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A Fatal Complication of Mobile Cecum

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We report a case of mobile cecum presenting as incarcerated scrotal hernia complicated by necrotizing fasciitis. A 54-year-old man, with no relevant medical history, presented with 3-day duration of a painful large right scrotal mass associated with high fever. The comprehensive workup confirmed the diagnosis of a right inguinoscrotal hernia. Surgical intervention with exploratory laparotomy through midline incision of the abdomen revealed a right incarcerated hernia of the cecum with gangrene and perforation as well as right necrotizing fasciitis of the scrotum. The patient successfully underwent partial resection of the colon and terminal ileum, debridement and herniorrhaphy. We highlight this unusual case because surgeons are encouraged to be aware of this condition, which is difficult to recognize before exploration.

Key words: mobile cecum, scrotal hernia, incarceration

INTRODUCTION

Mobile cecum is defined as failure of the right colon, cecum, terminal ileum, and mesentery to fuse to the posterior parietal peritoneum.[1] Previous studies found a 10% prevalence rate of mobile cecum.[2] Mobile cecum rarely develops into scrotal hernia; however, once it occurs, incarcerated ileus follows, often necessitating emergency surgery. To the best of our knowledge, only one case of cecum in an incarcerated right inguinal hernia has been reported.[3] We report a second case of mobile cecum presenting as incarcerated scrotal hernia, which was effectively treated by exploratory laparotomy with partial colectomy and herniorrhaphy.

CASE REPORT

A 54-year-old man, with no relevant medical history, presented to the outpatient department with 3-day duration of a painful large right scrotal mass associated with high fever. Physical examination disclosed a distended abdomen and the appearance of scrotal mass, which was markedly edematous and warming change. The scrotal mass cannot be easily reduced into the peritoneal cavity through the internal inguinal ring by gentle pressure, consistent with incarcerated right inguinal hernia. Pertinent laboratory findings revealed an elevated white cell count of 18,300 cells/mm^3 along with a predominance of neutrophils. The abdominal X-ray revealed no evidence of bowel obstruction (Fig. 1). The computed tomography scan of the abdomen illustrated the intraperitoneal communication through a muscular defect and entrapped thick-walled colon within the right inguinal hernia. Notably, air-fluid levels and fluid accumulation within a focal mass-like lesion pointed to the presence of active inflammation (Fig. 2). A diagnosis of incarcerated indirect inguinal hernia was made. Surgical intervention through a standard right oblique inguinal incision followed by exploratory laparotomy was carried out, displaying a colon-like incarcerated mass located next to the normal testis. An attempt to restore and de-strangulate the mass from the scrotum to abdomen failed due to the excessive inflammation. Instead of a standard right oblique inguinal incision, an incarcerated cecum with gangrene and perforation of the hernia sac and necrotizing fasciitis of the right scrotum were noted through midline incision of the abdomen. Then the patient successfully underwent partial resection of the colon and terminal ileum, debridement

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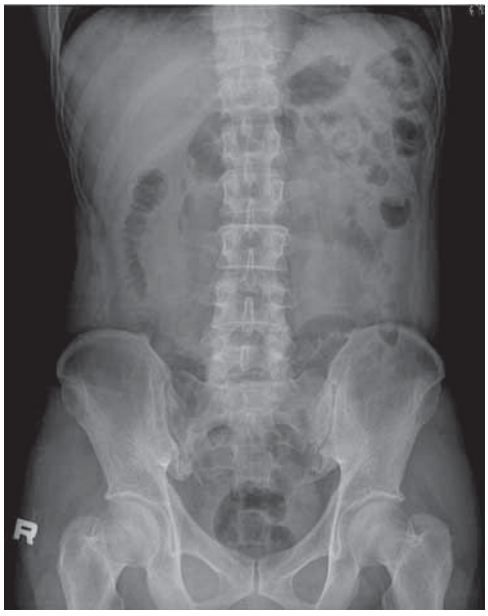

Fig. 1 Nonspecific bowel gas pattern is noted in the abdomen.

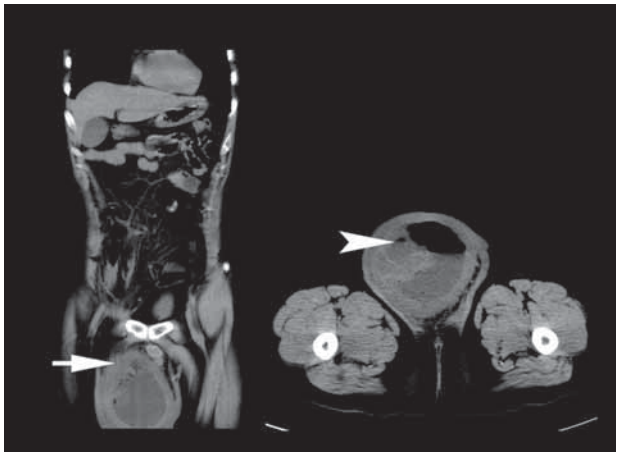

Fig. 2 Non-contrast computed tomography of abdomen revealed intraperitoneal communication through a muscular defect and entrapped thick-walled colon within the right inguinal hernia (arrow), with air-fluid levels and fluid accumulation within a focal mass-like lesion (arrowhead).

and herniorrhaphy. Regular dressing changes along with the administration of broad-spectrum antibiotics were performed preceding delayed primary suture and debridement. Postoperative recovery was uneventful and the patient was discharged from the hospital 2 weeks after admission.

DISCUSSION

Mobile cecum is a condition of the right colon, cecum, terminal ileum, and mesentery failure to fuse to the posterior parietal peritoneum[1]. People with incomplete intestinal rotation generally developing inadequate right colon fixation may be the reason for mobile cecum.[4] Previous studies found the prevalence of mobile cecum to be about 10%[2]. Although not all people with mobile cecum present with any discomfort, the symptoms of chronic right lower quadrant abdominal pain with associated abdominal distention and symptomatic relief after passing flatus or having a bowel movement have been noted. The most severe but rare complications of mobile cecum include volvulus of the cecum,[5] volvulus of the small intestine,[6] intussusceptions,[7] and internal hernias.[8] Mobile cecum can be treated with an operation of the cecopexy.

In our review of the literature, only Mehta et al. presented one case of the cecum in an incarcerated right inguinal hernia[3] and ours is the second published case. In the case reported by Mehta et al, there was a trapped fecalith causing incarceration with stercoral necrosis of the cecum in an inguinal hernia. In our patient's case, there was no fecalith or tumor in either the inguinal region or the abdominal cavity. This probably meant the cause of incarcerated inguinal hernia was mobile cecum.

Except for these two cases, there is no other presentation of incarcerated right inguinal hernia caused by mobile cecum. If it occurred, incarceration of mobile cecum can be a life-threatening complication of hernias and is considered an absolute indication for emergency surgery because of the risk of occlusion and strangulation of the involved organs. Rupture of a hollow organ into an inguinal hernia will probably result in a life-threatening infection. Any delay in treatment may lead to a rapidly progressive peritoneal contamination, necrotizing fasciitis or enterocutaneous fistulae which are indicators of poor prognosis.[9] In any event, fecal peritonitis implies a worse outcome.

The diagnosis of mobile cecum is very difficult to make prior to surgery. Computed tomography played a role in identifying the groin hernias and their contents. At surgery, a segment of cecum had herniated and incarcerated into the scrotum. This was found to be incarcerated with perforation at the base. Besides, necrotizing fascitis of the right inguinal region was also found. Midline incision for partial colectomy of cecum and standard herniorrhaphy are established following resection of the gangrenous cecum and debridement of the inguinal region. Aggressive antibiotics treatment, prompt debridement and

delayed primary suture should be carried with adequate drainage to limit further infections.

Our case highlights as only the cecum was presenting in the sac, the assessment of the rest of the bowel as well as the extent of the diseased segment would have been difficult without the midline incision, especially in the emergency setting. Surgeons are encouraged to be aware of this unusual condition, which is difficult to recognize before exploration.

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