Mucinous adenocarcinoma of the renal pelvis associated with lithiasis and chronic gout

G Kaur, V R Naik, M N G Rahman

ABSTRACT

Diffusely-infiltrating mucinous adenocarcinoma of the renal pelvis associated with lithiasis and chronic gout is reported in a 61-year-old Malay man. The patient underwent left nephrectomy and vesiculo-lithotomy. This tumour is postulated to arise in response to chronic irritation of the urothelium.

Keywords: chronic gout, lithiasis, mucinous adenocarcinoma, renal pelvis, renal tumour

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INTRODUCTION

Mucinous adenocarcinoma is a rare primary epithelial tumour of the renal pelvis and ureter. The pathogenesis of this tumour is unclear and is postulated to arise from metaplastic glandular mucosa in response to chronic irritation of the urothelium[1-6].

CASE REPORT

A 61-year-old Malay man presented with a painless left hypochondriac mass of three years duration. There was associated loss of appetite and weight. He had a history of passing stones but denied having haematuria or dysuria. He also suffered from chronic gouty arthritis. On physical examination, there was a firm fixed mass in the left hypochondrium that extended to the epigastrium. Laboratory investigations showed haematuria, high uric acid level, and mild renal impairment. Radioimaging studies revealed bilateral staghorn calculi in the renal pelvis, left hydronephrosis, and calculi in the lower ureter and bladder. With a provisional diagnosis of hydronephrosis secondary to obstructive uropathy, the patient underwent left nephrectomy and vesiculo-lithotomy, during which three litres of thick yellowish mucoid and necrotic material was drained from the kidney.

On gross pathological examination, the kidney was markedly enlarged, weighing 1.9 kg and measuring 24 x 14 x 8 cm. Multiple large cysts that were filled with mucinous and necrotic material replaced the whole kidney with thinning of the renal cortex (Fig. 1). A staghorn calculus was present in the pelvis and there was another calculus in the ureter, with associated hydroureter. The renal capsule was intact. Histological examination revealed a lining of tall columnar epithelium with basally-located nuclei, focal pseudostratification and papillary tufting, resembling ovarian cystadenocarcinoma. Mitoses were infrequent but renal parenchymal invasion was obvious. Mucicarmine stain was positive (Fig. 2). The

Fig. 1 Photograph of the excised specimen shows an enlarged kidney with multiple cysts filled with mucinous and necrotic material.

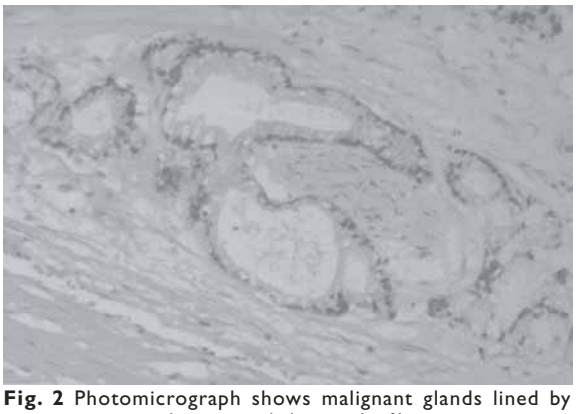

Fig. 2 Photomicrograph shows malignant glands lined by mucin-secreting columnar epithelium and infiltrating into stroma (Haematoxylin & eosin, x 100).

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ureter proximal to the calculus was lined by similar epithelium. Residual renal parenchyma had features of chronic pyelonephritis. At one month post-operation, the patient was well. His serum carcinoembryonic antigen level was elevated at 12.14 μg/L.

DISCUSSION

Tumours of the renal pelvis are uncommon, with a relative frequency of transitional cell carcinoma (90%), squamous cell carcinoma (10%) and adenocarcinoma (1%)[1,2]. A total of 95 cases of mucinous adenocarcinoma have been reported up to 2002[3]. This is the first such reported case in Malaysia. Patients are often asymptomatic. Haematuria is the most common presenting sign while loin pain and palpable abdominal mass signifies a late stage[4]. Radiological studies may not be able to identify a malignant tumour. Mucinous adenocarcinomas are often confined to the renal pelvis and diffusely-infiltrating tumours such as ours is rare[5,6]. Its resemblance to intestinal and ovarian adenocarcinoma is a feature[2].

The postulated pathogenesis of this malignancy is related to its frequent association with chronic irritation, inflammation, infection, hydronephrosis and urinary calculi[1-6]. Glandular metaplasia of the urothelium, that develops as a response to injury, may progress to dysplasia and adenocarcinoma. Our patient had chronic gout, predisposing him to all the above conditions.

Aetiologic factors cited for renal pelvis carcinoma include chronic inflammation, certain chemicals and dyes, phenacetin abuse, and tobacco smoking[2]. Our patient was an ex-smoker and did not have evidence of exposure to hazardous chemicals or dyes. A careful search for a primary carcinoma originating elsewhere should be excluded. In conclusion, this is the first reported case in Malaysia of a diffusely-infiltrating mucinous adenocarcinoma of the renal pelvis with evidence of chronic irritation and lithiasis.

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