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Incarcerated Littre's Hernia in a Child: A Case Report

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ABSTRACT:

Littre's hernia is an extremely rare type of hernia which has Meckel's diverticulum as its content. A 5-year-old child, presented to the Emergency room (ER) with chief complaints of swelling and pain in the right lower quadrant of the abdomen and groin. The patient was diagnosed with an incarcerated right inguinal hernia following inspection and palpation. Following the emergency herniotomy, the intraoperative finding revealed an incarcerated Littre's hernia (Meckel's diverticulum within hernial sac). The patient underwent open Meckel's diverticulectomy with herniotomy. Preoperative diagnosis of Littre's hernia is less likely, especially in children given it's low incidence and lack of specific clinical findings or radiological features. Ultrasound and/or Computed tomography scan are important tools helping to differentiate between strangulated or incarcerated bowel and omentum and to decide on the urgency of operative management.
KEYWORDS: Littre's hernia, incarcerated hernia; Meckel's diverticulum, child.

INTRODUCTION:

Meckel's diverticulum (MD) is the most common congenital anomaly of the gastrointestinal tract, but the occurrence of a Littre's hernia (LH) is extremely rare [1]. LH is found in only 1% of all cases of MD. Over the past 300 years, less than 50 cases have been described in the literature [2]. The actual incidence of LH is hitherto unknown but has been reported to be only 0.09% of incarcerated or strangulated hernias. It is a condition which is very rarely seen in the pediatric population. Hence a preoperative diagnosis is rather unlikely. In children it is thought to be more common in umbilical hernias. Preoperative diagnosis of LH is unlikely due to its low incidence and lack of specific radiological and clinical findings.[1] Repair of a Littre's hernia consists of resection of the Meckel's diverticulum/diverticulectomy with a concomitant herniotomy [3].

CASE REPORT:

History and Presentation: A 5 year-old boy, presented to the ER of a tertiary care hospital with right sided groin swelling noted since 2 years approximately, with the history of it being irreducible, with severe pain over the right lower quadrant of the abdomen and vomiting for the past two days. On examination, there was an irreducible right inguinal swelling of approximately 4 x 3 cm with the presence of cough impulse. The swelling was tender on palpation and felt firm.

The child was hence planned for emergency inguinal herniotomy SOS laparotomy. Pre-operatively broad-spectrum antibiotics were instituted, he was kept nil per oral (NPO) and all relevant pre-operative investigations were sent.

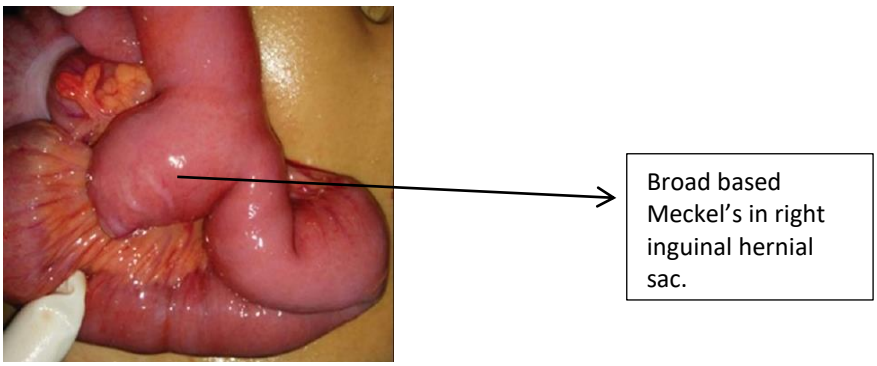
Investigations:

Laboratory investigations revealed leucocytosis with neutrophilia with a white blood cell (WBC) count of 14,345 per cubic mm, and an elevated c-Reactive protein (CRP) of 56.

Ultrasonography (USG) inguino-scrotal region showed a small defect in the right inguinal region with herniation of bowel loops ?Small bowel; with minimal internal vascularity, and minimal free fluid within the sac suggestive of obstructed inguinal hernia.

Surgical Steps:

Surgery started off with a classical transverse right inguinal crease incision for herniotomy. After carefully opening the fascial layers and the external oblique aponeurosis, intraoperatively, and isolating the hernial sac, it was noted that it was a thin hernial sac containing incarcerated Meckel's diverticulum I.e Littre's hernia; with minimal haemorrhagic fluid within the sac. The diverticulum was approximately 4*3 cm in size with a wide base attached to the distal ileum. Meckel's diverticulectomy was done with transverse repair of the defect being done with 4.0 PDS suture. After ensuring adequate bowel continuity, herniotomy was done with Silk 3.0, taking care to avoid injuring the vas deferens and vessels. Layers of the incision were closed after leaving a 20 Fr abdominal drain in situ, which was brought out via a separate stab incision. The child was kept NPO till return of bowel movement and gradually started on feeds. The drain was removed on the 4th postoperative day and the child was discharged on the 5th postoperative day on soft diet. At discharge the child was playful, feeding well and passing soft stools regularly.



DISCUSSION:

Littre's hernia(LH) is a rare hernia where Meckel's diverticulum is found within the hernia sac. It occurs in less than 1% of Meckel's diverticulum cases [1]. A Meckel's diverticulum is a true congenital diverticulum, I.e it consists of all layers of the bowel wall, a vestigial remnant of the vitelline duct. It is the most common malformation of the gastrointestinal tract and is present in approximately 2% of the population, with males more frequently experiencing symptoms [4].

Meckel's diverticulum was first described by Fabricius Hildanus in the sixteenth century and named after Johann Friedrich Meckel, who described the embryological origin of this type of diverticulum in 1809 [5,6]. It occurs on the antimesenteric border of the distal ileum and is usually located up to 2 feet from the ileocecal valve. Intestinal obstruction is the most common complication of MD . Other complications include gastrointestinal bleeding(due to heterotopic mucosa mostly gastric), inflammation, perforation and malignant degeneration. Although Meckel's can present in any age group. Children usually present with complications of MD. Children often present with blood in stool as the only symptom. Surgery is the appropriate treatment for complicated LH [3]. Preoperative diagnosis of Littre's hernia is less likely, especially in children given it's low incidence and lack of specific clinical findings or radiological features. Ultrasound and/or Computed tomography scan are important tools helping to differentiate between strangulated or incarcerated bowel and omentum and to decide on the urgency of operative management [1].

In our case, the child presented with severe abdominal pain and an irreducible painful inguinal mass suggestive of strangulation. Initial diagnosis of obstructed inguinal hernia was made by ultrasound but a diagnosis of incarcerated Littre's hernia was made intraoperatively only. Treatment of paediatric incarcerated inguinal hernia involves two key steps: early relief of the incarceration and closure of the hernial orifice [2,3]. If MD is long, diverticulectomy should be performed, if MD is short or narrow-based, there is no palpable mass within, the same diverticulum may be managed by a simple wedge resection with a transverse closure of the remaining ileal defect. In this case, the decision was made to do an open inguinal herniotomy, to resect Meckel's diverticulum since the length of the diverticulum was long i.e. 4 cm. Resection and anastomosis of a segment of the ileum may be required if there is oedema or inflammation at the base, to prevent postoperative stricture.

Littre's hernia in children usually presents as umbilical hernia, so it was even more difficult to anticipate incarcerated Meckel's diverticulum within the inguinal hernial sac pre-operatively in our child. In complicated Littre's hernia, the incarcerated Meckel's cannot be reduced due to fibrotic bands within the sac or self-adherence owing to the inflammation secondary to the ulceration and/or strangulation of the gastric mucosa inside the MD [7]. Luckily in our case the hernia was able to be reduced by the inguinal approach itself and we were able to get away without a laparotomy.

CONCLUSION

While it may not be possible to define LH before the operation, paediatric surgeons should consider LH in the differential diagnosis in irreducible inguino- scrotal or femoral hernias.

Herniotomy done by the conventional open method might be possible in early incarceration but might need conversion to laparotomy in cases with irreducible Meckel's due to fibrotic bands or adhesions. Wedge resection of the diverticulum or diverticulectomy are the standard treatment modalities followed by herniotomy. Ileal resection-anastomosis may be needed in complicated cases.

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