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A Rare and Late Complication of an Appendectomy: Distal Ureteral Fistula with Stenosis

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ABSTRACT

Ureteric injury is a potential complication in various surgical procedures. The incidence varies between 0.5% and 10%. The risk of such complications is mainly related to the complexity of the surgical procedure and the presence of eventual periureteric pathology.

The most effective measure to prevent iatrogenic injury is to have a sound knowledge of abdominal and pelvic anatomy, meticulous surgical technique, and an identification of factors that increase the likelihood of developing such complications. As soon as the injury is identified, prompt urological referral is recommended.

We present a case of unusual ureteric stenosis and fistula after an open appendectomy.

INTRODUCTION

Ureteric injury is a potential complication in various surgical procedures [1]. The incidence varies between 0.5% and 10% [2,3]. The risk of such complications is mainly related to the complexity of the surgical procedure and the presence of eventual periureteric pathology.

Perioperatively, the ureter may be damaged by laceration, crush, thermal, or ischemic injury. Ureteral obstruction can result from a complete or partial suture ligation or clip application, causing delayed necrosis, urinoma, fistula, or stenosis [4]. The ureter can be damaged anywhere along its course, especially in the distal segment [4].

Clinical presentation may be delayed because of the time taken for the segment to slough. The common symptoms include flank pain, fever, and fistula. More rarely, patients may have hematuria, anuria, and even acute renal failure [5,6]. However, they may remain silent and be diagnosed years after with a non-functioning or a hydronephrotic kidney [7]. Radiological investigations are decisive in making a diagnosis.

The most effective measure to prevent iatrogenic injury is to have a sound knowledge of abdominal and pelvic anatomy, meticulous surgical technique, and an identification of factors that increase the likelihood of developing such complications. As soon as the injury is identified, prompt urological referral is recommended.

We present a case of unusual ureteric stenosis and fistula after an open appendectomy.

CASE REPORT

A 29-year-old man with a history of open appendectomy for acute appendicitis 4 years ago presented for vague right abdominal pain since surgery. He denied any abdominal trauma, lower urinary tract symptoms, or hematuria. Clinical examination was almost normal. An intravenous urogram (IVU) showed right-sided hydroureter and hydronephrosis with stricture of the distal ureter. A percutaneous nephrostomy was then inserted and the nephrostogram showed an occluded distal ureter with an extravasation of dye in the retroperitoneum on the right side (Figure 1). The computed tomography (CT)

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Figure 1. Nephrostogram showing an occluded distal ureter.

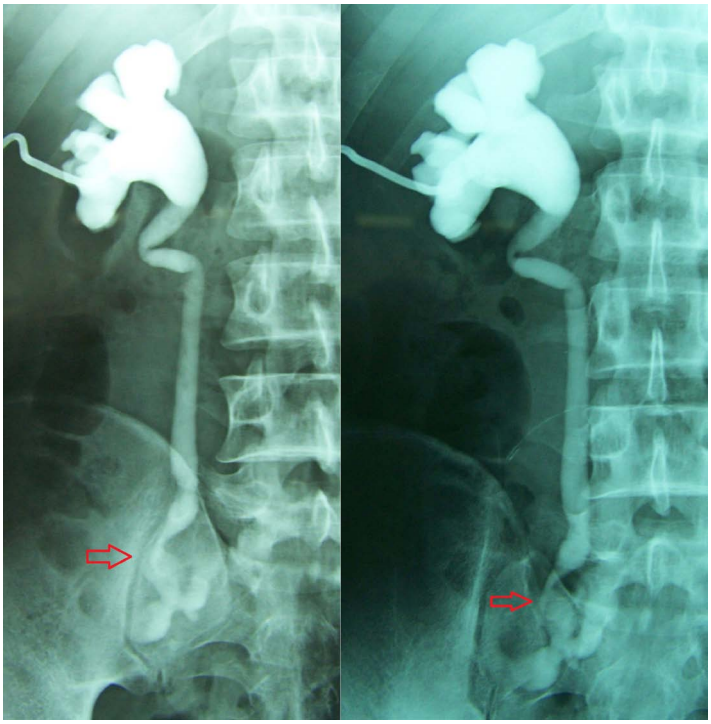
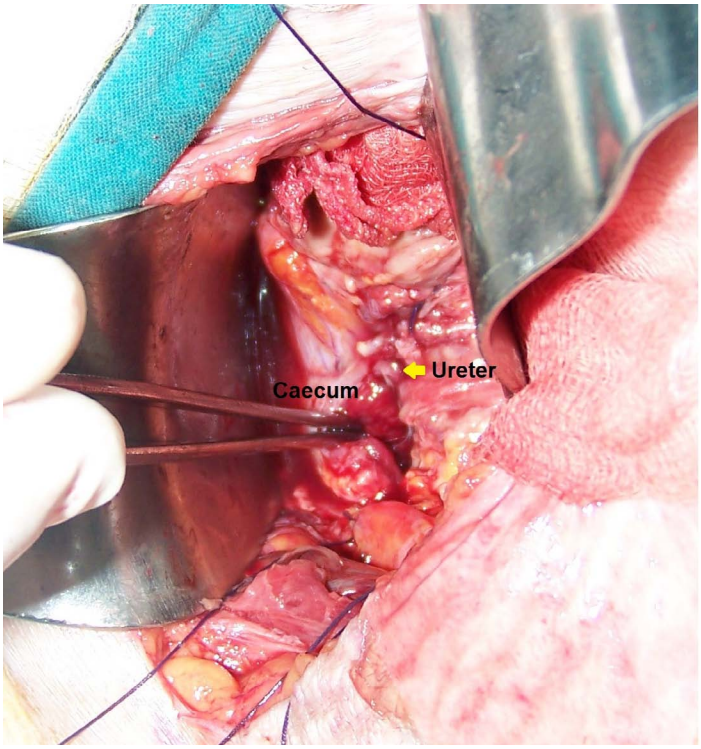


Figure 2. Perioperative view.



showed a distal ureteral stricture with pelvic urinoma due to an uretero-peritoneal fistula. With the diagnosis of ureteral fistula, surgical exploration was decided. Preoperatively, 400 ml of urine was found in the Douglas bag. An injection of blue methylene by nephrostomy showed a punctiform uretero-peritoneal fistula at the distal retrocecal portion of the ureter. It was very difficult to separate caecum to the ureter, which were in the same fibrous matrix (Figure 2).

Liberation of the ureter ends at the distal iliac portion; the latter has probably been burned at the appendectomy earlier. A uretero-cystostomy was performed according to the de Lich-Gregoir procedure on a bladder vault, and a double-J stent was left in situ.

The patient had an uncomplicated recovery following this procedure, and the stent was removed 1 month after the surgery. He was followed up for 6 months, and he had a normal CT urogram.

CONCLUSION

Ureteric damage secondary or during appendectomy, although rare, has serious consequences. A high index of suspicion is essential for diagnosis. Site, type, extent, mechanism of injury, and the timing of detection influence management. The case highlights the importance of early recognition of such complication as injuries recognized in the early period can be well managed, with minimally invasive procedures.

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