Laparoscopic repair of inguinoscrotal hernia containing the urinary bladder

Department of Surgery, Kashiwa Kousei General Hospital

Norimasa Koide, Momoko Sugimoto, Sakata Kazuki, Kenji Iwasaki, Kenta Kitamura, Tomonori Matsumura, Shinsuke Usui, Koichi Kozaki, Yoshinobu Sato, Motoi Koyama, Kazuhiro Karikomi, Hiroyuki Nomori, and Tatsushi Suwa

Introduction:

Inguinoscrotal hernia (ISH) of the urinary bladder is an extremely rare condition involve in less than 1-4% of inguinal hernia. In most cases, it occurs to men older than 50 years who are overweight. Because most hernias are diagnosed through physical examination without preoperative radiological examination, only 7% of inguinal bladder hernias are diagnosed before herniorrhaphy. Moreover, 16% of these conditions are discovered after intraoperative or postoperative complications such as bladder injury or bladder leakage.

Herein we report an IHS of the urinary bladder diagnosed prior to operation and repaired by laparoscopic transabdominal preperitoneal repair.

Methods and procedures:

A 63-year-old Japanese man was admitted our hospital complaining of a bulge and pain in his right inguinal region. And he was diagnosed as inguinal hernia in America 20 years ago. His medical history includes an appendectomy and a cerebral infarction. He also has a penicillin allergy. Physical examination revealed a large, nonreducible right-side scrotal mass. The patient was 167 cm tall, weighted 93 kg, and had a body mass index of 33 kg/m2. The abdominal computed tomography and magnetic resonance imaging demonstrated an ISH containing fat and a substantial portion of the patient's bladder (Fig1). An ISH of the urinary bladder was diagnosed, and laparoscopic transabdominal preperitoneal mesh repair was planned after weight reduction.

The 12mm camera port was inserted at the umbilicus with open method. Pneumoperitoneum was maintained with CO2 and a flexible laparoscope was inserted. Two additional 5mm ports were placed next to the right and left four fingers of the first port. Intraoperatively many hernia orifices were observed at the right-side inguinal region. Following incision of the peritoneum and right inguinal dissection, the bladder and fat were carefully mobilized from dense adhesions and completely released to the retroperitoneal space without injury. The final diagnosis of right indirect ISH containing the urinary bladder was made. A large 3DMax Light Mesh was laid over the myopectineal orifice (Fig. 2).

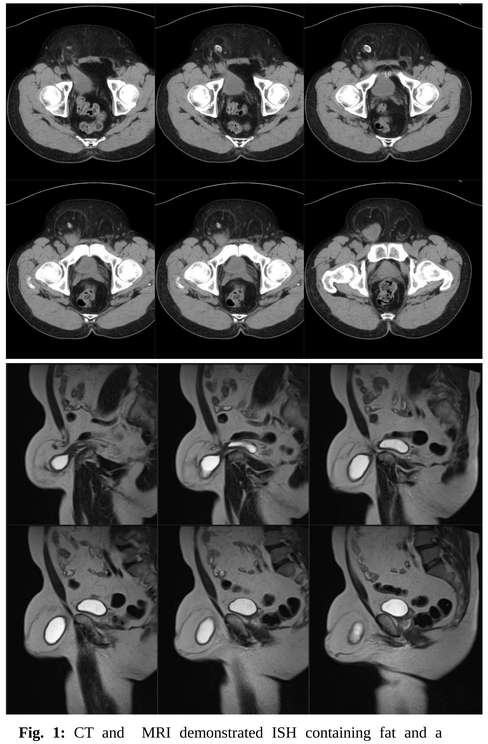


Fig. 1: CT and MRI demonstrated ISH containing fat and a substantial portion of the patient's bladder.

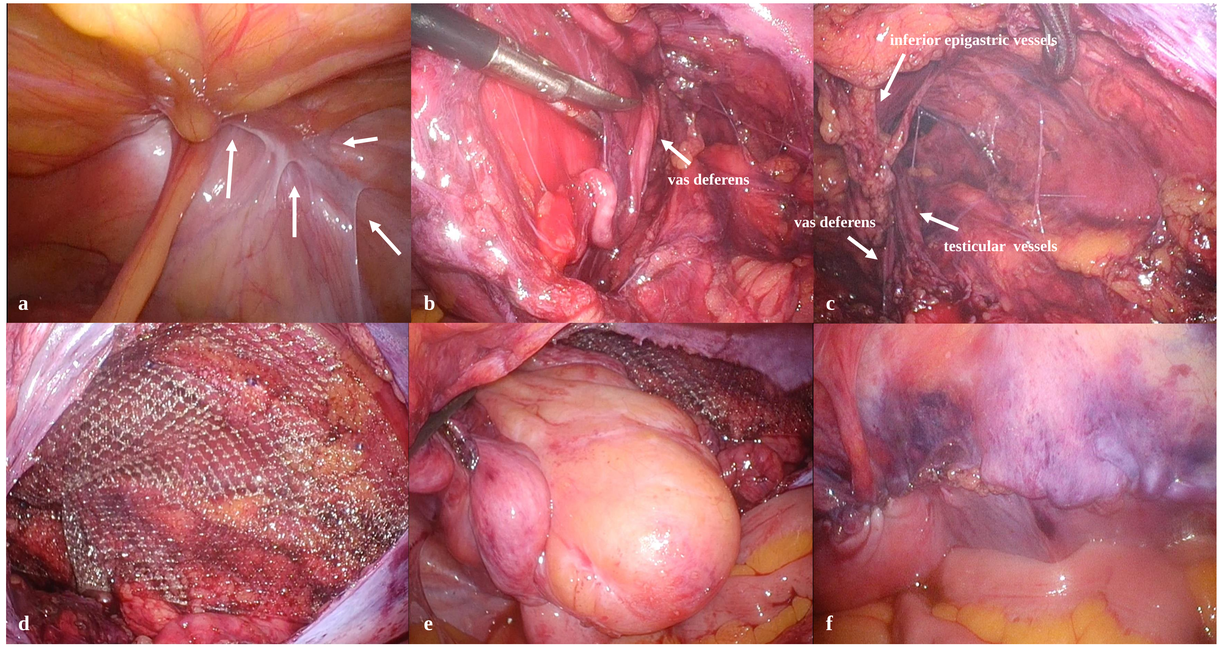


Fig. 2: Operative findings. **a** Laparoscopic observation revealed right inguinal hernia with many hernia orifices (arrows). **b** The vas deferens (arrow) was dissected carefully. **c** The protruding bladder and fat tissue was reduced carefully from the inguinal canal, and the diagnosis of indirect ISH was made. **d** The right myopectineal orifice was repaired with a mesh. **e** The protruding bladder and fat mobilized from inguinal canal was replaced to the retroperitoneal space. **d** peritoneal closure using barbed suture

Results:

Total operative time was 247 minutes. The estimate blood loss was small amount. There was no conversion to open repair. The perioperative period was uneventful. The patient was discharged on 4 postoperative days and remained asymptomatic at 12 months follow-up and had no evidence of hernia recurrence.

Discussion:

The complexity of ISH of the urinary bladder as well as the difficult anatomy of the pelvis inguinal region makes any surgical approach challenging. Open repair of these hernias is the most common approach.

However, laparoscopic surgery provides several advantages including improved visibility of the bladder and surrounding structures, rapid recovery, less pain, and improved cosmesis.

Conclusion:

CT and MRI provide potentially the most detailed information for diagnostic and surgical planning purposes. Laparoscopic repair may be useful and one of the treatments of difficult case of IHS of the urinary bladder.