Laparoscopic repair of a bilateral internal inguinal hernia with supravesical hernia – a case report

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**ABSTRACT**

**INTRODUCTION:** Supravesical hernia is an exceptional subtype of internal inguinal hernia, and it is located between the median umbilical ligament and the medial umbilical ligament. The hernia is classified as two types: internal supravesical hernia and external supravesical hernia.

**PRESENTATION OF CASE:** Herein we report a rare case of external supravesical hernia successfully treated by laparoscopic procedure. The patient who complained right inguinal protrusion and mild frequent urination was diagnosed as right inguinal hernia and potential of left inguinal hernia using computed tomography. He underwent laparoscopic bilateral hernia repair, and intraoperative findings revealed right external supravesical hernia and left internal inguinal hernia.

**DISCUSSION:** Laparoscopic hernia repair may make it possible to avoid overlooking of internal hernia such as supravesical hernia. Moreover it was possible to cover the hernia orifice and dissected layer of the dorsal site of urine bladder using bilateral approach in the current case.

**CONCLUSION:** In conclusions, laparoscopic hernia repair might be a surgical option for supravesical hernia.

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1. Introduction

Supravesical hernia is an exceptional subtype of internal inguinal hernia [1–3]. Supravesical hernia is located between the median umbilical ligament and the medial umbilical ligament, and it is classified as two types: internal supravesical hernia and external supravesical hernia. Herein we report a case of external supravesical hernia successfully treated by laparoscopic procedure.

2. Case presentation

A 72-year-old man consulted our department with complaints of right inguinal protrusion and mild frequent urination. Laboratory data showed no appreciable abnormality of biochemical test. Abdominal computed tomography (CT) demonstrated marked and mild protrusion of peritoneum at right and left inguinal region, respectively (Fig. 1). Therefore, the patient was diagnosed with bilateral inguinal hernia. After informed consent was obtained, laparoscopic bilateral hernia repair was carried out in our department.

**Fig. 1.** Preoperative computed tomography showed suspicion of bilateral inguinal hernia.

Under general anesthesia, laparoscopic inguinal hernia repair was performed with a 12 mm trocar at navel and two 5 mm trocar at bilateral abdominal flank. Intraoperative findings showed that a marked protrusion of peritoneum at the medial of inferior epigastric vessels at the right inguinal region. It was also identified that a mild protrusion of peritoneum at the medial of inferior epigastric vessels at the left inguinal region (Fig. 2). The findings
revealed the bilateral internal inguinal hernia. Especially as for the right-side hernia, the marked one, the hernia orifice was located on the medial umbilical ligament (Fig. 2). The left hernia orifice was located on the left-side medial inguinal fossa. Therefore, the patient was diagnosed as bilateral internal inguinal hernias with a right-side supravesical hernia. Firstly, repair for the right inguinal hernia with a right-side supravesical hernia was started. The right-side peritoneal dissection of hernia orifice was performed toward the dorsal site of urine bladder (Fig. 3), and a mesh (Bard® 3D Max Light, M size) was put on the dissected space (Fig. 3). Secondly, repair for the right inguinal hernia was carried out. During dissection of the right inguinal hernia, the dissected layer of the dorsal site of urine bladder was connected with the right one (Fig. 4). Similarly, a mesh was put on the dissected space of the left side. Finally, peri-
toneal closure of both sides by suture technique was carried out. The patient showed good postoperative course and the complaints of right inguinal protrusion and mild frequent urination resolved.

3. Discussion

Supravesical hernia is a exceptional subtype of internal inguinal hernia [1–3]. Supravesical hernia is located between the median umbilical ligament and the medial umbilical ligament, and it is classified as two types: internal supravesical hernia and external supravesical hernia. Patient with supravesical hernia, especially internal supravesical hernia, have a risk for the development of incarcerated and intestinal obstruction, and external supravesical hernia present inguinal protrusion [3–9]. It was also reported that patients with supravesical hernia presented with bladder symptoms such as frequent urination [10]. In the current case, the patient complained right inguinal protrusion and mild frequent urination. On the other hand, it was suggested the suspicion of left inguinal hernia on preoperative CT. Therefore we planned laparoscopic bilateral hernia repair after informed consent. Intraoperative findings revealed that the right supravesical hernia and left internal inguinal hernia described above.

Laparoscopic repair for inguinal hernia, such as transabdominal preperitoneal patch plasty (TAPP) and total extraperitoneal patch plasty (TEP) repair, have been widespread in the world. Several systematic reviews or meta-analysis about comparison between TAPP and TEP have been reported [11–15]. At the present time, the optimal laparoscopic approach for inguinal hernia is controversial [11–15]. Recently, a guideline for laparoscopic hernia repair was also reported [16]. Contraindication of laparoscopic repair for inguinal hernia is not stipulated in the guideline [16]. It was not also stipulated about supravesical hernia, subtype of internal inguinal hernia, in this guideline [16].

Conventional inguinal approach for inguinal hernia might be often difficult to figure out rare subtype of internal hernia such as supravesical hernia. Laparoscopic hernia repair may make it possible to avoid overlooking of internal hernia such as supravesical hernia. Moreover it was possible to cover the hernia orifice and dissected layer of the dorsal site of urine bladder using bilateral approach in the current case. Patients diagnosed with unilateral supravesical hernia could be treated using same surgical technique of sufficient dissection of dorsal site of urine bladder at just affected side.

In conclusions, laparoscopic surgery may be an available procedure for supravesical hernia that is an exceptional subtype of internal inguinal hernia.

Conflicts of interest

All authors certify that they have no commercial associations that might pose a conflict of interest in connection with submitted article.

Funding

All authors certify that they have no sponsors regarding submitted article.

Consent

Written informed consent was obtained from the patient for the publication of this case report and any accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal.

Ethical approval

Ethics Committee’s approval is unnecessary for this case report, and written informed consent was obtained from the patient.

Competing interests

The authors declare that they have no competing interests.

Authors’ contributions

T.K., T.I., and K.Y. participated in the treatment, design, and analysis of this case report and drafted the manuscript. T.I., K.Y., and E.O directed demonstration of the manuscript. All authors read and approved the final manuscript.

Acknowledgement

We thank Daniel Mrozek who provided medical writing services on behalf of Medical English Service, Kyoto, Japan.

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