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Case Report

Sigmoido-vesical fistula secondary to hernia mesh migration; a long-term rare complication of laparoscopic transabdominal preperitoneal inguinal hernia repair

Anuj Mehta*, Nilay Kandoi, Meet Godhani, Kotha Nikhil Reddy, Vishva Patel

Department of General Surgery, New Civil Hospital, Surat, Gujarat, India

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***Correspondence:**
Dr. Anuj Mehta,
E-mail: Anujmehta_101@yahoo.com

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ABSTRACT

A 47-year old male presented with frequent urinary tract infections (UTIs), hematuria and pneumaturia with a past history of laparoscopic bilateral inguinal hernia repair 5 years ago. Ultrasonography (USG) and contrast enhanced computed tomography did not furnish any evidence to arrive at a diagnosis, interestingly, cystoscopy revealed a mesh in the urinary bladder making apparent the diagnosis of Sigmoido-vesical fistula secondary to mesh migration. Later, surgical removal of the mesh from the sigmoid colon and urinary bladder with rent closure of the fistulous opening was done successfully. Our case thus, highlights the long-term rare complication of transabdominal preperitoneal (TAPP) surgery.

Keywords: Sigmoido-vesical fistula, Enterovesical fistula, Hernia mesh migration, Complication of lap hernia repair

INTRODUCTION

Inguinal hernia repair can be done by either open approach or laparoscopic approach, with or without putting mesh. With advancement in medical science more and more cases are dealt with minimal invasive approach. But every innovation has downside too. Laparoscopic inguinal hernia repair (TAPP) has been associated with increased risk of mesh migration that ultimately can lead to fistulous communication between surrounding organs. Sigmoido-vesical fistula is one of them and it refers to an abnormal communication between the sigmoid colon and the urinary bladder.

Although it is rare, Sigmoido-vesical fistula most frequently occur as a consequence of advanced-stage disease or due to traumatic or iatrogenic injuries.[1]

We report a case of Sigmoido-vesical fistula secondary to hernia mesh migration in a operated case of laparoscopic inguinal hernia repair (TAPP).

CASE REPORT

A 47 years old male patient presented to us with complaints of burning micturition and fever since last 8 months. Initially he went to some private hospital and he was treated with Antibiotics and other symptomatic medications. After improvement in his symptoms, which lasted only for few weeks, they reappeared but this time with passage of blood clots in urine. This was alarming for him so; he again went to physician. This time he was advised to get done USG-KUB. The USG was suggestive of 12mm sized echogenic area attached to left lateral wall of Urinary Bladder in non-dependent position, so it was more likely of calcification rather than calculus (as it was non-dependent). This prompted the treating physician, and he further advised CT-urography. On CT-urography (Figure 1) patient had abnormal heterogeneously enhancing mass like soft tissue lesion at left iliac fossa, medially involving left lateral wall of urinary bladder and laterally involving the sigmoid colon with probably fistulous tract like communication. This lesion shows adhesion with inferior epigastric artery on left side and

abuts left external iliac vein. Overall s/o pseudo-mass like lesion rather than neoplastic etiology. After this patient was referred to us. On detailed history taking, we came to know that patient underwent laparoscopic bilateral hernia surgery 5 years ago at some private hospital in same city. He also added that air bubbles were noticed in urine stream.

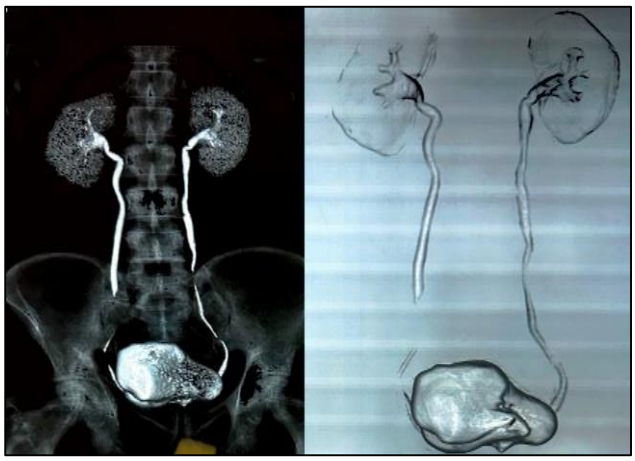

Figure 1: CT urography images of left iliac fossa mass involving left lateral aspect of bladder.

After admission, all routine investigations were done to get surgery fitness and he was kept in next available Routine OT-list for diagnostic cystoscopy. On performing diagnostic cystoscopy there was protrusion of hernia mesh along with calcification over it into the bladder through left anterior aspect of dome of urinary bladder (Figure 2).

With the help of resectoscope few biopsies taken from bladder wall and sent for histopathological evaluation. Intra-op condition and further plan of action was explained to patient's relative, and after taking consent we proceeded with exploratory laparotomy to remove the hernia mesh.

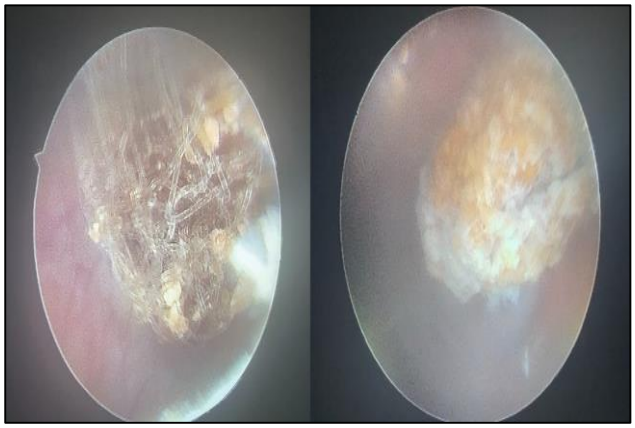

Figure 2: Cystoscopy revealed protrusion of hernia mesh into urinary bladder (left) and overlying calcification (right).

We did exploratory laparotomy with lower midline incision. On opening the peritoneal cavity, sigmoid colon densely adhered to parietal peritoneum on lateral aspect and to urinary bladder on medial aspect. With meticulous dissection sigmoid colon was separated from peritoneal lining. The hernia mesh which was kept in pre-peritoneal layer 5 years ago, was entering the lumen of sigmoid colon at deep inguinal ring on left side. After separating sigmoid colon from peritoneum (Figure 3), we further dissected sigmoid from urinary bladder without damaging the ureters or left external iliac veins. The mesh was extending from pre-peritoneal layer to sigmoid colon and through it into the urinary bladder. The mesh was removed from urinary bladder and margin was trimmed. Approx. 3x2 cm^2 sized rent in the left anterior aspect of bladder dome was repaired with vicryl 2-0 in double layer after putting suprapubic cystostomy catheter through separate opening. The sigmoid colon defect was closed primarily with PDS 2-0 in single layer. Omentum was kept between the sigmoid and peritoneal lining to prevent future erosion due to remnant hernia mesh. One abdominal drain was kept on left side near the fistula repair site.

Post-operative course was un-eventful, and we removed abdominal drain on 5^{th} post-op day and started oral feeding from 5^{th} post-op day after confirming peristalsis. Patient was successfully discharged from hospital and kept in follow-up for removal of SPC and foley's catheter after 10 days and 14 days respectively.

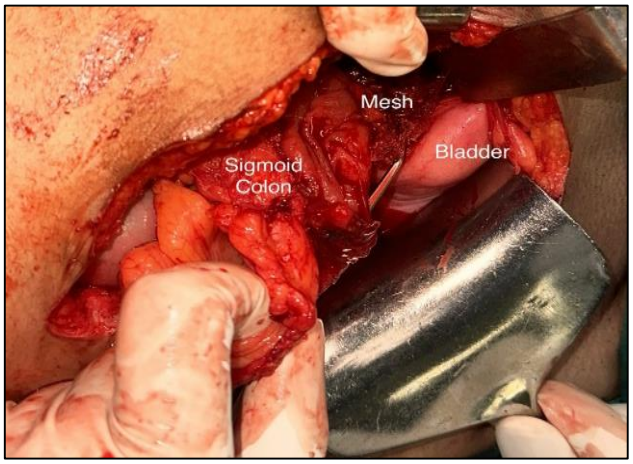

Figure 3: Intra-op image showing dissected sigmoid colon along with hernia mesh and urinary bladder.

DISCUSSION

Inguinal hernia repair can be done by either open approach or laparoscopic approach. It can be herniorrhaphy or hernioplasty depending on whether mesh is used or not. The use of mesh during laparoscopic hernia repair has led to reduction in the risk of recurrence of around 30-50%. However, recurrence rate between laparoscopic and open method is similar.[2] With advancement in medical science more and more cases are

dealt with minimal invasive approach. Laparoscopic hernia repair is now being done for all types of inguinal hernia because of shorter hospital stay, minimal scar, low rates of recurrences and chronic pain and only relative contraindication is extensive adhesions after previous major surgery in the lower abdomen.[3] But every innovation has downside too. Laparoscopic inguinal hernia repair (TAPP) has been associated with increased risk of mesh migration that ultimately can lead to fistulous communication between surrounding organs. The most important factors behind this are lack of mesh fixation and incomplete closure of peritoneum over mesh.[4] One more probable reason is secondary migration which occurs due to foreign body reaction mediated erosion.

Mesh migration can occur after any ventral or incisional abdominal hernia surgery.[5] It can involve cecum on right side and sigmoid colon on left side, if not treated early can lead to further fistulous communication with urinary bladder.[6] High degree of suspicion is needed for patient who presents with recurrent sepsis, UTI, lower abdominal pain, hematuria, pyuria and has past history of laparoscopic inguinal hernia repair to detect this entity.[7] Once diagnosis is confirmed with cystoscopy or other non-invasive imaging modality, further management includes laparotomy with complete or partial removal of mesh with partial cystectomy with primary repair of bladder.[8-10]

Sigmoido-Vesical Fistula due to mesh migration subsequent to laparoscopic hernia repair is rare incident, with only few cases being reported in literature till date. This leads to make us think, is it time to stop doing hernia surgery with TAPP repair, when we already have gold standard Lichtenstein repair that can be done under spinal or even local anesthesia?

CONCLUSION

Sigmoido-vesical fistula due to mesh migration subsequent to laparoscopic hernia though a very rare presentation, can be easily be diagnosed in symptomatic patients (frequent UTIs, hematuria, pneumaturia) presenting years after hernia repair if there is a high index of suspicion. The fistula can be avoided by simply adhering to gold standard Lichtenstein repair. Although repair of Sigmoido-vesical fistula can be done in one stage manner without creating stoma or two stage manner with second stage being stoma closure.

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