A Calcified Foreign Body in the Bladder due to a Displaced Tack: An Unusual Complication After Laparoscopic Incisional Hernia Repair

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Abstract: We report a rare complication caused by a displaced tack after laparoscopic incisional hernia repair. A 41-year-old woman treated 11 months earlier for a suprapubic incisional hernia (Pfannenstiel laparotomy) received a laparoscopic repair with a bilaminar mesh fixed with tacks. Seven months later, she presented miccional irritative symptoms and chronic lower abdominal pain. Leucocyturia and microhernematuria were present, and computerized tomography showed 2 calcified nodules in the bladder wall. Cystoscopy confirmed 2 calcified foreign bodies in the bladder due to the tack fixation. She underwent an intra-abdominal laparoscopic exploration, which showed the protrusion of a mesh in the urinary bladder. The tacks were removed and a partial laparoscopic cystectomy including mesh protrusion was performed. The patient was discharged from hospital 4 days later without postoperative complications. At follow-up 24 months after surgery, she remains well with no pain, urinary symptoms, or hernia recurrence.

Key Words: displaced tacks, laparoscopic incisional hernia complication, calcified foreign body in urinary bladder

Laparoscopic repair of incisional hernia is a minimally invasive surgical procedure that has established itself as a valuable alternative in incisional hernia treatment. A meta-analysis comparing this procedure with the open approach confirmed that laparoscopic repair is safe and presents minimal postoperative morbidity, short hospital stay, and a low recurrence rate.1

Spiral titanium tacks are routinely used for mesh fixation in these procedures. Although complications related to use of spinal tacks seem to be rare, isolated incidences have been described (for instance, nerve entrapment and bowel perforation) after laparoscopic repair of wall defects.2–6

Bladder calcification with subsequent stone formation after laparoscopic repairs has been reported in a few cases after herniorrhaphy. The case reported here is the first case in incisional hernia.

CASE REPORT

A 41-year-old woman treated 11 months earlier for a suprapubic incisional hernia (Pfannenstiel laparotomy) received laparoscopic repair with a bilaminar mesh fixed with tacks.

Eleven months later, she presented miccional irritative symptoms and chronic lower abdominal pain. Leucocyturia and microhernematuria were present, but no evidence of infection was seen in urine culture. Computerized tomography showed 2 calcified nodules in the bladder wall (Fig. 1).

Cystoscopy confirmed 2 calcified foreign bodies in the bladder due to the tacks fixation (Fig. 2). The patient underwent an intra-abdominal laparoscopic exploration, which showed a mesh protrusion in the urinary bladder. The tacks were removed and a partial laparoscopic cystectomy including mesh protrusion was performed. It was not necessary to re-repair the hernia defect (Fig. 3). The patient was discharged from hospital 4 days later without postoperative complications. At follow-up 24 months after surgery, she remains well with no pain, urinary symptoms, or hernia recurrence.

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DISCUSSION

Laparoscopic incisional hernia treatment has become increasingly popular because of reports of reductions in hospital stay, postoperative pain, risks of infection, complication rates, and recurrence reported by expert surgeons.7–9 However, there are no well-designed prospective comparative trials to show the superiority of this treatment over the open approach.10,11

Although laparoscopic incisional hernia treatment has enthusiastic supporters, and excellent results have been reported in the hands of expert surgeons; the reality is that its growth has been less spectacular than initially expected, and in fact, many laparoscopic surgeons do not perform this procedure in their daily practice. A recent internet survey of surgeons in the United States reported that while 96% performed laparoscopic cholecystectomies, only 10% performed laparoscopic incisional hernia repairs.12 Similar results were reported in Spain in 2004 where 90% of surgeons performed laparoscopic cholecystectomies but only 18% of surgeons performed incisional hernia repair.13

The success of laparoscopic ventral hernia repair will depend on appropriate patient selection. Postoperative complications or recurrence are often the consequence of technical errors. Adequate size and fixation of the mesh are the most important factors.14 Common postoperative complications of laparoscopic repair include seroma, wound infection, ileus, hematoma, and persistent postoperative pain.7 Bladder calcification

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with subsequent stone formation after laparoscopic repairs has occasionally been reported after laparoscopic inguinal hernia repair, but this case is the first case in incisional hernia.4

In our patient, as in earlier reports, the tack inserted into the bladder wall was the nidus of the bladder stone formation and the cause of urinary symptoms subsequently presented by the patient.

A displaced tack is a postoperative complication that must be taken into account, given its possible medicolegal consequences.

Suprapubic incisional hernias are especially complex. An adequate overlap must be found to provide the necessary surface area for mesh-host tissue integration and to avoid bladder damage, but this is particularly difficult. The dissection plane is similar to the one used for laparoscopic transabdominal preperitoneal inguinal hernia repair with fixation in Cooper ligaments, combining the use of transfixing transabdominal sutures with tacks.15

New alternatives in mesh fixation, such as absorbable tacks or glues, can help to overcome these problems, but surgeons must be thoroughly familiar with the technique. Careful dissection of the retropubic space and adequate size, overlap and fixation of the mesh is mandatory.

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