

Trauma and reconstruction

Mesh related vesico-peritoneal fistula presenting with urinary ascites: A case report

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Introduction

Vesicoperitoneal fistula is a very rare entity of epithelialized communication between peritoneal cavity and bladder.¹ It results in accumulation of urine in peritoneal cavity and causes elevated urea and creatinine levels mimicking acute renal failure. Incisional hernia is common complication of abdominal surgery and often repaired with non-absorbable mesh.² Using dual mesh can reduce mesh related complications but migration to adjacent organs can still happen and cause severe complications. Here we present a case of mesh related vesico-peritoneal fistula presenting with urinary ascites 2 years after incisional hernia repair.

Case presentation

A 48 year-old female patient was admitted to emergency department with nausea, vomiting and decreased urine output. She had a history of low anterior resection due to rectal cancer 5 years ago and laparoscopic incisional hernia repair with composite mesh 3 years ago. Laboratory tests revealed an elevated creatinine level of 3,8 mg/dl. Patient was transferred to nephrology clinic with the diagnosis of acute renal failure. A Urethral catheter was placed and a Computed tomography was performed showing intraperitoneal free fluid accumulation. Percutaneous drain was placed and analysis of peritoneal fluid revealed an increased creatinine level (14.42 mg/dl) indicating urinary ascites. A cystography was performed but no extravasation was observed (Fig. 1A). Patient's creatinine level rapidly declined after catheter placement. Drain and catheter were removed 7 days after admission and

patient was discharged.

Patient was admitted to emergency department with same complaints 2 months later. An immediate cystography was performed and severe contrast extravasation from dome of the bladder into peritoneal cavity was observed (Fig. 1B). Patient was transferred to urology clinic with the diagnosis of bladder fistula.

We decided to perform an operation in order to repair the bladder. First a diagnostic cystoscopy was performed. 2 cm epithelialized opening was observed at the junction of posterior wall and dome of the bladder. A ureteral catheter was inserted into this opening. Then, in supine position with a lower midline abdominal incision, we entered the peritoneal cavity by incising the mesh. Ureteral catheter was observed exiting from the posterior bladder wall (Fig. 2A). We dissected the fistula tract and saw that lower end of the mesh migrated and adhered to the bladder wall next to the fistulous opening (Fig. 2B). Mesh and lining of the fistulous opening were excised and bladder was closed. Suture line was covered with an omental flap. Patient had an uneventful recovery period and discharged after 3 days. No extravasation was observed at the cystography performed 2 weeks later and catheter was removed (Fig. 3). Patient had no complaints at the postoperative 6th month.

Discussion

Mesh migration is an unusual complication of hernia repair and clinical presentation varies depending on the organ involved. Migration to bladder may cause irritating lower urinary tract symptoms, hematuria and recurrent infection.³ In our case we only observed the defect

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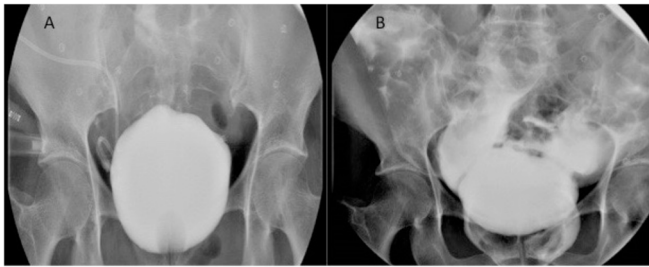


Fig. 1. A. First cystography with no obvious extravasation.
B. Second cystography with contrast extravasation from bladder into peritoneal cavity.

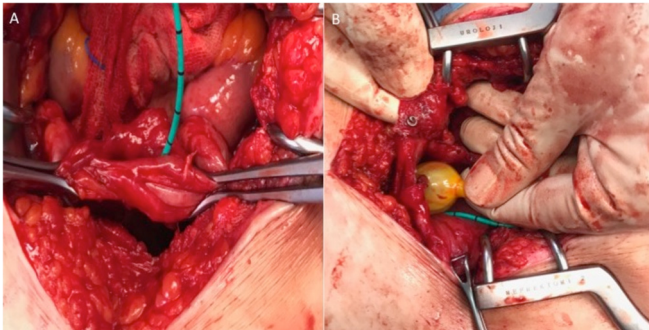


Fig. 2. A. Ureteral catheter exiting from the posterior bladder wall.
B. Mesh migrated and adhered to the bladder wall, note that tucker used for fixation can be seen on the mesh.



Fig. 3. Normal postoperative cystography.

on bladder wall during cystoscopy, we could not see any part of the mesh inside the bladder but during open surgery we found that mesh migrated and adhered to the bladder wall just near the fistulous opening. Our patient had occasional complaints of suprapubic pain, dysuria and difficulty in voiding especially in the mornings started a year after hernia repair. Each time, she was told she had cystitis and her complaints improved within a few days after treatment. It is hard to comment on whether these symptoms were due to irritation of bladder by mesh or they were just unrelated complaints.

Intraperitoneal urine accumulation may result in pseudo-renal failure caused by resorption of creatinine across peritoneal membrane characterized by elevated blood creatinine levels.⁴ It can be easily misdiagnosed as renal failure. Any urinary tract injury causing accumulation of urine in peritoneal cavity may result in pseudo-renal failure if remains unrecognized. Although there are many reports about pseudo-renal failure in literature, as far as we know there is no case report about a vesicoperitoneal fistula caused by mesh migration presenting with urinary ascites. Dawkins et al. reported a case of urinary ascites 5 years after laparoscopic hysterectomy during which a thermal injury was observed in routine intraoperative cystoscopy.⁵ Patient underwent bladder decompression for 10 days and CT urography did not reveal any pathology at the 10th postoperative day. 5 years later she presented with the complaints of dysuria and abdominal pain. Patient had a blood creatinine level of 3,0 mg/dl and urinary ascites. Diagnostic laparoscopy revealed a 1.5 cm defect in bladder.

In our patient when laboratory tests revealed an increased creatinine level, it was first assumed that patient had acute renal failure as she had nausea, vomiting and decreased urine output. Analysis of peritoneal fluid showing an increased creatinine level indicated that this was a pseudo-renal failure and patient's blood creatinine level declined after placement of urethral catheter. Failure of detection of vesicoperitoneal fistula in first admission was due to failure of demonstrating urine leakage in cystography. When cystography was retrospectively evaluated a small extravasation could be seen on right side of the bladder but it is certain that this extravasation was not as clear as the second cystography. First cystography was performed 3 days after catheter placement. Second cystography, however, was performed on the same of admission to emergency. Catheter might have promoted a temporary healing and prevented significant extravasation in the first cystography. This might also be the reason why patient didn't have any symptoms for 2 months. Still, a cystoscopy should have been performed to evaluate bladder in first admission.

Conclusion

Vesico-peritoneal fistula should be suspected in patients with increased blood creatinine level and ascites especially if there is a history of previous abdominal surgery. Patient should be evaluated very carefully to prevent misdiagnosis of acute renal failure. Also, complications due to mesh migration should be kept in mind in patients with hernia repair. Cystography is most of the time diagnostic and should be done before or as soon as possible after catheter placement but when inconsistent, cystoscopy should be performed to assess integrity of bladder.

Declarations of interest

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