



Case Report

Recanalisation of Multiple Vitellointestinal Duct after Small Bowel Obstruction in Adult- A Rare Case Presentation

Authors

**Pankaj Kumar Kannaujiya, Ganesh Chandra Yadav, Ankit Gupta
Parijat Suryavanshi**

King George's Medical University, Lucknow, U.P., India

Corresponding Author

Pankaj Kumar Kannaujiya

Add. – Room No. 302, Resident Hostel, KGMU, Lucknow, UP, India

Phone No.– 7054111162, Email: drpankajkannaujiya@gmail.com

Introduction

Patent vitello-intestinal duct is an unusual congenital disease, occurs in about 2% of the population¹, which may lead to small intestinal obstruction and other complications, like abdominal pain, intestinal haemorrhage and umbilical sinus, fistula or hernia which commonly occurs in children², it is rare in adults³. It is generally a disease of embryonic yolk stalk. Lining of patent vitello-intestinal duct usually contain intestinal epithelium but may contain heterotropic gastric mucosa⁴. Small bowel obstruction is a major cause lead to mortality and morbidity in patients⁵. We have reported an extremely rare case of recanalization of multiple obliterated vitello-intestinal duct after small bowel obstruction in an adult patient who presented to our side as a case of umbilical discharge.

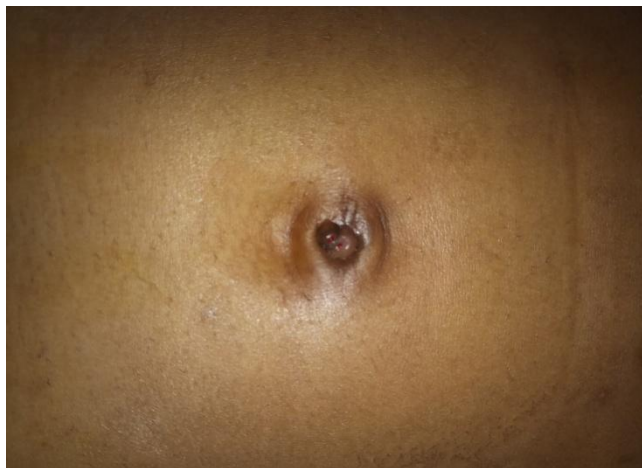
Case Presentation

A 18 years male patient visited to surgery emergency with complains of colicky abdominal

pain, distention of abdomen, multiple episodes of vomiting, not passes of flatus and faeces since 10 days, and faecal discharge from umbilicus since 5 days. No history of fever, tuberculosis, diabetes or hypertension. No history of any previous surgery. No significant family history. Patient given history of umbilical discharge since birth which stopped spontaneously after 2 years. On examination patients is ill looking with shrunken eye and dehydrated. Blood pressure 100/66 mm of Hg, pulse 100/min hypovolemic, respiratory rate 30/min, afebrile. Abdomen is grossly distended and hyper resonant with faecal discharge from umbilicus. Abdomen is tender and bowel sound are absent. Per rectal examination revealed empty and collapsed rectum with no faecal staining. Genitalia are normal, no congenital malformation present. All other system like respiratory, cardiovascular and central nervous system where normal. Hb is 12mg/dl, TLC – 18000 cells/mm³, LFT and KFT are within normal limits and patient is hypokalaemic. X ray shows multiple air fluid

level, with dilated jejunal loop and no air in colon and rectum. USG shows distended bowel loops. A diagnosis of acute intestinal obstruction was made.

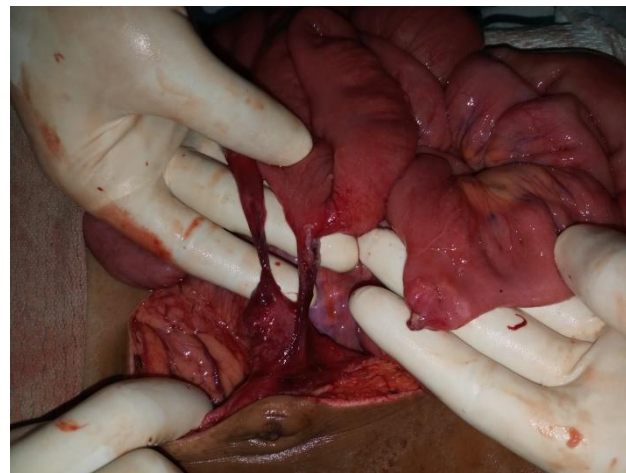
Patient resuscitated in emergency surgery department with iv fluids and iv antibiotics. Patient's laparotomy done in emergency OT, during laparotomy we found two fistulous tract from distal ileum ½ ft. apart to each other opening in umbilicus with a meckel's diverticulum in distal ileum distal to both fistula and stricture at ileo-caecal junction. Both fistulous tracts and meckel's diverticulum excised and wedge resection and anastomosis done, stricture at ileo-caecal junction removed with ileoascending resection and anastomosis. Post operative period was uneventful, patient discharged on 8th post operative day. Histopathology of tract and meckel's diverticulum was negative for malignancy or ectopic mucosa.



Pic Showing 2 Umbilical Sinus



Pic Showing 2 Fistulous tract from distal small bowel to umbilicus



Pic Showing 2 Fistulous tract from distal small bowel to umbilicus and meckel's diverticulum

Discussion

Our case report describes a rare case of Recanalisation of multiple vitellointestinal duct after small bowel obstruction in adult patient. Small bowel obstruction is common surgical problem of intestine⁵. Patients of small bowel obstruction generally present with pain in abdomen, vomiting, constipation, abdominal distension and tenderness. Commonest cause of mechanical small bowel obstruction is bowel adhesions associated with previous abdominal surgery⁶. Hernia, neoplasm, malrotation, tuberculosis and inflammatory bowel diseases are some other causes of small bowel obstruction. Early diagnosis and determining cause of intestinal obstruction is essential for proper treatment. Treatment protocol and timing of surgery is debatable but initial resuscitative measures remain same which not depend on etiology that is fluid and electrolyte replacement, restriction of oral intake, and nasogastric drainage. Broad-spectrum antibiotics should be given to prevent bacterial translocation. Decision regarding operability or conservative management is based on clinical grounds. Small bowel obstruction leading to recanalization of previously obliterated vitello intestinal duct in adult is rare disease with very few literatures.

Vitellointestinal tract embryologically comprises of three structures: the vitelline duct, artery, and vein. It joins primary yolk sac to midgut in fetal

life. It turns out to be a thin fibrous band that spontaneously obliterates and separates from the intestine at the 5th-10th week of gestation. Partial or complete failure of degeneration of vitellointestinal duct may lead to diverse type of congenital intestinal malformations comprising; Meckel's diverticulum, vitelline cord, umbilical sinus, enteric fistula and haemorrhagic umbilical granuloma. Whereas Meckel's diverticulum is the most common of these residual structures (2% of the population)^{1,2}. Patient of patent vitellointestinal duct present as umbilical discharge. The differential diagnosis of persistent umbilical discharge includes a patent urachus (a congenital communication on with the bladder), an incarcerated hernia, metastatic disease, tuberculosis or some other chronic infection. Appearance of discharge can helpful in diagnosis. Failure to treat patent vitellointestinal duct could result in having complications such as sepsis including omphalitis, periumbilical dermatitis, bleeding from intestinal mucosa and intestinal small bowel prolapsed and obstruction⁷.

Cause of obstruction in such case very difficult to determine. Plain X-ray abdomen and ultrasonography of abdomen are non specific for determining cause of obstruction⁸. Computerised Tomography Scan to some extent can diagnose vitellointestinal duct showing band between intestine and umbilicus. In our case Computerised Tomography Scan not done because patient is in frank obstruction and need laparotomy. Generally surgical excision of fistulous tract is sufficient. Intestinal resection is to be considered in cases of gangrenous bowel. Different studies had mentioned different approaches for treatment of patent vitellointestinal duct such as open surgical excision or laparoscopic approaches⁹. Laparoscopic approach can be instituted in uncomplicated patent vitellointestinal duct leading to lower morbidity and less hospital stay. Open laparotomy approach is also well known treatment¹⁰. Our patient undergone laparotomy, Both fistulous tracts and meckel's diverticulum excised and wedge resection and anastomosis

done, stricture at ileo-caecal junction removed with ileoascending resection and anastomosis.

Conclusion

Recanalisation of multiple vitellointestinal duct after small bowel obstruction in adult is very unusual presentation. It is very tough to diagnose it clinically. Surgeons should be aware of these kind of rare presentations of disease for better patient outcome.

References

1. F. Sawada, R. Yoshimura, K. Ito, K. Nakamura, H. Nawata, K. Mizumoto, et al., Adult case of an omphalomesenteric cyst resected by laparoscopic-assisted surgery, *World J. Gastroenterol.* 12 (5) (2006) 825.
2. D.W. Vane, K.W. West, J.L. Grosfeld, Vitelline duct anomalies: experience with 217 childhood cases, *Arch. Surg.* 122 (5) (1987) 542–547.
3. H. Markogiannakis, D. Theodorou, K.G. Toutouzas, P. Drimousis, S.G. Panoussopoulos, S. Katsaragakis, Persistent omphalomesenteric duct causing small bowel obstruction in an adult, *World J. Gastroenterol.* 13 (15) (2007) 2258.
4. Johnson, L.B., Renner, G., Jr. Peptic ulcer of Meckel's diverticulum: A report of two cases and a review of literature. *Surg., Gynec. & obst.* 59: 198, 1934.
5. G. Miller, J. Boman, I. Shrier, P.H. Gordon, Natural history of patients with adhesive small bowel obstruction, *Br. J. Surg.* 87 (9) (2000) 1240–1247.
6. G. McEntee, D. Pender, D. Mulvin, M. McCullough, S. Naeeder, S. Farah, et al., Current spectrum of intestinal obstruction, *Br. J. Surg.* 74 (11) (1987) 976–980.
7. Yamada T, Seiki Y, Ueda M et al. Patent Omphalomesenteric Duct; A Case Report and Review of Japanese Literature. *Asia Oceania Journal of Obstetrics & Gynaecology.* 1989; 15:229-236.

8. E.L. Dames, E.S.M. Hamouda, Radiologic Imaging in Meckel Diverticulum Complications, J. Med. Ultrasound. 23 (3) (2015) 133–141.
9. L.J. Bueno, S.A. Serralta, R.M. Planeéis, G.F.Dobón,P.F.Ibáñez,R.R.Rodero, Intestinal obstruction caused by omphalomesenteric duct remnant: usefulness of laparoscopy, Rev. Espanola Enfermedades Dig. Organ. Soc. Espanola Patol Dig. 95 (10) (2003) 736–738.
10. P.M. Lassen, M.J. Harris, W.S. Kearse Jr., L.R. Argueso, Laparoscopic management of incidentally noted omphalomesenteric duct remnant, J. Endourol. 8 (1) (1994) 49–51.