Tokai J Exp Clin Med., Vol. 51, No. 2, pp. 64–68, 2026

Simultaneous Laparoscopic Repair of Iatrogenic Lumbar and Inguinal Hernias Using Combined TAPP and IPOM: A Case Report

Yoshino ASAMI, Hideki IZUMI, Toshihito OGASAWARA, Masaya MUKAI, Junichi KANEKO and Hiroyasu MAKUUCHI

Department of Gastrointestinal Surgery, Tokai University Hachioji Hospital

(Received December 16, 2025; Accepted February 3, 2026)

Introduction: A lumbar hernia, an exceptionally rare abdominal wall defect, accounts for only 1.5–2% of all reported hernia cases. An inguinal hernia is most common type in adults. The simultaneous occurrence of these two distinct hernias is extremely uncommon; only a few cases have been documented to date. Herein, we report a rare case of concomitant iatrogenic lumbar hernia and indirect inguinal hernia that was successfully repaired in a single session using a combined laparoscopic approach.

Case presentation: A 74-year-old Japanese woman presented with a bulge and pain in the left flank and swelling in the left inguinal region 1 year following lumbar spinal surgery with bone graft harvesting from the left iliac crest. Computed tomography revealed an intestinal herniation above the left iliac crest and an omental herniation in the left inguinal region. Laparoscopic exploration confirmed a 6 cm × 7 cm lumbar defect containing the sigmoid colon and an indirect inguinal hernia. The lumbar hernia was repaired using a Symbotex™ Composite Mesh (20 cm × 15 cm; Medtronic, Minneapolis, MN, USA) fixed with absorbable tacks, and the inguinal hernia was repaired with a Bard® 3D Max® mesh (M size; Davol, Warwick, RI, USA) using the transabdominal preperitoneal (TAPP) approach. The total operative time was 120 min, and the postoperative course was uneventful. The patient was discharged on postoperative day 4.

Conclusions: This case demonstrates the technical feasibility and safety of simultaneous laparoscopic repair of iatrogenic lumbar and inguinal hernias using a combination of intraperitoneal onlay mesh (IPOM) and TAPP techniques. This strategy facilitates minimally invasive, effective, and simultaneous repair under a single anesthesia and hospitalization, highlighting the versatility of laparoscopic surgery in managing complex abdominal wall hernias.

Key words: TAPP, IPOM, Iatrogenic Lumbar, Inguinal Hernias

INTRODUCTION

Lumbar hernia is an exceptionally rare type of abdominal wall hernia, accounting for only 1.5–2% of all reported abdominal wall hernias [1]. This condition was first described in the 18th century when Petit identified the inferior lumbar triangle in 1783, followed by Grynfeltt in 1866, and Lesshaft in 1870, who reported the superior lumbar triangle [2]. These two anatomical weak points — the superior lumbar triangle (Grynfeltt–Lesshaft triangle) and the inferior lumbar triangle (Petit's triangle) — are potential sites of herniation. Clinically, lumbar hernias usually present with flank swelling or localized pain. However, such manifestations are nonspecific and often delay diagnosis. Cross-sectional imaging using computed tomography (CT) or magnetic resonance imaging (MRI) is essential for identifying anatomical defects and planning an appropriate surgical approach [3].

Lumbar hernias are classified as either congenital or acquired; the former is exceedingly uncommon, whereas the latter typically arises secondary to trauma, previous surgery, infection, or tumor resection [3]. Among the acquired types, iatrogenic lumbar hernia after iliac bone graft harvesting or spinal surgery is clinically significant, although available data remain limited [3]. In contrast, inguinal hernia — the most common abdominal wall hernia in adults — is among the most frequently encountered conditions in daily surgical practice [4].

Traditionally, lumbar hernias have been repaired using an open approach. However, advances in laparoscopic surgery have highlighted its advantages, including reduced invasiveness, decreased postoperative pain, earlier recovery, and superior cosmetic outcomes [5, 6]. Laparoscopy enables direct intraperitoneal visualization of the defect and broad reinforcement using a prosthetic mesh, making it a valuable alternative for lumbar hernia repair [7]. While standardized laparoscopic techniques, such as transabdominal preperitoneal (TAPP) and totally extraperitoneal (TEP) approaches, are well established for inguinal hernia repair, the limited number of lumbar hernia cases has prevented a consensus on the optimal surgical strategy.

The simultaneous occurrence of lumbar and inguinal hernias is extremely rare, and published reports remain limited. In particular, cases in which superior lumbar hernia (Grynfeltt–Lesshaft hernia) and in-

Hideki IZUMI, Department of Gastrointestinal Surgery, Tokai University Hachioji Hospital, 1838 Ishikawamachi, Hachioji, Tokyo 192-0032, Japan
Tel: +81-42-639-1111 Fax: +81-42-639-1112 E-mail: h_izumy@yahoo.co.jp

guinal hernia are repaired simultaneously in a single laparoscopic procedure are exceedingly uncommon [8]. Herein, we present a highly unusual case of concomitant iatrogenic lumbar and inguinal hernias that was successfully treated with one-stage laparoscopic repair. This case underscores both the technical feasibility and potential expansion of the indications for laparoscopic surgery in the management of complex abdominal wall hernias.

CASE PRESENTATION

A 74-year-old Japanese woman underwent surgery for lumbar spondylolisthesis in January 2024, during which autologous bone was harvested from the left iliac crest for spinal fusion. Approximately 1 year later, she noticed a bulge and pain in the left flank, accompanied by swelling in the left inguinal region, and was referred to our hospital for further evaluation.

Her medical history included eosinophilia treated with prednisolone (8 mg/day), bronchial asthma, hypertension, depression, osteoporosis, a cesarean section, and lumbar spondylolisthesis.

She smoked 10 cigarettes per day between the ages of 20 and 40 years and consumed approximately 350 mL of beer twice a week.

Upon admission, her height was 162.5 cm, weight 63.7 kg, and body mass index (BMI) 24.1 kg/m^2. In the supine position, a bulge extending from the left flank to the back was observed. Ultrasonography revealed herniation of the intestine, omentum, and adipose tissue beneath the surgical scar with the patient in the sitting position. Another herniated intestinal loop was identified lateral to the inferior epigastric vessels in the left inguinal region, indicating a left indirect inguinal hernia. Abdominal computed tomography (CT) revealed a herniation of the intestine above the left iliac crest (Fig. 1a) and omental herniation of the left inguinal region (Fig. 1b). Based on cross-sectional CT imaging, the defect was located posterior to the anterior axillary line and just above the left iliac crest. According to the European Hernia Society (EHS) classification (Table), this corresponds to an incisional lateral hernia classified as EHS L3/4–W2, given its anatomical location and an estimated defect width within the 4–10 cm range.

OPERATIVE FINDINGS AND PROCEDURE

Under general anesthesia, surgery was initiated with the patient in the right semilateral decubitus position. A 12-mm camera port was inserted into the umbilicus, and two 5-mm ports were placed on the right flank and left upper abdomen. Laparoscopic observation revealed a 6 cm × 7 cm hernial orifice located just above the left iliac crest, through which the sigmoid colon had herniated (Fig. 2a). The herniated sigmoid colon was carefully reduced into the peritoneal cavity,

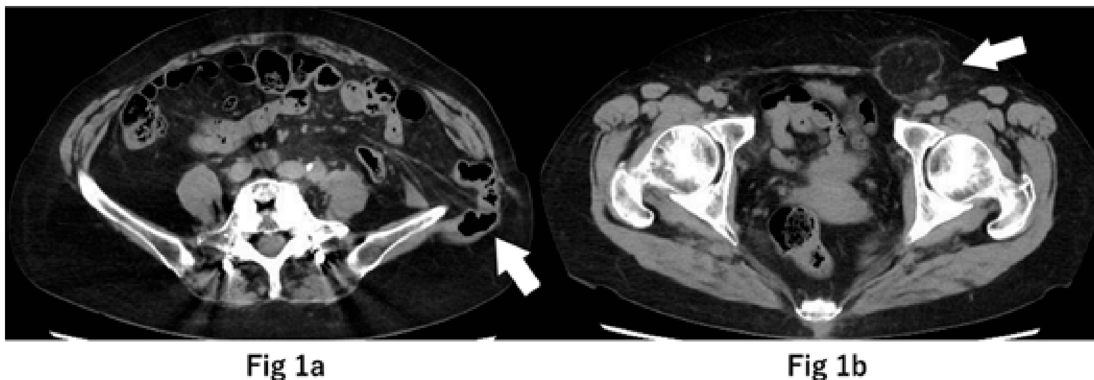

Fig. 1 Preoperative computed tomography (CT) findings.
(a) Herniation of the intestine above the left iliac crest (white arrow).
(b) Omental herniation in the left inguinal region (white arrow).

Table Overview of the European Hernia Society (EHS) classification system

EHS			
Incisional hernia classification			
Midline	Subxiphoidal	M1	
	Epigastric	M2	
	Umbilical	M3	
	Infraumbilical	M4	
	Suprapubic	M5	
Lateral	Subcostal	L1	
	Flank	L2	
	Iliac	L3	
	Lumbar	L4	
Recurrent incisional hernia?		Yes ○	No ○
Length	cm	Width	cm
Width	W1	W2	W3
cm	<4cm	≧4-10cm	≧10cm
	○	○	○

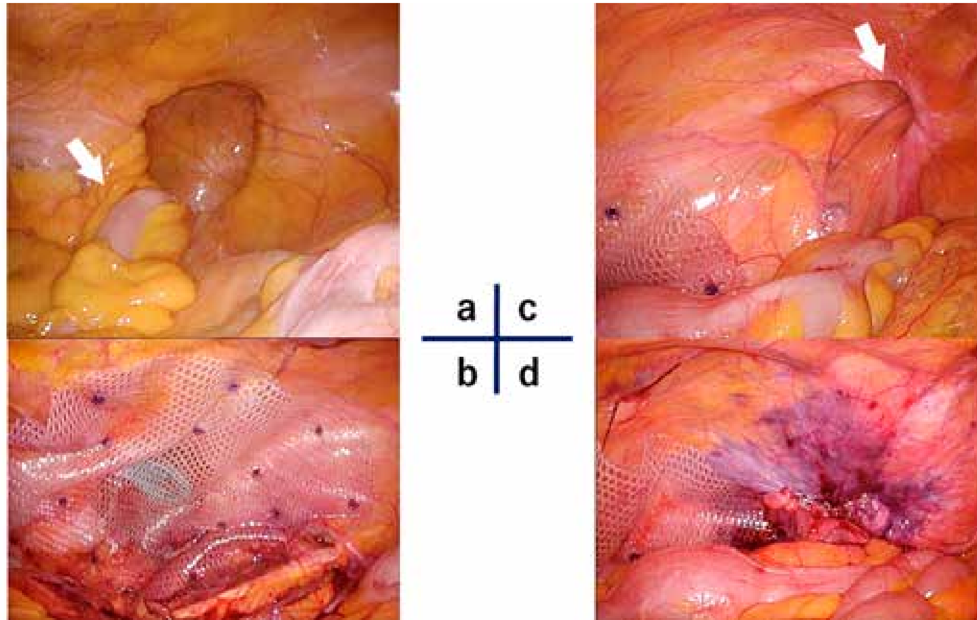

Fig. 2 Intraoperative findings.
(a) A 6 cm × 7 cm hernia orifice was identified in the left lateral abdominal wall, with the sigmoid colon herniating through the defect (white arrow).
(b) A Symbotex™ Composite Mesh (20 cm × 15 cm; Medtronic, Minneapolis, MN, USA) was inserted and fixed to the surrounding abdominal wall with absorbable tacks.
(c) A left indirect inguinal hernia was observed in the inguinal region (white arrow).
(d) The left indirect inguinal hernia was repaired using the transabdominal preperitoneal (TAPP) approach.

and the entire hernial defect was exposed. The hernia orifice measured approximately 6 cm × 7 cm in diameter.

A Symbotex composite mesh (20 cm × 15 cm; Medtronic, Minneapolis, MN, USA) was introduced into the peritoneal cavity. The mesh was deployed to cover the defect with an adequate margin and circumferentially fixed to the abdominal wall using absorbable tacks (AbsorbaTack™; Medtronic) (Fig. 2b). Subsequently, the 5-mm port in the left upper abdomen was relocated to the left lateral abdomen, and transabdominal preperitoneal (TAPP) repair was performed for the left inguinal hernia (Fig. 2c). The hernia sac was identified as an indirect inguinal hernia that had been completely dissected and reduced. A Bard 3D Max mesh (M size; Davol, Warwick, RI) was inserted and fixed using absorbable tacks. The peritoneum was then closed with a 3-0 V-Loc™ suture (Medtronic) in a continuous fashion, completing the TAPP repair (Fig. 2d).

After confirming hemostasis, all trocars were removed under direct vision, and the wounds were closed. The operative time was 120 min, with minimal blood loss. The postoperative course was uneventful, and the patient was discharged on postoperative day 4. There has been no evidence of hernia recurrence during the 4-month follow-up period.

DISCUSSION

Lumbar hernias account for only 1.5-2% of all reported abdominal wall hernias [1]. Its clinical manifestations, such as flank swelling or dull pain, are usually nonspecific, leading to a delayed diagnosis [2]. Cross-sectional imaging, particularly computed tomography (CT), is indispensable for identifying anatomical defects and evaluating herniated contents, thereby guiding surgical strategies [3]. Surgical repair is the preferred treatment for this condition. Traditionally, open repair with either primary suture closure or mesh reinforcement has been performed [4]. However, the lumbar region is anatomically complex with overlapping fascial and muscular layers, and open approaches can be associated with limited visualization and significant postoperative pain. Recent studies have demonstrated favorable outcomes of laparoscopic repair of lumbar hernias [7]. Laparoscopy allows for the direct intraperitoneal visualization of defects and enables broad mesh reinforcement. Consequently, it offers potential advantages, such as reduced recurrence, diminished postoperative pain, and improved cosmetic results. Nevertheless, owing to the rarity of lumbar hernias, standardized techniques and mesh fixation methods remain lacking. Although a preperitoneal approach such as TAPP was considered for the lumbar hernia, it was deemed less appropriate in this case. The defect was located posterior to the anterior axillary line with a broad lateral extension, requiring an extensive and deep preperitoneal dissection to access the retro-muscular plane near the iliac crest. Such a dissection would have substantially increased the risk of bleeding, nerve injury, and inadequate exposure of the dorsolateral margin. In contrast, an intraperitoneal onlay mesh (IPOM) approach enabled straightforward visualization of the entire defect, secure deployment of a large composite mesh with sufficient overlap, and avoidance of unnecessary lateral flap creation. Therefore, IPOM was selected as the safer and more feasible technique for this anatomical configuration. In

the present case, we utilized the Symbotex™ Composite Mesh (Medtronic), which incorporates a three-dimensional polyester structure combined with a resorbable collagen film, designed to promote tissue integration while minimizing intraperitoneal adhesions [9]. This feature enabled safe and effective repair of the defect without the need for a peritoneal incision, highlighting the clinical utility of this composite mesh in laparoscopic lumbar hernia repair.

Inguinal hernia is the most common type of abdominal wall hernia in adults, and laparoscopic approaches, such as transabdominal preperitoneal (TAPP) and totally extraperitoneal (TEP) repairs, have become standard management techniques [5, 6].

In contrast, lumbar hernias account for only 1.5–2% of all reported abdominal wall hernia cases, and their concomitant occurrence with inguinal hernias is rare. Consequently, clinical and academic reports of such synchronous presentations are limited. Peethambaran *et al.* recently reported an adult case of concomitant superior lumbar (Grynfeltt–Lesshaft) and inguinal hernias that were successfully repaired simultaneously using the TEP approach [8]. To the best of our knowledge, this is the first report of simultaneous repair of these two distinct hernia types. Our case is the second such report and is unique in that the inguinal hernia was repaired using the TAPP technique, while the lumbar hernia was treated using an IPOM approach. To date, no reports of combined TAPP and IPOM for the simultaneous repair of inguinal and lumbar hernias have been published, making this case the first of its kind. This case highlights that, even in rare concomitant hernia presentations, laparoscopic surgery allows for a flexible combination of different approaches tailored to each anatomical site, thereby enabling safe and reliable simultaneous repair. Moreover, completing both repairs under a single general anesthesia and hospitalization offers important advantages in terms of minimally invasive treatment, early recovery, and efficient use of healthcare resources.

This case is of particular academic importance, as it demonstrates the successful simultaneous repair of an iatrogenic lumbar hernia and an inguinal hernia using laparoscopic techniques. By tailoring the surgical approach to each anatomical site, safe and reliable repair was achieved, thereby underscoring the flexibility and broad applicability of laparoscopy in the management of complex abdominal wall defects. Simultaneous repair provides substantial clinical advantages, allowing both hernias to be treated in a single anesthetic session and hospitalization. This strategy facilitates earlier postoperative recovery and return to daily activities. Beyond its minimally invasive nature, this approach has significant implications for efficient use of healthcare resources and cost-effectiveness in surgical practice. Given the rarity of lumbar hernias, standardized treatment strategies remain lacking. The accumulation of additional reports and evaluation of long-term outcomes is essential to define the role of laparoscopic repair in this setting. Our case contributes to this growing body of research and supports the view that laparoscopy is a valuable therapeutic option, even for uncommon and complex hernia presentations.

CONCLUSION

This case demonstrates the technical feasibility and safety of simultaneous laparoscopic repair of iatrogenic lumbar and inguinal hernias using a combination of intraperitoneal onlay mesh (IPOM) and TAPP techniques. This strategy facilitates minimally invasive, effective, and simultaneous repair under a single anesthesia and hospitalization, highlighting the versatility of laparoscopic surgery in managing complex abdominal wall hernias.

ACKNOWLEDGMENTS

The authors would like to thank Editage for English language review.

DECLARATIONS

Ethics approval and consent to participate

This work does not require ethical considerations or approval. Informed consent to participate in this study was obtained from the patient. Patient privacy was protected and this report did not include any patient-identifying information. A copy of the written consent form is available for review by the Editor-in-Chief of the journal.

Consent for publication

The patient described in this manuscript provided informed consent for publication of their clinical details.

Availability of data and materials

Not applicable.

Competing interests

JK has received research funding from Anaut Inc, which is unrelated to the submitted work.

The other authors declare that they have no competing interests.

Funding

This study received no funding.

Authors' contributions

YA, HI, TO, MM, JK, and HM performed surgery and postoperative management. All the authors have read and approved the final version of this manuscript.

Authors' information

Department of Gastrointestinal Surgery, Tokai University Hachioji Hospital, 1838 Ishikawa, Hachioji, Tokyo 192-0032, Japan

LIST OF ABBREVIATIONS

CT, computed tomography; EHS, European Hernia Society; MRI, Magnetic resonance imaging; TAPP, Transabdominal preperitoneal (repair); TEP, total extraperitoneal (repair); IPOM, Intraperitoneal onlay mesh

REFERENCES

1) Moreno-Egea A, Torralba-Martínez JA, Morales G, *et al.* Open vs laparoscopic repair of secondary lumbar hernias: a prospective nonrandomized study. Surg Endosc 2005; 19: 184–7.
2) Loukas M, El-Zammar D, Shoja MM, *et al.* The clinical anatomy

of the triangle of Grynfeltt. Hernia 2008; 12: 227–31.

3) Moreno-Egea A, Baena EG, Calle MC, *et al.* Controversies in the current management of lumbar hernias. Arch Surg (Chicago, Ill : 1960) 2007; 142: 82–8.
4) Jenkins JT, O'Dwyer PJ. Inguinal hernias. BMJ (Clinical research ed) 2008; 336: 269–72.
5) Bittner R, Bingener-Casey J, Dietz U, *et al.* Guidelines for laparoscopic treatment of ventral and incisional abdominal wall hernias (International Endohernia Society (IEHS)-part 1. Surg Endosc 2014; 28: 2–29.
6) McCormack K, Scott NW, Go PM, *et al.* Laparoscopic techniques versus open techniques for inguinal hernia repair. Cochrane Database Syst Rev 2003; 2003: Cd001785.
7) Suarez S, Hernandez JD. Laparoscopic repair of a lumbar hernia: report of a case and extensive review of the literature. Surg Endosc 2013; 27: 3421–9.
8) Peethambaran MS, Rajendran RR, Murthy NG. Totally extraperitoneal repair of grynfeltt's hernia: easy solution for a rare problem. Cureus 2024; 16: e74743.
9) Gillion JF, Lepere M, Barrat C, *et al.* Two-year patient-related outcome measures (PROM) of primary ventral and incisional hernia repair using a novel three-dimensional composite polyester monofilament mesh: the SymCHro registry study. Hernia 2019; 23: 767–81.