Oncology

Multiples deep abscesses: A rare complications of bricker ileal conduit urinary diversion after bilateral stenosis of the uretero-ileal anastomosis

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ABSTRACT

The most common complications of ileal conduit can be linked to bowel function, uretero-ileal anastomosis, complications related to cutaneous stoma itself and infections in general. It is often suspected upon the discovery of obstructive kidney failure. The management of stenosis of the uretero-ileal anastomosis is delicate requiring first, an attempt by endourological maneuvers for the benefit of less morbidity, while raising that a tumor recurrence is possible specially if it’s performed in a tumor context. We report an original observation of a bilateral ureteral stenosis of uretero-ileal anastomosis revealed by an obstructive anuria five years after a radical cystectomy.

1. Introduction

Muscle-invasive bladder cancers account for around 25% of bladder tumors. Their standard treatment is total cystectomy associated with a urinary diversion. Various methods have been described for the urinary diversion from cutaneous ureterostomy to the orthotopic neobladder. However, the trans-ileal ureterostomy has long been considered the gold standard of urinary diversion because of its ease of realization and its low rate of complications. The most common complications of the ileal conduit can be linked to bowel function, uretero-ileal anastomosis, complications related to cutaneous stoma itself and infections in general. The incidence of stenosis in uretero-ileal anastomosis varies from 7% to 14%. It is often suspected upon the discovery of obstructive kidney failure or pyelocaliceal dilatation on follow-up.

2. Case presentation

We report the case of a 64-year-old patient who underwent 5 years prior to this episode a total cystoprostatectomy and Bricker’s urinary diversion with a Wallace type uretero-ileal anastomosis. The patient presented anuria and was pyretic (39.5 °C) 48 hours prior to his admission to the emergency department where he was diagnosed with septic shock. His kidney function was altered with a renal clearance estimated at 14 ml min−1.1.73-m−2. Infection biological markers were also elevated with C-reactive protein level at 250 mg/L (<6 mg/L) and high white blood count at 15,890/mm3 (1500 et 7000/mm3). Abdominopelvic CT scan showed multiple abscessed collections extending from the lesser pelvis to the anterior surface of the thighs (Fig. 1) with bilateral hydroureteronephrosis.

The patient received fluid resuscitation and the first dose of antibiotic therapy (ceftriaxone and amikacin) was administered before he underwent radiologic guided drainage of the abscesses and bilateral nephrostomies. The nephrostomies could improve kidney function to creatinine at 36 mg/L (7–13 mg/L) and drain urine efficiently and sterilizing it by an antibiotic therapy that was later adapted to the results of the antibiogram study. The outcome was positive with a clear regression of the abscesses on control tomodensitometry.

One month later, the patient was admitted to the operating room in an attempt to convert his nephrostomies into ureteral endoprosthesis. The endoscopic exploration of bricker’s derivation didn’t find the neo-meatus despite the administration of methylene blue by the nephrostomies. The antergrade ureteropyelography showed a tight bilateral ureteral stenosis involving the two ureters towards the uretero-ileal anastomosis (Fig. 2) with no passage of the hydrophilic guide or the contrast medium (Fig. 3). Due to the failure of the endo-urological treatment, the patient benefited from a surgical approach. The exploration found a 1.5 cm stenosis of the ureters which was resected, then the ureters where implanted to the ileal conduit and the anastomosis

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was protected by two Mono-J stent. The histological study of the ureteral section did not show any tumor recurrence.

The post-operative care was simple with the removal of the surgical drain on day 2. The patient was discharged a day later. The Mono-J stents were removed at 1 month after discharge and the renal clearance returned to a level of 55 ml. min\(^{-1}\).1.73 m\(^{-2}\).

3. Discussion

Stenosis of the uretero-ileal anastomosis is the most common cause of the deterioration of the kidney function after a urinary diversion, which can progress silently. This occurs in between 7 and 14% of the anastomosis performed overall per case. Usually, it is a unilateral stenosis more frequent on the left ureter because of its transposition as well as its exposure to compression in its path between the root of the meso-sigmoid and the pre-vertebral vessels.

Several factors can be responsible, such as urinary fistulas, urinary tract infections, ureteral ischemia, the apposition of two different mucous membranes and technical issues,\(^2\) which suggests to be careful when passing the ureter under the mesocolon so as not to generate adventitious lesions and to be very attentive to a possible angulation of the ureter. However, tumor recurrence should be suspected especially if a uretero-ileal anastomosis was performed in a neoplastic context.

This kind of anastomosis’s stenosis are asymptomatic in 71% of cases and very rarely can be revealed by a feeling of abdominal heaviness, hence the value of screening in post cystectomy follow-up. They should also be suspected if there is a rise in creatinine level, low back pain, recurrent pyelonephritis or pyelocaliceal dilatation on imaging.

Percutaneous nephrostomy is the first step in the treatment of an obstructive syndrome.\(^3\) It allows to remove the anastomatic edema and to perform subsequent endo-urological maneuvers.

The diagnosis of certainty of uretero-ileal stenosis is based primarily on antegrade ureteropyelography and injected CT scan with reconstruction to locate the stenosis and to clarify its relationship with neighboring organs. As for DMSA renal scintigraphy, it can be useful to assess renal function if a conservative treatment is considered.

The urologist confronted to a ureteral stenosis have multiple approaches to correct the narrowing. Endo-urological techniques come in 1st line offering less morbidity with a success rate of 70%, this high success rate is related to the presence of short stenosis, or a recent stenosis\(^4\) and the combination of balloon dilation and ureterotomy, but a risk for long-term recurrence.\(^5\) Several series have reported that an electro-incision of uretero-ileal anastomosis stenosis gives a satisfactory result at 1 year for 71% of the cases treated. For the surgical treatment often arriving in 2nd line, with a higher morbidity and operational difficulties related to post-operative adhesions, it’s success rate is at 90% and consists of a surgical re-exploration with removal of the stenotic segment and the anastomosis of the ureter to the intestine.\(^5\) This type of management also has the advantage of checking the anatomo-pathology and eliminating a recurrence of urothelial tumor disease.

4. Conclusion

Urinary diversions are practiced for various reasons and particularly in tumor pathologies. The urinary diversion with uretero-ileal anastomosis is the most common due to its ease and the low risk of complications. The anastomosis’s stenosis represents a major complication, often asymptomatic, which requires heavy management in order to maintain the kidney function. The treatment is based on endourological procedures and in case of failure the surgical treatment comes in 2nd line.

Author contribution

All authors have contributed to this work and have read and approved the final version of the manuscript.
Declaration of competing interest

The authors declare no conflict of interest.

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