



CASE SERIES

Mesodiverticular Band of Meckel's Diverticulum Causing Small Intestinal Obstruction in Littre Hernia

Joe Nepram,¹ Kiratpal Singh Brar,¹ Dhiraj Kumar,² Sharad Syangden,³ Mahesh Kumar,³ Jashanpreet Singh,¹ Ghaiyoor Ahmad,¹ Diwakar Kumar,¹ Shahnawaz Alam,¹ Hibah Niyaz,¹ Akash Kumar¹ and Kaushik Bhattacharya^{4,*}

¹Post Graduate, Department of Surgery, Mata Gujri Memorial Medical College and LSK Hospital, Kishanganj - 855107, Bihar, India

²Professor, Department of Surgery, Mata Gujri Memorial Medical College and LSK Hospital, Kishanganj - 855107, Bihar, India

³Assistant Professor, Department of Surgery, Mata Gujri Memorial Medical College and LSK Hospital, Kishanganj - 855107, Bihar, India

⁴Associate Professor, Department of Surgery, Mata Gujri Memorial Medical College and LSK Hospital, Kishanganj - 855107, Bihar, India

Accepted: 10-April-2024 / Published Online 07-June-2024

Abstract

Mesodiverticular band associated with Meckel's diverticulum can lead to surgical emergencies like intestinal obstruction or volvulus and may prove fatal as this pathology is quite rare, it may escape the clinical diagnosis. This band needs to be excised during emergent laparotomy along with Meckel's diverticulectomy. A high level of clinical suspicion and surgical acumen is required to manage this rare condition and have an uneventful recovery of the patient.

Keywords: Meckel's diverticulum, Littre Hernia, Mesodiverticular band, Acute intestinal obstruction

*Corresponding author: Kaushik Bhattacharya
Email: kbhattacharya10@yahoo.com

Case Series

Case 1 - A 45-year-old male presented in the emergency department with features of acute intestinal obstruction with right-sided irreducible inguinoscrotal swelling of 10 cm X 5 cm size of gradual onset of 6 months duration. There was no cough impulse seen over the swelling. All the clinical investigations were normal, and the X-ray abdomen and ultrasound abdomen suggested features of intestinal obstruction due to dilated small bowel loops. With a provisional diagnosis of intestinal obstruction patient underwent exploratory laparotomy through the para-inguinal incision and a Meckel's diverticulum (MD) with a band constructing the ileum was seen in the hernial sac with features of obstruction. Because of Meckel's diverticulum in the inguinal hernial sac, this diagnosis of Littre's hernia was made. There was also a long mesodiverticular band attached from

the tip of MD around the ileum forming a constricting ring with proximal dilated bowel loops, extending up to the base of the mesentery (Figure 1). Release of the mesodiverticular band along with Meckel's diverticulectomy done. The postoperative procedure was uneventful, and on the fifth day after the operation, the patient was released in a stable condition. The resected specimen was non-significant, and no ectopic or malignant pathology was reported.

Case 2 - A 79-year-old female presented with severe pain abdomen with lower abdominal distension with a history of constipation for 5 days. X Ray abdomen and Ultrasound abdomen gave a provisional diagnosis of bowel obstruction. On exploratory laparotomy, a mesodiverticular band was seen attaching from the MD to the mesentery. Resection of the band was done and the patient recovered smoothly in the postoperative period (Figure 2).



Figure 1. Meckel's diverticulum with Mesodiverticular band causing constriction of ileum



Figure 2. Mesodiverticular band being excised

Discussion

Though MD is the most common congenital anomaly of the intestinal tract with a reported incidence of 0.6%-4% in the literature, the incidence of Littre's hernia is an even more extremely rare condition, found in only 1% of all cases of MD. Till date, the literature has reported only about 50 cases over 300 years [1]. The protocol for surgical indication for intervention in MD is the removal of all incidentally discovered diverticula if they meet the following criteria: age <50 years, male gender, diverticulum length size more than 2 cm, broad based thickened diverticulum, fibrous bands attached to the diverticulum and histopathology specimen showing ectopic or abnormal tissue [2]. This case is also rare and interesting as there was a long mesodiverticular band causing intestinal

obstruction in Littre's hernia which has not been reported before in the literature. Mesodiverticular band is embryologically a persistent vitelline artery that would supply the Meckel's diverticulum and this embryologic band extends from the adjacent mesentery to the tip of the MD creating a bridge through which bowel loops may be internally herniated or get entangled to develop acute intestinal obstruction. Studies have shown a high mortality rate of MD associated with mesodiverticular band which demands the surgical team to have a high level of clinical suspicion and intervene immediately without any delay to prevent any life-threatening complications [3]. Preoperative diagnosis of mesodiverticular band being the etiopathology causing intestinal obstruction is quite challenging and only an

expert radiologist can diagnose this pathology with either an ultrasound or CT scan abdomen. Mesodiverticular band has also been associated with causing Meckel's diverticulum volvulus which again is a surgical emergency [4].

In conclusion, the combination of Meckel's diverticulum with mesodiverticular band causing intestinal obstruction, especially in Littre's hernia should be diagnosed and managed with the highest level of surgical skill and expertise as such cases may lead to fatal catastrophe if managed casually. Every surgeon should be aware of this rare diagnosis in his clinical practice to avoid any type of negligence.

Conflicts of interest

The authors declares that they do not have conflict of interest.

Funding

No funding was received for conducting this study.

References

1. Usman A, Rashid MH, Ghaffar U, Farooque U, Shabbir A. Littre's Hernia: A Rare Intraoperative Finding. *Cureus*. 2020 Oct 20;12(10):e11065. doi: 10.7759/cureus.11065.
2. Kuru S, Kismet K. Meckel's diverticulum: clinical features, diagnosis and management. *Rev Esp Enferm Dig*. 2018 Nov;110(11):726-732. doi: 10.17235/reed.2018.5628/2018.
3. Vork JC, Kristensen IB. Meckel's diverticulum and intestinal obstruction--report of a fatal case. *Forensic Sci Int*. 2003 Dec 17;138(1-3):114-5. doi: 10.1016/j.forsciint.2003.08.013.
4. Zieliński M, Kaczor P, Jarczyk G, Jackowski M. Small bowel segment with Meckel's diverticulum volvulus related to short mesodiverticular band: a case report. *J Med Case Rep*. 2023 Mar 25;17(1):109. doi: 10.1186/s13256-023-03844-x.