Incarcerated umbilical Littre's hernia at the trocar site of a previous laparoscopic surgical procedure

M Bailon-Cuadrado, M Rodriguez-Lopez, JI Blanco-Alvarez, PL Rodriguez-Vielba

Rio Hortega University Hospital, Valladolid, Spain

ABSTRACT

INTRODUCTION Prevalence of Littre's hernia (protrusion of a Meckel's diverticulum through an opening in the abdominal wall) is very low, and Littre's hernias found in an umbilical site are uncommon. Even rarer are cases of an incarcerated hernia resulting in a surgical emergency. Trocar-site hernias are a relatively common complication after laparoscopic cholecystectomy that develop in association with insertion of wide trocars (usually at the umbilical port).

CASE HISTORY A 63-year-old female with a history of obesity, diabetes mellitus, hypertension, laparoscopic cholecystectomy and open hysterectomy arrived at hospital complaining of acute umbilical pain but with no other symptoms or fever. A painful mass observed was believed to be an incarcerated umbilical hernia at a trocar site used in previous laparoscopic surgery. Emergency surgery was undertaken: the opening of the hernia sac revealed a Meckel's diverticulum within it. The Meckel's diverticulum was resected using a stapler, followed by herniorrhaphy and hernioplasty. Postoperative recovery was uneventful.

CONCLUSION An incarcerated umbilical Littre's hernia at a laparoscopic trocar site has not been reported before. To avoid this complication, we agree with the numerous authors who recommend closure of trocar sites of width ≥ 10 mm

KEYWORDS

Meckel's diverticulum – Littre's hernia – Trocar-site hernia

Accepted 11 October 2015; published online xxx

CORRESPONDENCE TO

Martin Bailon-Cuadrado, E: martin.bc1988@gmail.com

Meckel's diverticulum (MD) constitutes the most common abdominal congenital abnormality (found in 1–3 % of the general population); form of the omphalomesenteric duct remnant. MD involves all layers of the wall of the bowel ('full-thickness diverticulum'). MD is located in the anti-mesenteric edge of the small bowel, is 5–6 cm in length, and usually located 30–90cm from the ileocecal valve.¹ Usually asymptomatic, MD may be discovered incidentally during diagnostic or surgical procedures. Complications of MD may also occur (though they are found mostly in children). The most common complication is haemorrhage resulting from heterotopic gastric mucosae. The second most common complication (usually found in adults) is small-bowel obstruction, which may be secondary to omphalomesenteric bands, volvulus, intussusception, diverticulitis, and internal/external hernias. Protrusion of MD through an opening in the abdominal wall ('Littre's hernia') is extremely rare.

Case History

A 63-year-old female with a history of obesity, diabetes mellitus, hypertension as well as open hysterectomy and laparoscopic cholecystectomy undertaken 15 years previously presented to the emergency department. She complained of

umbilical pain of 10-day evolution but with no other digestive symptoms or fever. Radiography of the abdomen and blood analyses did not demonstrate an anomaly.

Physical examination revealed a painful mass believed to be an incarcerated umbilical hernia at the trocar site of previous laparoscopic surgery. Emergency surgery was carried out. Opening of the hernia sac revealed a MD within it (Fig 1). The MD was resected using a stapler followed by herniorrhaphy and hernioplasty with a polypropylene mesh. Pathology confirmed operative findings, with heterotopic gastric mucosae within the MD. Postoperative recovery was uneventful and the patient was discharged from hospital 6 days later.

Discussion

MD is a remnant of the omphalomesenteric duct appearing on the distal ileum and is the most common intra-abdominal anatomical anomaly. Clinical manifestations range from completely asymptomatic to complicated MD. Management of symptomatic MD is resection, but management of asymptomatic MD (and MD found incidentally) is controversial: some authors advocate resection whereas other scholars propose leaving a MD *in situ*.

Figure 1 A Meckel's diverticulum (MD) discovered after opening the hernia sac. The MD protruded through an incisional hernia secondary to an umbilical laparoscopic trocar. The DM edge showed signs of inflammation due to incarceration.

A MD is usually constricted in an inguinal hernia (50%), but can be a femoral defect (20%) or umbilical defect (20%). As with any hernia, it may become incarcerated, though this complication is uncommon (0.33% of all incarcerated hernias). A MD can appear through a primary defect in the abdominal wall but also as a ventral hernia secondary to previous open or laparoscopic surgery (as in our case).³ With regard to trocar-site hernias, an estimated prevalence

after laparoscopic cholecystectomy of 0.2–5.2% has been reported. In ≤84.6 % of cases, they are located at the umbilical port. The most relevant risk factors are large-width trocars (≥10mm), old age, a high body mass index, long duration of surgery, and trocar insertion in weak areas of the abdominal wall (eg umbilicus). Such prevalence is decreased (0.6% vs 1.5%) by fascial closure of trocars of width ≥10mm since they are reportedly responsible for 96% of all trocar-site hernias.⁴ A patient with a symptomatic Littre's hernia should receive surgical treatment. A MD should be resected with a transverse closure (though sometimes a small-bowel resection and anastomosis must be done if there are signs of inflammation or ischaemia at the base of the MD). The procedure is completed with an umbilical hernioplasty. Similar cases have been reported, but a patient presenting with an incarcerated umbilical Littre's hernia through a defect due previous laparoscopic surgery has not.⁵ To avoid this complication, we agree with the numerous authors who recommend closure of trocar sites of width ≥10mm.⁶

References

1. Fa-Si-Oen PR, Roumen RM, Croiset van Uchelen FA. Complications and management of Meckel's diverticulum – a review. *Eur J Surg* 1999; **165**: 674–678.
2. Sagar J, Kumar V, Shah DK. Meckel's diverticulum: a systematic review. *J R Soc Med* 2006; **99**: 501–505.
3. Castleden WM. Meckel's diverticulum in an umbilical hernia. *Br J Surg* 1970; **57**: 932–934.
4. Uslu HY, Erkek AB, Cakmak A *et al*. Trocar site hernia after laparoscopic cholecystectomy. *J Laparoendosc Adv Surg TechA* 2007; **17**: 600–603.
5. Ahmad K, Shaikh FM, Ng SC, Grace PA. Laparoscopic port Littre's hernia: a rare complication of Meckel's diverticulum. *Am J Surg* 2006; **191**: 124–125.
6. Helgstrand F, Rosenberg J, Bisgaard T. Trocar site hernia after laparoscopic surgery: a qualitative systematic review. *Hernia* 2011; **15**: 113–121.