CASE REPORT

Intestinal adenocarcinoma in an augmented ileocystoplasty

Filipe Alpoim Lopes, Nidia Rolim, Tiago Rodrigues, Artur Canhoto

Department of Urology,
Centro Hospitalar de Lisboa
Occidental, EPE, Lisbon,
Portugal

Correspondence to
Dr Filipe Alpoim Lopes,
filipealpoim@gmail.com

SUMMARY

We present a case of a 67-year-old patient with a history of augmentation ileocystoplasty 31 years ago following genitourinary tuberculosis. Radiological investigations performed due to asymptomatic microscopic haematuria revealed three contrast-enhancing polyps within the neobladder. The patient had enterocystoprostatectomy and histopathological examination of the neobladder revealed mucinous adenocarcinoma in all three polyps, together with a prostatic adenocarcinoma Gleason 7 (3+4). After adjuvant chemotherapy and 1 year of follow-up, he had no sign of clinical or radiological recurrence. Taking into consideration this rare case, we discuss the development of malignant tumours after the incorporation of intestinal segments in a urinary tract reconstruction, showing what relationship exists between secondary neoplastic growth, the primary disease and the type of urinary diversion utilised.

BACKGROUND

Utilisation of several intestinal segments for urinary tract reconstruction is an established procedure for the treatment of malignant bladder disease or other benign conditions such as urinary tuberculosis or schistosomiasis. Nevertheless, the potential long-term consequences of this technique, namely the late development of malignancy, constitute a major concern and are still a matter of debate. There is also no consensus whether the routine endoscopic evaluation of these intestinal segments should be performed and is cost-effective.¹ We take into consideration a rare case with three synchronous adenocarcinomas in the ileal portion of an augmented bladder and an incidental prostatic malignancy

to analyse recent data on secondary malignancy following intestine interposition for urinary tract reconstruction.

CASE PRESENTATION

A 67-year-old male patient was referred to our urology department for asymptomatic microscopic haematuria. He had a left nephrectomy and an augmentation ileocystoplasty 31 years ago for genitourinary tuberculosis in another urology clinic. A routine blood test showed no anaemia, normal renal function (haemoglobin (Hb)—14.6 ng/dL; urea 45 ng/dL; creatine 1.1 ng/dL) and a prostatic specific antigen (PSA) of 1.7 ng/dL. Urine and mycobacterial culture were both negative. Urine cytology was inconclusive. Endoscopic evaluation of the lower urinary tract (LUT) did not show any neoformations in the urethra, prostate and bladder; although it was not possible to visualise the entire augmented bladder mucosa due to its larger volume. A CT scan revealed three contrast enhancing polyps within the very augmented ileal bladder, which surpassed the umbilical level (figure 1). The patient was submitted to enterocystoprostatectomy and urinary diversion with non-continent cutaneous ureteroileostomy (figure 2). Histopathological examination revealed a 51 cm ileocystoplasty (figure 3) with three synchronous mucinous adenocarcinomas—two moderately differentiated in the ileal segment (pT3 and pT1b) and one well-differentiated at the vesicoileal anastomotic line (pT2)—and an incidental prostatic adenocarcinoma Gleason 7 (3+4) in less than half of the left lobe (pT2a). Adjacent ileal mucosa showed features of villous atrophy and inflammatory infiltration. All of the 12 nodes following standard ilio-obturator lymphadenectomy

Figure 1 (A and B) Polyp in the ileocystoplasty.

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Figure 2 Intraoperative view of the neobladder before excision.

and 11 mesenteric lymph nodes were free of neoplastic cells. In a multidisciplinary oncology meeting it was decided to administer six cycles of FOLFOX chemotherapy regimen, considering the histopathological similarity of the neovesical lesions to colonic carcinomas usual adjuvant regimen. After 1 year of follow-up the patient had no sign of clinical or radiological recurrence.

DISCUSSION

Secondary malignancy at the uroenteric anastomosis is a well-documented complication after ureterosigmoidostomy, with an increased risk of colonic carcinoma between 8 and 500 times greater for an age-matched population.² Neoplastic growth has also been reported in other different types of urinary diversion such as conduits, cystoplasties, neobladders and ileal ureter replacements. However, the true incidence of this phenomenon is very difficult to determine, because most of the cases published in the literature are single institutional series or case reports. Kåble *et al* designed the only study that gathers data from several urological clinics and tries to establish a relation between the type of urinary diversion and the risk of malignant transformation.³ Besides ureterosigmoidostomy, secondary tumour risk was also significantly higher (13-fold to be exact) in ileocystoplasty compared to other forms of intestine interposition for urinary tract reconstruction. The fact that a great majority (81%) of tumours arise in different continent diversions can be attributed, according to the author, to patient

selection, since conduits are mostly performed in elderly patients and do not achieve the latency period for tumour development. Thus, a definitive conclusion about the malignancy risk in continent versus incontinent diversion is not yet possible. Another confounding aspect in our patient is the primary disease. Genitourinary tuberculosis and schistosomiasis result in a chronic inflammatory response and can by itself represent a risk factor for neoplastic change.⁴ Moreover, this inflammatory condition is one of the proposed mechanisms for malignant transformation within the urinary diversions.⁵ The contact of intestinal epithelium with urine and the inflammatory response triggered by anastomosing two differing mucosae can lead to nuclear instability and cellular disarrangement.⁵

The most common site of tumour localisation following urinary diversion is at the urointestinal border.²⁻⁶ Synchronous tumours affecting not only the anastomotic line but also the intestinal segment of the ileocystoplasty was, to our knowledge, only published on two other occasions.⁷⁻⁸ However, in this context, the neoplastic synchronicity can also just correspond to a main malignant focus with two other implants, since all tumours are histopathologically identical.

The simultaneous presence of a prostatic adenocarcinoma can just be a matter of coincidence since its incidental diagnosis in contemporary cystectomy series ranges 25–46%.⁹ There is also no reference in the literature that augmentation cystoplasty and genitourinary tuberculosis constitute a risk factor for prostatic neoplasia but it may be a matter of further investigation.

Endoscopic surveillance of the reconstructed urinary tract is performed routinely in some departments and even recommended by some urologic national associations.⁶ However, the long latency period and very low incidence of malignancy makes this procedure not universally accepted for asymptomatic patients. Hamid *et al* reported that no cancer was identified with either cystoscopy or on routine biopsies performed in more than 90 patients followed for a median range of 15 years.² On the other hand, symptomatic patients with haematuria, recurrent urinary tract infection (UTI) and suprapubic pain should immediately have radiologic and/or LUT endoscopic evaluation.

Learning points

- ▶ De novo urinary symptoms, haematuria and recurrent urinary tract infections should prompt endoscopic and radiological evaluation of the reconstructed lower urinary tract.
- ▶ Except following ureterosigmoidostomy, routine endoscopic surveillance after a urinary diversion in asymptomatic patients is not universally accepted due to the low risk and long latency period of secondary malignancy.
- ▶ Although the magnitude of the risk is not yet established, the use of any intestinal segment in urinary diversion, even without mixture of urine and faeces, seems to allow malignant transformation.

Figure 3 Tumour at the vesicoileal anastomotic line.

Contributors FL was involved in literature search, conceived the study and coordinated writing of the manuscript. NR and TR helped in literature search and in preparation of the manuscript and AC reviewed and edited the manuscript.

Competing interests None.

Patient consent Obtained.

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