Multiple vitello-intestinal duct anomalies in a pediatric patient: A rare case report

Abstract

The omphalomesenteric duct is an embryonic structure which connects the yolk sac to the midgut. The omphalomesenteric duct attenuates between the 5th and 9th week of gestation. Failure of the omphalomesenteric duct involution, either partial or complete, results in various anomalies including Meckel’s diverticulum, patent vitelline duct, fibrous band, sinus tract, umbilical polyp and cyst. Omphalomesenteric duct remnants are present in 2% of the population. The simultaneous presence of omphalomesenteric cyst, fibrous band and Meckel’s diverticulum is extremely rare. We have an 8-year-old child with a history of umbilical polyp and discharge in his infancy now presents with persistent pain abdomen. On laparotomy we found a Meckel’s diverticulum, an omphalomesenteric cyst and fibrous band. Multiple anomalies in the vitello-intestinal duct though very rare can cause clinical problem which need specific attention in terms of surgery.

Key words: Fibrous band, Meckel’s diverticulum, omphalomesenteric cyst, umbilical sinus, vitello-intestinal duct

INTRODUCTION

Vitello-intestinal duct is an embryonic structure providing communication from the yolk sac to the midgut during fetal development. Normally, it obliterates spontaneously and separates from the intestine between approximately the 5th and 9th weeks of gestation. Complete or partial failure of such closure may result in various lesions. Vitello-intestinal duct remnants include Meckel’s diverticulum, patent vitelline duct, fibrous band, sinus tract, umbilical polyp (mucosal remnant) and cyst. Diseases related to Vitello-intestinal duct remnants have seldom been reported. The simultaneous presence of sinus tract, omphalomesenteric cyst, fibrous ligament and Meckel’s diverticulum is very rare and reported only once in the literature.

CASE REPORT

We have an 8-year-old child with a history of umbilical polyp and discharge since birth. The serous discharge continued for 2 years and then gradually stopped without any specific intervention. But since last 2 years he had regular pain abdomen which did not subside after medication and thus referred to us. At presentation he did not have any umbilical sinus or any discharge. There was no associated congenital anomaly. Routine hematological, serum chemistry and stool examinations were quite normal. Ultrasonography showed an irregular thick-walled cystic lesion measuring 23 mm × 14 mm with a diverticulum like outpouching toward umbilicus and seen just beneath umbilicus. Multiple calcific echogenic debris are seen in the lumen. On laparotomy we found a Meckel’s diverticulum, an omphalomesenteric cyst and fibrous band [Figure 1]. We resect the portion of intestine along with the Meckel’s diverticulum, omphalomesenteric cyst and fibrous band and send it for histopathological examination. The tissue sections both of the Meckel’s diverticulum and an omphalomesenteric cyst revealed gastric mucosal heterotopias [Figures 2 and 3]. The patient is absolutely normal during his follow-up till now.

DISCUSSION

During fetal life, midgut communicates with the yolk sac through the vitello-intestinal duct. Between the 5th and 9th week of gestation, communication between the yolk sac and the intestine becomes...
2% of the population, are within 2 feet of ileo-caecal valve, are often 2 inches in length and contain two types of ectopic mucosa (gastric and pancreatic). Complications of Meckel's diverticulum are inflammation, perforation, hemorrhage, intestinal obstruction and rarely malignancy, which need surgical excision.

The vitello-intestinal duct may remain patent throughout its course, thus producing an enterocutaneous fistula between ileum and umbilicus. This condition presents with the passage of meconium and mucus from the umbilicus in the first few days of life. Due to the risk of volvus around the duct, these lesions are usually excised.

Persistence of distal end of the vitello-intestinal duct results in an umbilical polyp, which is a small excrecence of the ductal mucosa at the umbilicus. Such polyps resemble umbilical granuloma but don't disappear after silver nitrate application. Their presence sometimes is associated with umbilical sinus, which needs surgical excision.

Accumulation of mucus in a portion of the vitello-intestinal duct results in the formation of a cyst, which may be associated with umbilicus or intestine by fibrous band. Treatment is excision of the cyst and persistent vitello-intestinal duct.

Our patient had umbilical sinus in his infancy and at the presentation he had a Meckel's diverticulum, an omhalomesenteric cyst and a fibrous band as the remnant of vitello-intestinal duct. So it is a very rare and interesting case to be encountered. He was treated surgically with excision of the anomalous part along with a portion of intestine. Now in follow-up the patient is quite well.

CONCLUSION

Multiple anomalies in the vitello-intestinal duct though very rare can cause clinical problem which need specific attention in terms of surgery.

REFERENCES


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