

Double Trouble- Ureteric Obstruction Due to Bilateral Urothelial Carcinoma

Abstract:

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Abstract

Upper tract urothelial carcinoma (UTUC) represents ~5% of all urothelial carcinomas. Synchronous bilateral tumors are extremely rare with only 19 reports in the literature. Haematuria is the main presenting complaint. We report a case of synchronous bilateral tumors of the ureters in a gentleman with frank haematuria treated with staged aggressive resection.

Introduction

Upper tract urothelial carcinoma (UTUC) accounts for ~5% of all urothelial cancers, with a four-fold increased risk in the renal pelvis. Synchronous bilateral tumors are an extremely rare occurrence with few reports in the literature. Open nephroureterectomy with resection of an ipsilateral bladder cuff is the reference standard surgical treatment of UTUC¹. Haematuria is the most common presenting complaint for UTUC. We report the case of synchronous bilateral urothelial carcinomas of the ureters in a gentleman presenting with frank haematuria.

Case Report

A 69-year-old smoker was referred to our unit, a tertiary referral centre, following an episode of acute urinary retention and three episodes of frank haematuria in the past year. Clinical examination was unremarkable and digital rectal exam revealed a benign 40g prostate. Serum creatinine was 220. Flexible cystoscopy was normal. MR Urogram was performed due to renal impairment and revealed bilateral hydronephrosis, more severe on the left side with bilateral hydroureter (Figure 1).

Figure 1: MR Urogram demonstrating bilateral hydroureter with mid ureteric obstruction

Subsequent retrograde pyelogram and ureteroscopy revealed proximal obstruction of both ureters and biopsy of these lesions revealed low grade non-invasive urothelial papillary carcinoma, pTa. Urine cytology demonstrated atypical cells consistent with urothelial carcinoma. CT thorax, abdomen and pelvis revealed non-specific sub-centimetre pulmonary nodules. A renogram showed a non-functioning left kidney with good preservation of right kidney function. Following discussion at the uro-pathology multi-disciplinary conference, the patient was offered a two-stage radical surgical approach. A left radical nephroureterectomy was initially performed. Six weeks later, the second stage involved a right distal ureterectomy, cystoprostatectomy and right cutaneous ureterostomy formation. Histology demonstrated high grade papillary urothelial carcinoma of the ureter with invasion into the subepithelial connective tissue. The proximal ureteric margins were negative. Renal pelvis, left kidney, bladder and prostate were benign, pT2, Nx, R0.

He has recovered well from this radical surgical approach, his renal function has normalised and is currently undergoing adjuvant chemotherapy. This case adds to the current literature demonstrating the rare occurrence of bilateral ureteric cancer and highlighting the need for upper tract imaging with haematuria.

Discussion

Primary UTUC is a rare urological disease. Approximately 5% of all urothelial carcinomas occur in the kidneys and ureters (upper urinary tract). The vast majority of upper urinary tract tumors arise in the kidney, comprising 4-15% of all primary kidney neoplasms in the United States, whereas ureteric tumors represent only 1%. There are limited reports of bilateral synchronous ureteric tumours with only 19 reports in the literature (Table 1). In 2004, Holmang et al reported a series of 936 upper tract tumors, 15 had bilateral synchronous upper tract tumors with only two having bilateral ureteric tumors, one was treated with a nephroureterectomy and contralateral local resection, the other was treated with bilateral local resections². Brown et al reported a series of 434 patients with UTUC, 184 had had a nephroureterectomy as primary curative treatment. Open radical nephroureterectomy with removal of a bladder cuff was used in 158 patients (85.9%) and laparoscopic radical nephroureterectomy with open bladder-cuff excision in 26 (14.1%)³.

The gold standard of open radical nephroureterectomy with resection of a bladder cuff is being challenged by minimally-invasive approaches to the managing of upper urinary tract urothelial carcinoma (UTUC) with laparoscopic nephroureterectomy a feasible alternative to an open procedure⁴. Recent data has showed improved survival in patients with bladder cancer who have a multimodal treatment with chemotherapy, a stronger argument can be made for any patient suspected of having a high-risk UTUC to receive chemotherapy before surgery. This position is strongly supported in that patients with UTUC often sustain a significant loss of renal reserve as a result of surgery, frequently in the setting of advanced age or chronic renal insufficiency⁵. This factor essentially precludes the ability to deliver effective doses of cytotoxic chemotherapy after surgery. In the setting of a non-functioning kidney, as in this case, reduced dose adjuvant chemotherapy is appropriate.

Synchronous bilateral ureteric tumours are an extremely rare occurrence. This case demonstrates a radical surgical approach, performed at an interval, needs to be considered in the decision process.

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