestation, midgut enlarges rapidly and as it becomes too large for the abdominal cavity, it herniates through the umbilical cord. The apex of the herniated midgut is continuous with VID and yolk sac. Superior mesenteric artery forms the axis of this herniated midgut. Around tenth week of gestation herniated midgut returns back into the peritoneal cavity [1,2]. During this complex developmental process several anomalies may occur because of the complexity of the process. Examples include bowel atresias and stenoses, abnormalities of the vitellointestinal duct (Meckel’s diverticulum, patent vitellointestinal duct (PVID), umbilical fistulas, umbilical sinus tracts, umbilical cysts and umbilical polyps), failure of ceecal descent, malrotation, malfixation, reversed bowel rotation and exomphalos [1-3]. VID is more common in males and mostly presents in first 28 days of life. This anomaly needs to be managed urgently to prevent gangrene.

Case Presentation

A male neonate delivered via LSCS (CAUSE: PREVIOUS LSCS) which was unbooked delivery 34 weeks with LMP-3/12/16 and EDD-10/9/17 with G4P3L3A1 was admitted in Yashoda Hospital, Ghaziabad, U.P. Baby was born at preterm. Antenatal scans were reported to be abnormal showing anterior wall depressed-pouch and part of intestine coming out from umbilicus. Birth weight was 2250 g and Apgar scores were 8/1, 9/1, 10/10. On examination at birth, newborn was having respiratory distress and grunting, so oxygen was started for an emergency laparotomy because of the prolapsed ileal loops. Examination under anaesthesia revealed that prolapsed bowel loops, so patent VID was resected and end to end anastomosis was done in 2 layers and patient shifted to NICU. Baby was extubated successfully after 2 hours of surgery and remained haemodynamically stable. Baby was started on TPN as baby was kept NPO. On day-2 of admission child had abdominal distension with bilious aspirates along with no stools.

Laboratory investigation including full hemogram, biochemical and coagulation profile was normal. The newborn was started on intravenous fluids, antibiotics intravenous ceotaxim (100 mg/kg/ day) and amikacin (15 mg/kg/day) and intramuscular vitamin K, 1 mg. Pediatric surgeon opinion was taken and patient was prepared for an emergency laparotomy because of the prolapsed ileal loops. Examination under anaesthesia revealed that prolapsed bowel loops, so patent VID was resected and end to end anastomosis was done in 2 layers and patient shifted to NICU. Baby was extubated successfully after 2 hours of surgery and remained haemodynamically stable. Baby was started on TPN as baby was kept NPO. On day-2 of admission child had abdominal distension with bilious aspirates along with no stools.

Figure 1: Vitellointestinal duct.
passed till then. So, baby received enema of normal saline 5ml twice daily for next 3 days, after which baby passed stools and abdominal distension settled and was started on feeds. Feeds were gradually increased and TPN was tapered off and stopped. On day 10 of hospital stay child was discharged from the hospital.

Discussion

Vitellointestinal duct (VID) or Omphalomesenteric duct connecting the primitive gut to the yolk sac usually obliterates around the seventh or eighth week of gestation. Failure to obliterate may lead to variety of congenital anomalies including: Meckel’s diverticulum, vitelline cord, umbilical sinus, enteric fistula and or haemorrhagic umbilical mass [1-4]. To date only 15 cases have been reported in the English medical literature [5-15]. Moreover, to the best of our knowledge there is no reported case of a new born presenting with patent VID with prolapsed (intussusceptions) of proximal and distal ileal loop. Antenatal diagnosis of a PVID anomaly can be confused with hernia of the umbilical cord or exomphalos minor which fails to obliterate on serial ultrasonography. Early diagnosis of PVID anomalies mandates surgeons to have a high index of suspicion in suspected cases. This would lead to prompt diagnosis and management of this rarity and save the neonate the morbidity. As noted in the previous case reports on the topic [1,2,15], outcome is highly dependent on time of presentation, early diagnosis, associated anomalies and the size of defect. When patients present late the approach must be more conservative with being a neonatal surgical emergency due to the associated morbidity.

Conclusion

Patent vitellointestinal duct with prolapsed (intussusceptions) of both proximal and distal ileal loop is a very rare occurrence together with being a neonatal surgical emergency due to the associated morbidity.

Acknowledgment

Consent for publication obtained from the parents of the patient.

References