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Internal supravesical hernia repaired via the anterior approach alone: A case report



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ABSTRACT

INTRODUCTION: Internal supravesical hernia is one of the rarest types of inguinal hernia. The hernial orifice is surrounded by the transverse vesical fold, median umbilical fold, and medial umbilical fold.

PRESENTATION OF CASE: A 75-year-old male presented with lower abdominal pain and nausea. Plain abdominal CT showed that the bladder was suppressed by small bowel near the left internal inguinal ring. A part of the small bowel wall seemed to be inlaid, and so the patient was diagnosed with a strangulated left inguinal hernia. The hernia repair operation was performed via the anterior approach. There was no internal hernial sac found, but there was a walnut-sized mass in the properitoneal space. A diagnosis was made intraoperatively of internal supravesical hernia with strangulated small bowel. Small bowel resection and hernial orifice closure were performed.

DISCUSSION: Although internal supravesical hernia can present with distinctive CT findings, preoperative diagnosis is extremely difficult. Internal supravesical hernia in previous reports has been repaired via open laparotomy or laparoscopic surgery; however, we successfully repaired this intraoperatively-diagnosed internal supravesical hernia by the anterior approach alone.

CONCLUSION: The patient with internal supravesical hernia diagnosed intraoperatively could be treated via the anterior approach alone successfully. Depending on the situation, the anterior approach can be an option.

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1. Introduction

Internal supravesical hernia is very rare and is not widely known by general surgeons. The low recognition of internal supravesical hernia makes preoperative diagnosis very difficult, although characteristic CT findings have been reported [1]. Most previous reports performed closure of the hernial sac by open laparotomy. There have been no recent report on repairing internal supravesical hernia without open laparotomy or laparoscopic surgery. This work has been reported in line with the SCARE criteria [2].

2. Presentation of case

A 75-year-old male presented with lower abdominal pain and nausea. His past medical history was significant for hypertension,

and he had no history of previous abdominal surgery. On admission, the patient's body temperature was 36.5 °C, heart rate was 58 beats/min, blood pressure was 162/89 mmHg, and SpO₂ was 99% on room air. No tumor was detected in the abdomen, but there was tenderness in the hypogastric region without peritoneal signs. The bowel sounds were normal. Laboratory examination revealed that the patient's C-reactive protein level was 1.00 mg/dL and white blood cell count was 8440 cells/μL. Abdominal radiography showed mildly dilated small intestines with a niveau (Fig. 1). Plain abdominal CT revealed that the bladder was being suppressed by small bowel near the left internal inguinal ring (Fig. 2). A part of the small bowel wall seemed to be inlaid, and so we diagnosed the patient with a strangulated left inguinal hernia (Fig. 3). The patient's symptoms had improved since initial presentation at our hospital; hence, we thought that the strangulation had been released and the hernia repair operation was planned for the following day.

The operation was performed by a gastroenterological surgeon under general anesthesia via the anterior approach. After encircling the spermatic sheath, we attempted to explore the hernial sac. However, there was no internal or external hernial sac observed. After incising the transversal fascia, we could palpate

Abbreviation: CT, computed tomography.

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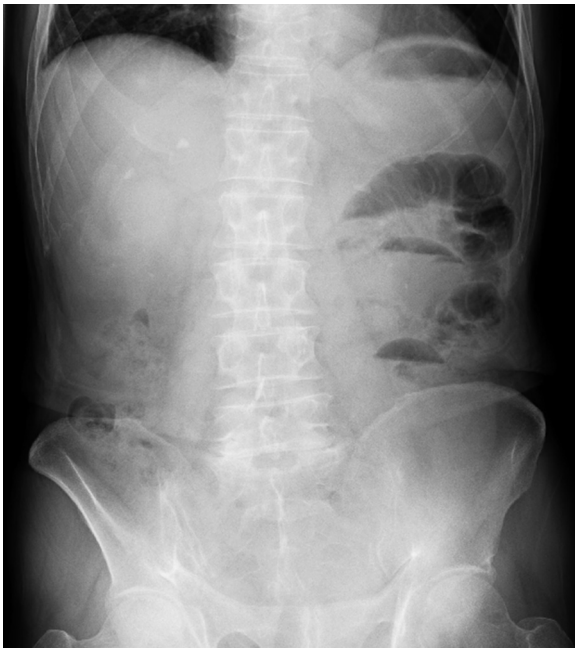


Fig. 1. Preoperative abdominal X-ray image showing mildly dilated small intestine with niveau formation.

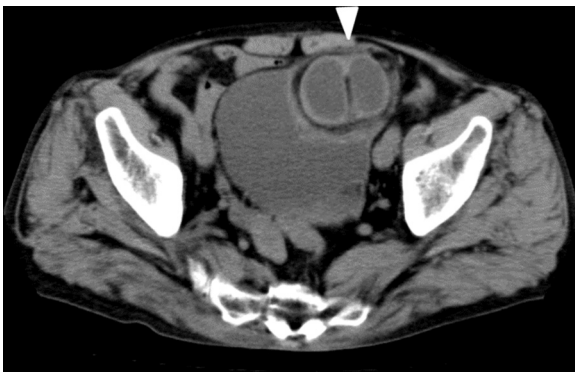


Fig. 2. Preoperative plain CT image.
▽: Suppression of the bladder by small bowel near the left internal inguinal ring.

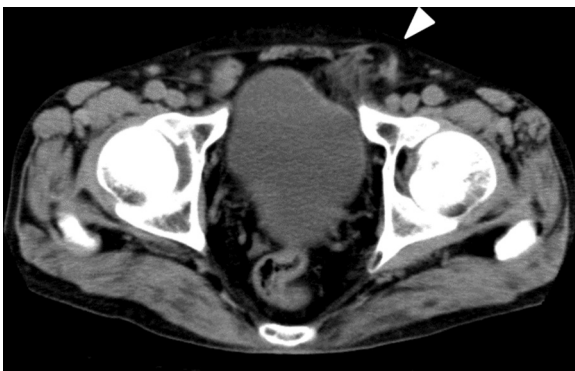


Fig. 3. Preoperative plain CT image.
▽: A part of the small bowel wall seemed to be inlaid.

a walnut-sized mass in the properitoneal space. We intraoperatively diagnosed an internal supravesical hernia with strangulated small bowel. After considering conversion to open laparotomy, we decided that it was possible to repair the hernial orifice via the anterior approach alone without making another abdominal inci-

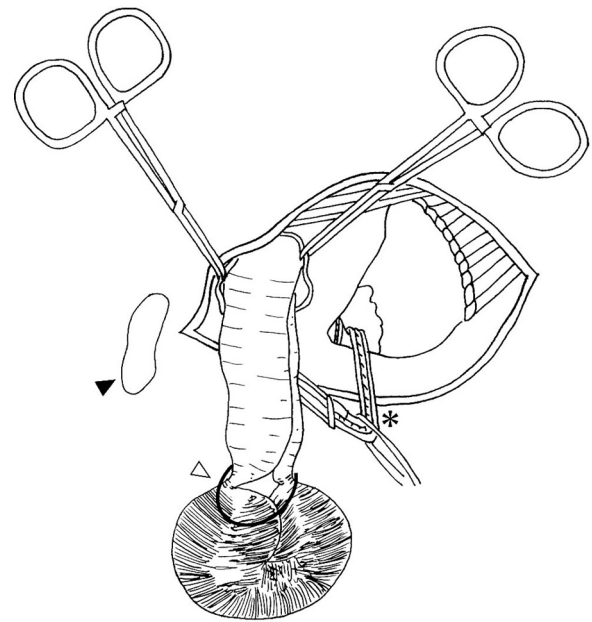


Fig. 4. Schematic drawing of the operation.
After incision of the hernial sac, the necrotic small intestine was visible.
▽: strangulation of small intestine.
▼: pubis.
*: spermatic cord.

sion. After incising the hernial sac, we resected the small bowel via the hernial orifice, resected the hernial sac, and closed the hernial orifice (Fig. 4). The posterior wall of the inguinal canal seemed to have become brittle during the operation, so we repaired it using McVay's method. The patient was discharged on postoperative day 9 without any complications. No postoperative recurrence has occurred as of 22 months after surgery.

3. Discussion

Internal supravesical hernia is very rare. The first case was reported by Ring in 1814 [3]. While the exact number of cases is unknown, there have only been 13 documented cases in the past 30 years, including our case [4–14] (summarized in Table 1). In previous reports of internal supravesical hernia, the median patient age was 74 years, and the male sex is dominant (10 of 11 cases). Internal supravesical hernia frequently occurs in men in their 60s [15]. The primary symptoms of supravesical hernia are often abdominal pain and vomiting. Almost all patients in previously reported internal supravesical hernia cases had digestive symptoms such as abdominal pain and vomiting caused by intestinal obstruction. Bladder irritation and dysuria can also be present, as the bladder is suppressed by the small bowel. Ischemic necrosis of the intestine frequently occurs as a consequence of strangulation; intestinal necrosis was present in four of the 13 reported cases. An accurate preoperative diagnosis was made in only one case. Two of the 13 cases were repaired laparoscopically (data were not fully available), while the other 10 cases were repaired by open laparotomy except for our case. Closure of the hernial sac was performed in all 13 cases, and resection of the hernial sac was performed in five of 13 cases.

The orifice of a supravesical hernia is surrounded by the transverse vesical fold, median umbilical fold, and medial umbilical fold (Fig. 5). Supravesical hernia is classified into internal supravesical hernia and external supravesical hernia depending on the direction of extension. Internal supravesical hernia takes the form of an internal hernia, whereas external supravesical hernia takes the form of external hernia. It has been inferred that supravesical her-

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