



Case report

Sciatic hernia led to strangulated ileum and ipsilateral ovary: A case report and review of literature

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ABSTRACT

Sciatic hernia is one of the rarely pelvic floor hernias. We report a 45-year-old woman who presented with acute crampy pain of hypogastrium which radiated down the back of the left thigh and found a mass in her left buttock area which is about fist size with local pain, so she had to force to bow position when walking. She was also associated with definite gastro-intestinal symptoms. Computed tomography (CT) of the pelvis and abdomen demonstrated the herniation of an ileal loop through the sciatic foramen on the left side. The diagnosis and management of this case are herein described and previous publications on sciatic hernias are reviewed.

1. Introduction

Sciatic hernia described by Papan in 1750 firstly is one of the rarely pelvic floor hernia and difficult to diagnose and cure, with no more than 100 published reports in the literature worldwide [1,2]. The typical scenario of sciatic hernia involves older, adult females who present with recurrent abdominal pain or chronic pelvic pain with or without mass in the thighs or buttocks [3]. Herein we report a typical case of symptomatic sciatic hernia with strangulated distal ileum and ovary, occasionally diagnosed on a CT performed for acute abdominal pain, and successfully treated with a transabdominal emergency surgery. Meanwhile, we briefly review the clinical and radiological manifestations of this entity.

2. Case report

A 45-year-old woman was admitted to our hospital, complaining of severe crampy pains in hypogastrium which radiated down the back of the left thigh, nausea and vomiting. Extending the leg aggravated the pain. In particular, she found a clearly visible bulging measured about fist size in the left buttock area and felt the bulging so painful that she could not touch it and had to force to bow position when walking.

For the past one year he had suffered occasional attacks of abdominal pain, nausea and vomiting because of incomplete intestinal obstruction. The duration of the attacks were 30 minutes to an hour and relief was always obtained by purgative enema and analgesic injection. One day prior to admission he experienced a particularly severe attack of a similar nature.

Her medical history was characterized by calculous cholecystitis. She underwent cesarean delivery sixteen years ago. 8cm scar could be seen in the lower abdomen because of cesarean delivery.

On physical examination, her vital signs were stable. She was appearance of acute pain, dehydrated and in a poor state of nutrition.

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She was lying on the bed with the knees flexed suffering periodic hypogastrium pain. Her abdomen was soft, but she had epigastrium tenderness, rebounding pain, and disappearance of intestinal gurgling sound. She was also noted to have a mass in the left buttock (Fig. 1A). The mass had the dimensions of 10 cm × 8 cm × 8 cm. It was tenderness and non-reducible.

Abdominal X-ray plain films demonstrated intestinal obstruction and gallstone. Transgluteal ultrasonography revealed incarcerated bowel loops beneath the left gluteal muscles, suggestive of hernia. Computed tomography (CT) examination of the abdomen and pelvis demonstrated the presence of seroperitoneum, pneumoperitoneum, low intestinal obstruction (Fig. 2A), and a left sciatic hernia containing an ileal loop (Fig. 2B–C).

Because the clinical and radiological observations indicated development of strangulation of the involved intestinal loop, emergency exploration laparotomy was performed. Abdominal exploration found a large amount of yellow green intestinal fluid in the abdominal cavity. The herniation of small bowel loop was about 80cm from the ileocecal region (Fig. 3A), the left ovary was also clearly evident in subpiriformis position through the greater sciatic foramen (Fig. 3B). On further exploration in the region, there was intestinal perforation (0.3cm × 0.3cm) on the proximal intestinal wall which was about 10cm from the herniation of small bowel loop and intestinal fluid overflow could be seen (Fig. 3C). It was found impossible to pass a little finger tip at neck of hernia sac and at the same time to gently retract the small bowel loop upwards. This gentle traction on the incarcerated small bowel loop served to reduce the hernia. It was then possible to visualize hernia contents including the necrotic small bowel loop which was about 30 cm, necrotic left ovary and part of the fallopian tube. The neck of hernia sac was about 1 cm in diameter. There was no evidence of adhesions resulting from C-section resulting in acute intestinal obstruction. Then she underwent partial enterectomy with end-to-end anastomosis and left oophorectomy (Fig. 3D), at which time the hernia was also repaired by transabdominal approach with a direct suture repair.

The gluteal mass disappeared after the operation (Fig. 1B). Ten days after postoperative period, she was discharged from the hospital. She had no any discomfort in the next 3 months follow-up.

3. Discussion

Although there are few cases reports on sciatic hernia in the literature all over the world, the incidence of this disease has gradually increased with the improvement of radiological technology. Karasaki T [4] revealed that asymptomatic sciatic hernia was usually found in more than 24% of patients with an obturator hernia. In fact, serious symptomatic sciatic hernia in our case is rare entity.

The sciatic notch on the inferior margin of the pelvis is transformed into the greater and lesser sciatic foramina by the sacrospinous and sacrotuberous ligaments, respectively [5]. The greater sciatic foramen is further divided by the piriformis muscle, thus, greater sciatic foramen hernias may be suprapiriformis and infrapiriformis [6]. Hernias of the lesser sciatic foramen are termed spinotuberous hernia. Thus, the sciatic hernia has three types and the most common type is suprapiriformis, followed by infrapiriformis, while spinotuberous hernia is infrequent [7]. Sciatic hernias are typically covered by the gluteus maximus muscle and become clinically apparent if they are very large and protrude distal to the caudal aspect of that muscle [1]. The etiology for this rarely hernia may be

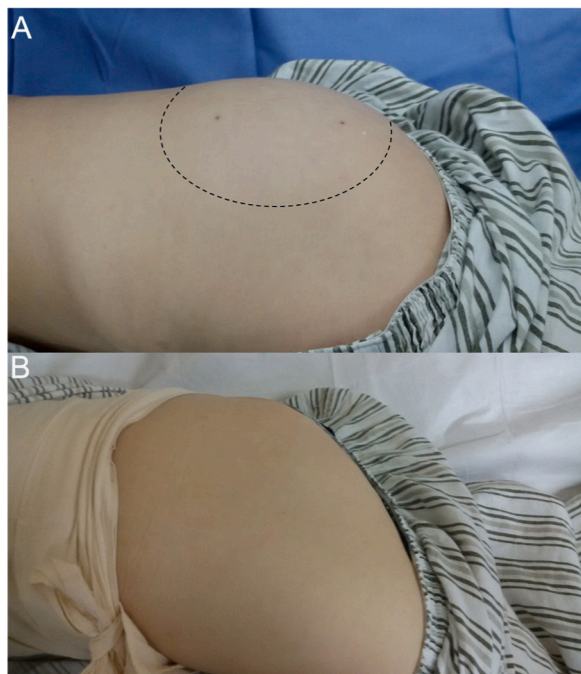


Fig. 1. A visible bulging in the left buttock area. (A: preoperative manifestation, B: postoperative manifestation).

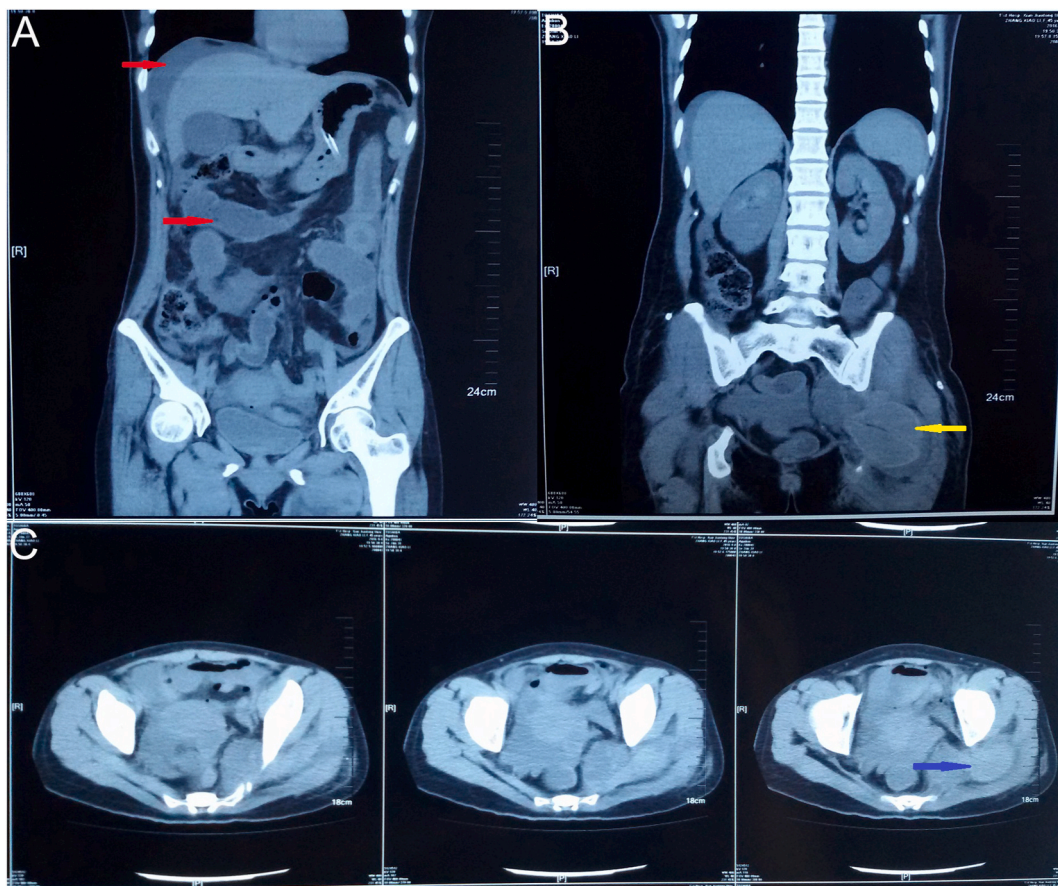


Fig. 2. CT manifestation. (A: seroperitoneum, pneumoperitoneum and low intestinal obstruction (red arrow), B: coronal CT manifestation of left sciatic hernia containing small bowel loop (yellow arrow), C: Cross-section manifestation of left sciatic hernia containing small bowel (blue arrow)). (For interpretation of the references to color in this figure legend, the reader is referred to the Web version of this article.)

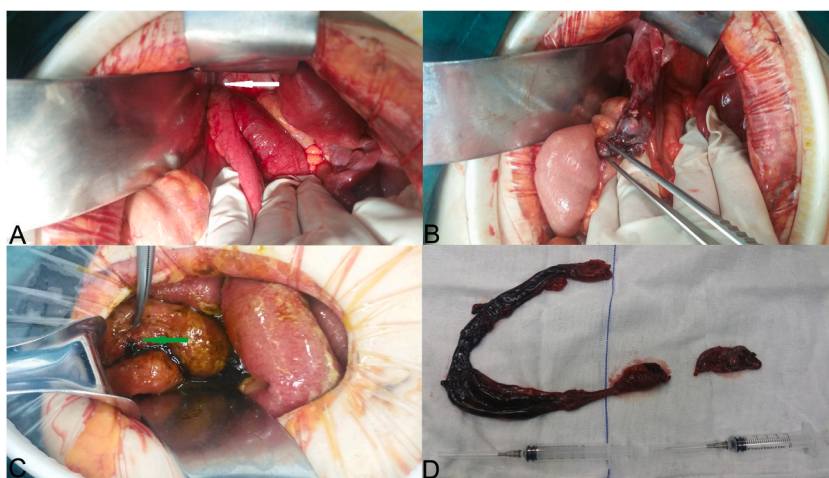


Fig. 3. Intraoperative manifestation. (A and B: incarcerated small bowel loop and left ovary through hernia ring (white arrow), C: intestinal perforation on the proximal intestinal wall which lead to intestinal fluid overflow (green arrow), D: resected part of the small intestine and the left ovary). (For interpretation of the references to color in this figure legend, the reader is referred to the Web version of this article.)

both congenital and acquired, occurred more frequently in females according to the literature, such as the emaciation, pelvic floor muscle atrophy, and loss of pre-peritoneal fat predisposes to pelvic floor hernias [8].

The diagnosis of sciatic hernia can be very difficult which need combined with clinical symptoms, signs and imaging data. The clinical presentation varied with the individual features of each case. It can cause acute and chronic abdominal pain and sometimes radiates to the buttocks and posterior thigh because of different hernial contents. Contents of sciatic hernias may contain ovary, small bowel, ureter, bladder, colon, Meckel's diverticulum, appendix, and benign and malignant soft tissue tumors [6]. It may also sometimes present with clearly visible bulging in the gluteal and upper thigh area upon straining.

Losanoff JE et al. [1] published a review of the sciatic hernia described in 78 operative reports from 1900 to 2008. In this review, 77% of the 99 patients were women. The content of the hernia included ovary (28%), ureter (25%), small intestine (23%), colon (18%), neoplasm (7%), greater omentum (3%) and other organs. Miklos JR [5]. et al. reviewed experience with 20 women treated for sciatic hernia and found all sciatic hernias contained the ipsilateral ovary alone or with its fallopian tube. In our case, the patient was also a multiparous woman, and the contents were common small intestine and ovary.

Small bowel obstruction caused by sciatic hernia is rarely reported and only 53 cases have been documented [9]. The Losanoff's review also showed that fifty percent of the 99 patients presented with abdominal pain. Eight patients had sciatica. Eleven percent patients presented acute abdominal pain because of intestinal obstruction caused by sciatic hernias. Thirty-five percent patients presented bulging varied in size from almost invisible to 20 cm in diameter. Only seven percent of patients complained of distinct pain at the site of the hernia. In our case, the patient presented severe crampy pains in hypogastrium caused by strangulated intestinal obstruction and proximal rupture of the small intestine. The patient also presented non-reducible bulging in the left buttock with distinct pain which was the one of typical signs for sciatic hernia. The abdominal pain radiated to the back of the left buttock and thigh simultaneously, which was consistent with slight sciatica. Yu PC et al. [9] had reported a pre-operative diagnosis of incarcerated sciatic hernia on ultrasound. In this case report, the patient presented acute abdominal pain with asymmetric bulging of her left buttock which was similar with our case. But in our case, the hernia contents are not only the small intestine, but also the ipsilateral ovary. Furthermore, our case has more severe symptoms and intra-abdominal infection.

Due to diversity of clinical presentation of sciatic hernias, radiological diagnosis of sciatic hernia is an important assistant diagnostic measure including ultrasonography [9], barium studies [10,11], CT [10,12] and magnetic resonance imaging (MRI) [13,14]. Although color doppler ultrasonography is helpful for the diagnosis of incarcerated bowel loops, it usually cannot identify sciatic hernia and obturator hernia [7]. CT is the preferred preoperative diagnostic method in most hospitals, because it is generally faster and easier to obtain than MRI. The CT scan typically shows the hernia emerging through the sciatic foramen and entrapment of the sac beneath the gluteus maximus muscle; coexistent hernias can also reliably be evaluated by the same study.

Treatment of incarcerated sciatic hernia is emergency surgical exploration. There are two common approaches to treat sciatic hernias: the abdominal approach or the transgluteal approach. Conventional repair was historically followed by direct suture repair [12,15]. In adults, prosthetic reinforcement of the floor is generally recommended for asymptomatic or fully prepared preoperative patients [1,3]. Recently, with the development of minimally invasive surgery, this operation can be performed through laparoscopic or robot [6,14,16,17]. As illustrated in our case, transabdominal repair was performed immediately due to severe abdominal infection followed the same guidelines as any other incarcerated hernia.

In conclusion, we reported an extremely rare case of strangulated sciatic hernia. This case demonstrates that careful attention must be paid to hernias in elderly and multiparous women, because hernias were also common etiology of small bowel obstruction. CT is useful and convenient in diagnosis of sciatic hernia. Once the incarcerated sciatic hernia was diagnosed definitely, emergency surgical exploration is necessary.

4. Conclusion

In this report, we highlight the diagnostic, surgical treatment and review the current literature on sciatic hernias in patients.

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Data availability statement

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Declaration of interest's statement

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Appendix A. Supplementary data

Supplementary data to this article can be found online at [10.1016/j.heliyon.2023.e13904](https://doi.org/10.1016/j.heliyon.2023.e13904).

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