



Letter

Neobladder as content in inguinal herniation—A rare late complication



Dear editor,

Secondary inguinal herniation of intraperitoneal content represents a late complication following radical cystectomy. We present a case of an inguinoscrotal hernia with Studer ileal neobladder as a content following post radical cystectomy for bladder cancer 10 years ago. Exploration revealed herniation of Studer ileal neobladder along with few ileal loops. Neobladder in hernial sac was reduced and reinforcement with prolene mesh was done. To our knowledge this is the first case report on neobladder herniation into the scrotum.

Secondary inguinal herniation of intra peritoneal contents represents a rare and late complication following procedure such as radical cystectomy with an incidence of 1.0%–9.7% [1–4]. Risk factors are smoking, chronic cough, straining on micturition or straining on defecation and obesity [5]. Symptoms are swelling with or without pain with change in urinary function. The main treatment is surgery [1,2,6]. We describe a rare case of a 69-year-old man who presented with inguinoscrotal herniation of Studer ileal neobladder following radical cystectomy and ileal neobladder for bladder cancer.

The 69-year-old male patient underwent the standard operative procedure of open radical cystectomy with bilateral iliac lymph node dissection and Studer ileal neobladder for invasive bladder cancer in 2008. The pathological stage was PT2N0M0. Patient came for follow-up for 2 years. He was voiding with abdominal pressure with a post void residue of 50 mL and requiring intermittent catheterization. There was no recurrence in that period. Then he was lost for follow-up for 8 years.

The patient presented with fever for 2 days and complaints of swelling in the right inguino scrotal region for 6 years. It was not associated with pain or lower urinary tract symptoms. He did not have constipation. On examination, there was a large swelling in the right inguinoscrotal region

with presence of cough impulse suggestive of right Inguino-scrotal hernia (Fig. 1A). Urine culture was positive and was treated appropriately in view of fever and pain. Renal biochemistry showed elevated parameters (serum creatinine 2.7 mg/dL, potassium 4.6 mmol/L and bicarbonate 18 mmol/L; suggestive of acidosis). Computed tomography revealed neobladder in the scrotum along with few ileal loops and bilateral hydro-ureteronephrosis (Fig. 1B). With a mid-line incision, exploration revealed herniation of Studer ileal neobladder along with few ileal loops through a wide neck of right inguinal ring. Neobladder and ileal loops could be easily reduced (Fig. 2A) and reinforcement with prolene mesh was done (Fig. 2B) and wound closed in layers after drain placement. Post-operative period was uneventful. Drain was removed on 7th postoperative day and the patient was discharged with catheter on 9th postoperative day. Cystogram was done at end of 3 weeks showed neobladder back in the pelvis (Fig. 2C). The patient remained asymptomatic at the end of 3 months. Follow-up ultrasound revealed decrease in the hydroureteronephrosis. He was voiding with abdominal pressure with a maximum flow of 7 mL per second and residual urine of 50 mL. He was also taught intermittent self-catheterization once daily. The patient remained asymptomatic at the end of 3 months. The renal function stabilized with a creatinine value of 1.5 mg/dL.

From the beginning of 1900s, innovative surgeons preferred the best method for replacing the original bladder, following removal for either benign or malignant disease. Main principle of bladder substitution is allowing volitional voiding through the urethra and also eliminating the need for an intermittent catheterization or cutaneous urinary stoma [7].

Complications were classified into early and late. Early if they occurred within the first 30 days after surgery and late if they occurred thereafter. Early complications are wound infection, wound dehiscence, pouch leak, bleeding, urinary tract sepsis, urine leakage (from ureter, reservoir or urethral anastomosis), chest infection and pulmonary embolus. Late complications are metabolic acidosis, inguinal hernia, need for intermittent catheterization, neobladder calculi, upper urinary tract calculi, urethroileal anastomotic stricture, febrile urinary tract infection, incisional hernia, and small bowel obstruction [7,8]. Other factors that can also play a role in both early and late complications are prior radiation therapy, diabetes, and other comorbidities [7].

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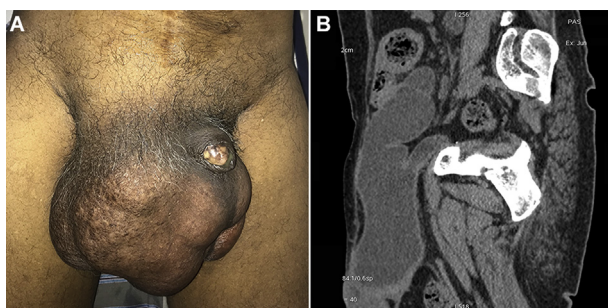


Figure 1 Clinical and CT Scan picture. (A) Clinical examination revealing Inguinoscrotal hernia; (B) Computed tomography revealing neobladder in scrotum along with ileal loop. CT, computed tomography.

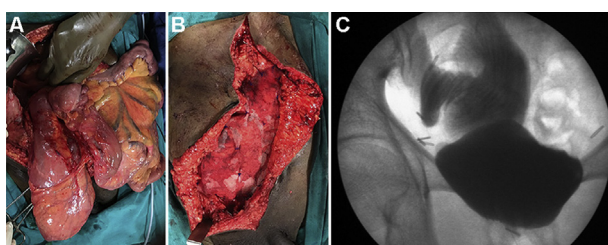


Figure 2 Surgery and post operative cystogram picture. (A) Neobladder seen outside being reduced; (B) Mesh hernioplasty; (C) Post operative cystogram.

According to Hautmann, the late complications increase with time and are best described using Kaplan–Meier curves. Ventral hernias are quite common and may be in part related to the need for increased abdominal pressure to empty the neobladder. The poor fascial strength associated with advanced age and smoking undoubtedly contributes to this risk as well [7]. The cause for the inguinal hernia is mainly due to the need to strain to void [1]. In the author's series, out of 230 cases of Studer ileal neobladder (unpublished) two patients had incisional hernia. This particular patient came with a very rare late complication of herniation of neobladder into inguinoscrotal region. This could have occurred due to voiding by abdominal straining as he was not practicing self intermittent catheterization and probably unrelated to any technical difficulties. Surgical tricks to reduce herniation are tacking the omentum over the suture line on the anterior aspect of neobladder, and promoting adhesion by placing suprapubic catheter and ureteric catheters. The use of intermittent self-catheterization also helps to reduce straining to pass urine and hence the chance of herniation.

Tanaka et al. [1], Steven and Poulsen [3], Studer and Zingg [4] and Meyer et al. [6] reported an incidence rate of inguinal hernia of 1.2%–1.9% and the incidence of incisional hernia of 0.8%–10.2% among those who underwent orthotopic neobladder.

In the above series bowel alone was the content in the hernias. However in the author's case, neobladder was one of the contents in the inguinoscrotal hernia.

For inguinal herniation, surgical treatment is either open or laparoscopic abdominal approach with placement of prolene mesh. However mesh use has a possible risk of infection. A rather novel approach is use of biological mesh grafts. Side effects include possible allergic reaction and seroma. Nevertheless in future biological meshes are expected to be a promising treatment option for inguinal hernia with acceptable morbidity [9,10].

Orthotopic neobladder substitution has now become the procedure of choice following radical cystectomy with an acceptable complication rates in properly selected patients. However, each reconstructive method is associated with specific problems and complications. In our case we were able to overcome this late rare complication of neobladder herniation with a good functional result. To our knowledge this is the first case report on neobladder herniation into the scrotum.

Author contributions

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Critical revision of the manuscript: Senthil Kallappan; Manickam Ramalingam; Sivasankaran Nachimuthu.

Conflicts of interest

The authors declare no conflict of interest.

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