CASE REPORT

A stitch in time: an unusual cause of enterovesical fistula

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SUMMARY

A 64-year-old woman with a history of a Stamey procedure for stress incontinence 20 years previously, underwent a diagnostic flexible cystoscopy to investigate recurrent urinary sepsis. Cystoscopic examination demonstrated a large vesicular calculus. When traction was applied to the calculus it was shown to be attached to a 10 cm length of non-absorbable suture material. The suture was attached to two further calculi, apparently originating from outside the bladder wall. All visible calculi and the suture were removed. In the following weeks the patient reported passage of air and faeculent material per-urethra. A repeat cystoscopy revealed an opening in the posterolateral bladder wall and CT confirmed the presence of an enterovesical fistula. Laparoscopy demonstrated a fistula between the terminal ileum and bladder wall. A further 10 cm length of non-absorbable suture material was removed from the terminal ileum and omentum. Laparoscopic repair of the fistula was performed successfully and the patient has remained symptom free following the procedure.

BACKGROUND

This case demonstrates a potential complication of the Stamey procedure: intra-abdominal migration of non-absorbable suture material, resulting in intra-abdominal adhesions and an enterovesical fistula. Laparoscopy was used to investigate as well as treat this complication without the need for open surgery.

CASE PRESENTATION

A 64-year-old woman was referred to urology out-patients to investigate the cause of recurrent urinary sepsis over the preceding 18 months. Her only medical history included a Stamey procedure 20 years previously for genitourinary prolapse and abdominoplasty 8 years previously.

A flexible cystoscopy was performed following the clinic appointment and a large vesicular calculus was demonstrated. This calculus was adherent to approximately 10 cm of non-absorbable suture material and two further stones, all of which appeared to originate from outside the bladder wall. Litholapaxy was performed, removing three calculi and the length of suture material.

In the weeks following the litholapaxy, the patient reported passing air and faeculent material per-urethra. Her symptoms peaked several hours after eating. Concerns were raised that the stone removal may have exacerbated a long-standing enterovesical or colovesical fistula and a repeat flexible cystoscopy was performed. This revealed an

opening in the posterolateral bladder wall, in keeping with a fistula. CT of the abdomen with contrast demonstrated a thick walled, inflamed bladder with an air-fluid level. A loop of small bowel tethered to the dome of the bladder was highly suggestive of enterovesical fistula.

The clinical picture, endoscopic and radiological investigations were consistent with an enterovesical fistula and the patient was booked for laparoscopic repair.

Since the operation the patient has experienced a complete resolution of her urinary symptoms and has had no recurrence of urinary tract infection.

INVESTIGATIONS

Flexible cystoscopy (first): large vesicular calculus adherent to approximately 10 cm of non-absorbable suture material and two further stones.

Flexible cystoscopy (second): active fistula draining food particles into the bladder.

CT of the abdomen (with contrast) completed several months preoperatively showed a thick walled and inflamed bladder containing an air-fluid level. A loop of small bowel was tethered to the dome of the bladder, highly suggestive of enterovesical fistula.

DIFFERENTIAL DIAGNOSIS

- Colovesical fistula secondary to diverticular disease
- Colovesical fistula secondary to previous surgery
- Enterovesical fistula secondary to adhesions following previous surgery
- Enterovesical fistula secondary to small bowel diverticulum
- Enterovesical fistula secondary to inflammatory bowel disease

TREATMENT

The patient underwent a diagnostic laparoscopy under general anaesthetic. The urinary bladder was decompressed with catheterisation preoperatively. A loop of terminal ileum was found to be adherent to, and fistulating into, the dome of the bladder. Two other loops of small bowel were found to be adherent to each other and the omentum, and around a 10 cm loop of monofilament suture material that passed through the wall of another loop of small bowel. The sigmoid colon was normal.

The enterovesical adhesion was carefully dissected using laparoscopic diathermy scissors. There was a small defect in the bladder wall and small bowel. The bladder wall and small bowel defects were

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repaired with 2/0 vicryl. The monofilament suture was dissected from the adherent omentum and the second loop of small bowel and extracted through one of the laparoscopy ports. The serosa of this small bowel was also oversewn with 2/0 vicryl.

The urinary catheter was left in place to keep the bladder decompressed until a cystogram was performed to check for contrast leak.

OUTCOME AND FOLLOW-UP

The patient made a good recovery postoperatively and was discharged home 3 days later when she was eating and drinking. A cystogram performed through the urinary catheter 2 weeks postoperatively confirmed no contrast leakage and the catheter was removed.

The patient was followed up in the outpatient clinic and was feeling much better. She is now able to eat without any urgency to micturate.

Histology of the suture material and tissue removed at laparoscopy showed chronically inflamed fibrofatty tissue adherent to two pieces of plastic suture material. There was no evidence of inflammatory bowel disease.

DISCUSSION

The Stamey procedure is a needle suspension procedure in which a non-absorbable suture is inserted vaginally or suprapubically to suspend the urethra. Cases of vesical calculi presenting many years after Stamey procedures have been reported.^{1–3} The intravesical migration of the Stamey cuff or suture provides a focus point for calculus formation. In some cases this complication has followed a perioperative cystoscopy confirming that the sutures were following an intravesical route.¹ Colposuspension techniques have also been associated with intravesical foreign bodies.⁴ Cases in which the suture material has had to be removed for abdominal pain are rare.⁵

Cystoscopy should be considered early in the evaluation of these patients as the only symptoms may be mild suprapubic discomfort sometimes associated with persistent urinary tract infection.² Other potential complications include delayed reactions to the suture material resulting in dyspareunia, vaginal discharge, induration of the abdominal incision, sinus tracts and even osteomyelitis of the pubis.^{6,7}

We are not aware of any reported cases of enterovesical fistula as a complication of the Stamey procedure, although the combined history of this procedure and the later abdominoplasty may have contributed to the presentation in this case. The insertion of tension-free vaginal tape (TVT) has been associated with intestinal adhesion and perforation, albeit in a patient who had undergone previous pelvic surgery.⁸

A systematic review comparing TVT with colposuspension concluded that the overall complication rates were similar, with the exclusion of bladder perforation, which was more common after TVT, and reoperation, which was more common after colposuspension.⁹

Abdominoplasty is a very common aesthetic procedure that can result in serious complications, although the most common complication is seroma (30% approximately¹⁰). Abdominoplasty involves the removal of excess skin combined with rectus muscle plication, often with circumferential abdominal liposuction to improve abdominal contour. Potentially, these techniques may damage the rectus sheath cuffs placed during Stamey procedures. It is not possible to say with total certainty if this was the

mechanism leading to suture migration in this case, or whether it was solely the result of the original gynaecological procedure.

Patient's perspective

While the patient was happy with the final outcome, she did feel that there had been a considerable delay in the diagnosis of her condition. From her first presentation with urinary tract symptoms, it had been several months before she was referred for cystoscopy.

Learning points

- ▶ Suture material placed during Stamey procedures or colposuspension can be inaccurately placed, or migrate intra-abdominally.
- ▶ The migration of this material can lead to intra-abdominal adhesions and enterovesical fistulas.
- ▶ Consider flexible cystoscopy early in patients presenting with symptoms that may be related to bladder stones and/or enterovesical fistula who have previously undergone a Stamey procedure or colposuspension.
- ▶ Laparoscopy can be used to investigate as well as treat patients presenting with this complication without the need for open surgery.

Competing interests None.

Patient consent Obtained.

Provenance and peer review Not commissioned; externally peer reviewed.

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