Case Report:

Double Meckel's Diverticulum : A Very Rare Anomaly

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Abstract:

Meckel's diverticulum is the most common developmental anomaly of the gastrointestinal tract, affecting 1-3% of the general population. This anomaly is caused by incomplete obliteration of the omphalomesenteric duct during the 7th week of gestation and is located in the last meter of the ileum in 90% of patients. We report a case of a neonate who presented with history of persistent umbilical discharge since birth. On exploration there was evidence of patent vitello intestinal duct anomaly along with another proximal true diverticulum. Primary aim of this study is to present and share an extremely rare case of double Meckel's diverticulum found in neonatal age. And to the best of our knowledge is not yet reported in medical literature.

Key words: Neonate, Meckel's diverticulum, true double diverticulum, patent vitello-intestinal duct anomaly

Case report:

2.5 kg, 10 days male neonate with full term normal delivery admitted in hospital with complaints of passing flatus and greenish fluid from sinus like opening at umbilicus. There was no history of abdominal distension or vomiting. Baby was passing urine and also stool daily. There was no history of fever. All routine investigations were done, which were normal. Ultrasonography of abdomen revealed communication of small bowel loop with umbilical sinus suggesting of patent vitello intestinal duct anomaly.

With these reports exploratory laparotomy was planned. On exploration there was evidence of patent vitello intestinal duct anomaly with communicating umbilical sinus discharging intestinal contents. Another interesting finding was a second diverticulum arising from antimesenteric border few centimeter proximal to this diverticulum. Anatomically it was like another Meckels diverticulum. The segment of ileum involving patent vitello intestinal duct anomaly along with this second Meckel's diverticulum was excised. End to end ileoileal anastomosis was done with single layer PDS 5 0 suture material. Post operative course was uneventful. The histopathological examination revealed both macroscopic and microscopic evidence of patent vitello intestinal duct anomaly along with another true diverticulum which was labelled as double Meckels diverticulum. There was no evidence of any ectopic gastric or other mucosa in either diverticulum.

Discussion:

Embryologically during physiological herniation around 4-5 weeks of gestation development, the midgut returns into the peritoneal space in a counterclockwise rotation. During the return of the midgut, the umbilical cord becomes visible and is reorganized. The vitellointestinal duct (VID) and vessels involute and various layers of mesenchyme become fused and gradually transformed into Wharton's jelly which later becomes the matured umbilical cord.[1,5]
Any form of abnormal rotation or failure of obliteration of the intestinal duct during this stage of development could result in a wide range of congenital midgut anomalies, such as patent VID vitello-intestinal duct. The VID is a remnant of fetal vitelline duct that fails to obliterate resulting in a persistence of the communication between the midgut and the umbilicus.[5] Although Meckel’s diverticulum is the most common vitelline duct anomaly, a patent vitelline duct is the most common symptomatic presentation in developing countries.

About 4% of children with a Meckel’s diverticulum develop symptoms, and more than 60% of those who develop symptoms are younger than 2 years of age.[1] Meckel’s diverticulum is the most common developmental anomaly of the gastrointestinal tract, affecting 1-4% of the general population. It is usually an incidental finding during laparotomy for other causes; occasional complications are bleeding, obstruction, intussusception, diverticulitis and perforation. Up to 60% of Meckel’s diverticula harbor heterotopic mucosa (mostly gastric or pancreatic), neoplastic degeneration occurs in 1-5% of cases.[2,3] The male-to-female complication rate ratio is about 3:1.[7] Treatment options for the Meckel’s diverticulum and Patent VID are resection of the diverticulum/diverticulectomy (wedge resection) and anastomosis, segmental resection of ileum containing Meckel’s diverticulum and ileo-ileal anastomosis and can be achieved by open surgery or laparoscopically.[6]

Presence of double Meckels diverticulum, which is a true diverticulum is very rare anomaly. Also though it has been reported in adult literature[2,3] it’s presence in neonate along with patent VID is not found reported in literature.[4] We report this case in neonate as presence of patent vitello intestinal duct with discharging umbilical intestinal fistula along with double Meckels diverticulum which is a very rare anomaly, to the best of our knowledge not yet reported in medical literature.

1) Preoperative photograph:

2 Intra operative photograph

3. Specimen including patent vid with another true diverticulum
References:
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