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Case Report

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Meckel's diverticulitis presenting with early abcess formation in femoral region: A clue for determining content of femoral hernia

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ABSTRACT

Perforated Meckel's diverticulitis (PMD) in a femoral hernia (FH) sac is a very rare clinical presentation. To determine the presence of such a complicated Littre's hernia is challenging. To emphazise the clinical importance of groin abscess and consider the possibility of extreme diagnosis in these patients, clinical suspection is necessary. Here we present a male patient with a history of pain and tender mass in right inguinal region, which was seems like a groin abcess. However, intraoperative finding was a strangulated Meckel's diverticulum in FH, the clinical appearance of entire bowel and pathological assessment were consistent with PMD. It's noteworthy that, not only a drainage, but rapid intervention should be considered in all inguinal abcess with confusing physical examination and signs.

1. Introduction

Meckel's diverticulum (MD) is the most common congenital anomaly of the gastrointestinal tract (2%-4%) (Sagar et al., 2006). When an abdominal wall hernia content consists of a MD, that is described as a Littre's hernia. Littre's hernia is one of the rarest form of abdominal wall hernias. It can be presented with various form of clinical scenarios; reductable, incarcerated or strangulated (Mirza, 2007; Zacharakis et al., 2008). Femoral hernias (FH) are more common in women. The rate of FH operations (elective and emergent) in whole groin hernias is 23% in women and 1% in men (Dahlstrand et al., 2009). Strangulated MD in a FH sac is a rare complication (Mifsud and Ellul, 2011). Also, a strangulated FH which is complicated by its content such like a perforated Meckel's diverticulitis (PMD) in a man is a very rare complication. Here in, we aimed to describe this rare form of complicated Littre's hernia and its unusual clinical presentation in a man.

2. Case

A fifty one-year-old male patient was admitted to our emergency service with a 36 hours history of a right inguinal tender mass and fever (39.5°C). The mass was reddish to yellow colour, 6-cm in diameter, painful, warm, tender and seemed like a nearly spontaneous draining abscess. The patient had no problem of bowel passage and his medical history was uneventful. Physical examination was revealed minimally cough impulse but no other abnormalities. The leukocyte count was 13.4×10^9 cells/L. As ultrasound displayed a complicated cystic and solid areas containing cavity with thickened bowel wall at the base, preoperative

diagnosis was recorded as ‘‘strangulated right FH’. The patient was informed about the operation. With a lower right oblique inguinal incision, pus filled hernia sac was opened cautiously, then pus and ileal content were drained. After taking down of loose attachments, a 3 cm piece of inflammed bowel fragment was freed and easily extracted. This piece of bowel was defined as a tip of MD. Also, incarcerated small bowel at the level of femoral canal with remaining short course of MD was determined. The bowel was carefully freed from contiguous structures with sharp and blunt dissections. FH defect was expanded with care taken not to allow inflamed bowel slip into the abdomen. Entire ileum, resected piece of the tip of MD and remaining part of the diverticulum were exposed (Fig. 1). There was no circulation impairment, but the clinical appearance of the diverticulum was concordant with a diverticulitis. PMD was resected with inflamed 3 cm bowel segment from each side. A end to end two layer hand sewn anastomozis and the Mc-Vay Cooper’s ligament repair were performed (McVay and Anson, 1949). No mesh was used, because of the soft tissue infection and possible fecal contamination from the perforated diverticulitis. In the same way, skin was not approximated. Intravenous antibiotics was initiated. Postoperative course of the patient was uneventful. The patient was discharged on postoperative day seven, with subsequent skin approximation. Histopathologic examination showed a 3x2x2 cm^3 piece of bowel with haemorrhagic infarction and acute inflammation, which was consistent with the tip of MD. The diverticulum was 4 cm long and 1.5 cm wide at the base, and there was a perforation at the broken site of the diverticulum, the same findings were found in adjacent bowel segments in both sides. No complications and complaints were observed by the one year control examination.

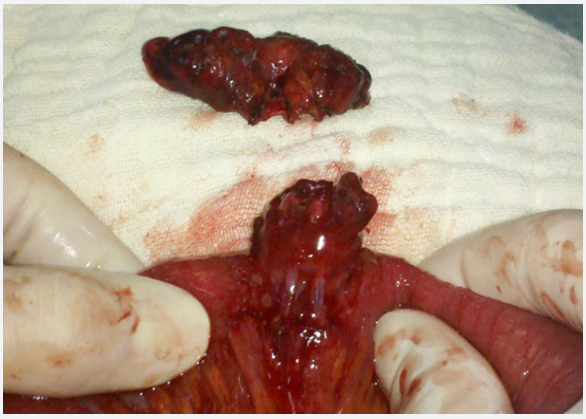

Fig. 1. Entire ileum, resected piece of the tip of Meckel’s diverticulum and remaining part of the diverticulum.

3. Discussion

FH are accounting for only 3% of all hernias and occur most commonly in women. Due to narrow and rigid femoral canal, it is related to higher rate of incarceration and strangulation (5%-20%) (Salkade et al., 2012). Therefore, commonly accepted approach for a FH was urgent or semi-urgent repair. MD is a true diverticulum, it contains all three layers of intestinal wall, it has own blood supply and located on anti-mesenteric side of the bowel. MD related complication rates ranges from 4%-16%, it was higher in men three to four times than women. In the adults, most frequent complications are: obstruction due to the intussusception or adhesive band (14%-53%), ulceration (54%), diverticulitis, and perforation (Sagar et al., 2006). MD in a hernia sac described as a Littre’s hernia. However, FH sac containing perforated MD in a man is a very rare presentation, expected clinical picture was such a painfull inguinal mass and bowel passage obstruction with a history of groin hernia, not a localised abcess formation.

In 1938, Weinstein reviewed the literature and reported ten cases of perforation in strangulated MD in a FH (Weinstein, 1938). In 1947, Bennett and Kahler (1947) reported generalized peritonitis due to perforation of a MD in a right incarcerated FH. Up to date, from early reports, to the best of our knowledge the literature has no report about FH sac containing perforated MD not only a diverticulum. This case is also interesting such a presentation like a nearly spontaneus draining right inguinal abcess. The rapid progress of the condition may be related with strangulated hernia content and it’s own inflammation due to concurrent diverticulitis. According to the nature of a MD, true strangulation is a rare condition, because of its appendiceal structure, inflammation is much more frequent than strangulation. Generally, there is any clear clue to distinguish strangulation or inflammation occured first. In our case, during the exploration we have had no certain comment if it was incarcerated or inflamed, but according to the surgical team, the dominant feature was inflammation than strangulation. We thought that, the entire bowel with no circulation impairment was supported our hypothesis. Therefore we explained this perforation more dominantly due to MD inflammation rather than a strangulation.

In the early reports, one of the ten patients in Weinstein’s review died (Weinstein, 1938). Bennett and Kahler, (1947) showed real pathology in postmortem examination. Reported high rate of death occured with the perforated MD in a FH sac may be the result of diagnostic delay. Although, previously reported cases has no data about symptoms duration to surgery, in presented case, patient’s symptom history was 36 hours. We thought that, due to early surgical intervention, our patient did not have had any problem in the postoperative course.

In conclusion, perforated MD in a FH remains a challenging diagnosis due to it’s extremely rare occurrence. The accurate diagnosis can only made with surgery, and the decision of exploration depends on surgeon’s suspect. It’s noteworthy that, not only a drainage, but rapid intervention should be considered in all inguinal abscess with confusing physical examination and signs. Diagnostic imaging, such as ultrasound (US) or computed tomography (CT), can be helpful. The increased risk of morbidity and mortality in these cases is great and does appear to be affected by diagnostic delay. Rapid recognition and early surgical intervention is appearing to be a key feature to prevent this rare mortal condition.

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