

Endoscopic management of hernia repair fixing tacks embedded in the bladder wall: A case report

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Abstract

Background: Migration of fixing tacks into the bladder wall is a rare complication following laparoscopic hernia repairs. **Case presentation:** This report detailed an 80-year-old male who presented to the clinic with hematuria. Cystoscopy revealed a bladder calculus adherent to the bladder wall, with an underlying metallic tack. A stent snare was used to secure the edges of the tack, and a resectoscope loop was carefully used to resect and free it from surrounding mucosa. **Conclusion:** This was the first case report to describe the successful removal of a metallic fixing tack from the bladder through a transurethral approach in a patient post-hernia repair.

Keywords: Endourology, Lower urinary tract symptoms, Stones

1. INTRODUCTION

Fixing tack migration into the bladder wall is a rare complication following laparoscopic hernia repairs, with limited reports on its surgical management. We described a case in which a fixing tack that migrated into the bladder was successfully removed endoscopically.

2. CASE PRESENTATION

An 80-year-old male presented to the urology clinic with a 1-month history of light macrohematuria. His medical history included a left laparoscopic inguinal hernia repair over 30 years ago, benign prostatic hyperplasia, and hypertension. He was on a daily regimen of dutasteride–tamsulosin (0.5 mg/0.4 mg) and candesartan (16 mg). The patient had a body mass index of 32 kg/m², was an active smoker, and had migrated from Egypt 5 years ago. His serum hemoglobin and renal function were normal, and his urinalysis showed no bacterial growth. A contrast-enhanced computed tomography (CT) of the abdomen revealed an enlarged prostate (100 cc) and three calcified, lobulated lesions (8–11 mm) along the bladder wall, with no evidence of hydronephrosis. No urographic phase was performed. Differential diagnoses included tuberculosis, schistosomiasis, bladder calculi, or a bladder tumor with calcifications (Figure 1). The patient was scheduled for an elective cystoscopy and possible transurethral resection of the bladder tumor in 1 month.

Intraoperatively, cystoscopy revealed a bladder calculus adherent to the left anterolateral bladder wall without any associated lesions. Dislodging the calculus revealed an

underlying metallic tack (Figure 2). A Cook 4.5Fr 65 cm NSnare stent retriever (Cook Medical, United States) was used to secure the tack's edges, and a resectoscope loop (5 mm resectoscope, Karl Storz, Germany) was employed to carefully resect and free the tack from the surrounding mucosa. The extraction site demonstrated a small amount of perivesical fat, but no bladder perforation. Hemostasis was achieved by cauterizing the base and edges of the site. A 22Fr 3-way urinary catheter (Bard, United States) was placed post-procedure with continuous irrigation. No cystogram was performed due to the lack of concern for perforation. The patient was discharged the following day after a successful trial of voiding, with no post-operative complications. A follow-up cystoscopy 4 weeks later demonstrated an expected scar with no bladder wall defect. The patient remained asymptomatic and was referred back to his family doctor.

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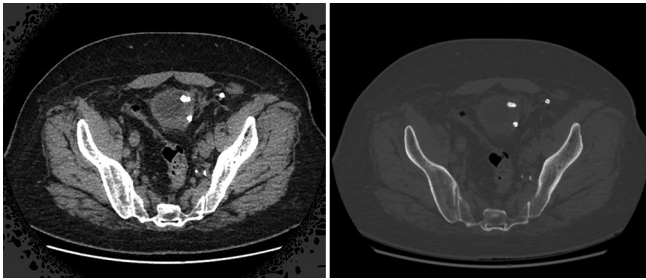


Figure 1. Computed tomography of the abdomen demonstrates three small calcified lesions.

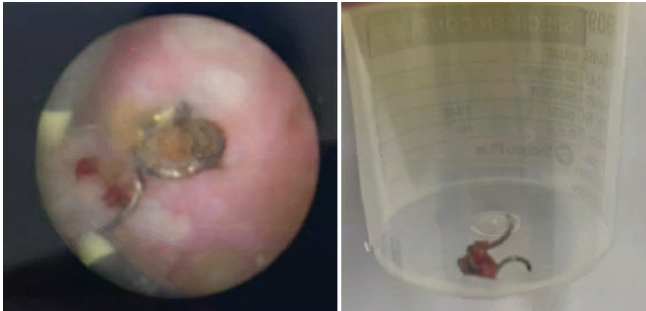


Figure 2. Metallic tack eroding into the bladder urothelium.

3. DISCUSSION

Tack fixation is widely used for laparoscopic mesh fixation in hernia repairs, but tack migration into the bladder is a rare complication. It likely occurs due to a combination of foreign body-induced chronic inflammation at the tissue-mesh interface, along with constant mechanical forces within the abdomen. This is especially relevant in the presence of risk factors, such as obesity, smoking, and increased bladder volume secondary to an enlarged prostate [1]. In this case, a retrospective review of the initial CT scan using a “bone window” more definitively characterized the calcification as a coil, with a density of approximately 1500 HU (Figure 1).

The approach to removing tacks from the bladder varies in the literature. Liu *et al.* [1], described an open partial cystectomy to remove four tacks and mesh from the bladder. Kishor *et al.* [2] reported a laparoscopic approach to the removal of mesh and tacks. Tonyali [3] attempted a transurethral approach to remove three tacks using grasping forceps after laparoscopic colposuspension surgery, but the procedure was unsuccessful and subsequently abandoned. Batura *et al.* [4] reported 12 weeks of cystoscopic surveillance for a patient with tack migration into the bladder, but the patient subsequently developed intestinal obstruction secondary to adhesions from other tacks within the peritoneal cavity.

This case represents the first successful report of a transurethral approach to removing a metallic fixing tack from the bladder. The success of this approach may be attributable to the tack’s favorable positioning, the absence of significant

calcifications or infection, and advancements in endoscopic techniques and instruments.

4. CONCLUSION

In patients with a history of laparoscopic hernia repairs, migration of fixing tacks into the bladder should be considered if they present with hematuria, lower urinary tract symptoms, or suspicious findings on CT. An endoscopic approach using a stent snare and resecting loop may be a viable first-line option for removing fixing tacks before considering more invasive methods. A follow-up cystoscopy post-endoscopic tack removal is recommended to ensure adequate healing of the urothelium.

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CONFLICT OF INTEREST

The authors declare no conflict of interest.

AUTHOR CONTRIBUTIONS

Conceptualization: Tran Ngoc An Huynh, Liang Qu, Antonio De Sousa

Data curation: Tran Ngoc An Huynh

Investigation: Tran Ngoc An Huynh

Methodology: Tran Ngoc An Huynh

Writing - original draft: Tran Ngoc An Huynh

Writing – review & editing: Liang Qu, Shekib Shahbaz, Paul Manohar, Scott Donnellan, Antonio De Sousa.

ETHICS APPROVAL AND CONSENT TO PARTICIPATE

Consent was obtained from the patient.

CONSENT FOR PUBLICATION

Informed consent of the patient was obtained for publishing his data/image in this paper.

AVAILABILITY OF DATA

All data generated or analyzed during this study are included in this published article.

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