Available online at www.sciencedirect.com

ScienceDirect

journal homepage: http://Elsevier.com/locate/radcr

Case Report

Renal squamous cell carcinoma mimicking xanthogranulomatous pyelonephritis: Case report and review of literature

Hau Wei Khoo MD[*], *Chau Hung Lee MBBS, FRCR*

Department of Diagnostic Radiology, Tan Tock Seng Hospital, 11, Jalan Tan Tock Seng, Singapore 308433

ARTICLE INFO

Article history:
Received 18 January 2016
Accepted 28 February 2016
Available online 4 April 2016

Keywords:
Renal squamous cell carcinoma
Xanthogranulomatous pyelonephritis
Kidney

ABSTRACT

Primary renal squamous cell carcinoma (SCC) is a rare primary malignancy of the kidney. Diagnosis is usually delayed because of its lack of characteristic clinical and imaging features and inherent aggressive nature. We present a case of primary renal SCC in a 66-year-old woman with bilateral renal calculi and a complex right lower pole renal mass. The diagnosis of primary renal SCC was established based on the histopathology after right nephrectomy.

Introduction

Primary renal squamous cell carcinoma (SCC) is an extremely rare entity, and it comprises less than 1% of all urinary tract neoplasms [1]. Because of its lack of characteristic presentation, such as palpable mass, hematuria, and pain, the patients usually present late resulting in delay in diagnosis [2]. Urolithiasis and hydronephrosis are often associated with renal SCC [3]. It is postulated that chronic irritation of the renal pelvis results in squamous metaplasia, which later increases the risk of developing into SCC [4]. Renal SCC has poor prognosis with few surviving more than 5 years due to its early metastatic spread [3]. We present a rare case of a primary renal SCC in a 66-year-old woman.

Case report

A 66-year-old gentleman with history of hypertension presented to our institution with bilateral flank pain and hematuria for 3 days associated with oliguria. There was also associated weight loss and anorexia. Physical examination was unremarkable. Laboratory tests revealed elevated serum creatinine of 780 umol/L (normal range: 60-105 umol/L) and urea of 33.4 mmol/L (2.9-9.3 mmol/L), hyponatremia with a serum sodium of 119 mmol/L (135-144 mmol/L), anemia with hemoglobin level of 8.9 g/dL (13.0-17.0 g/dL), and leukocytosis with total white cell count of 13.2 $\times$ 10^9/L (3.6-9.3 x 10^9/L). C-reactive protein was raised at 64.5 mg/L (0.0-5.0 mg/L).

Written informed consent for the case to be published (including images, case history, and clinical information) was obtained from the next-of-kin for publication of this case report.

Competing Interests: The authors declare that there are no competing interests regarding publication of this article.

* *Corresponding author.*
E-mail address: hauwei.khoo@gmail.com (H.W. Khoo).

http://dx.doi.org/10.1016/j.radcr.2016.02.012

Plain abdominal radiograph showed a right staghorn calculus and several smaller right renal stones (Fig. 1). Unenhanced computed tomography (CT) of the kidneys, ureters, and bladder confirmed a staghorn calculus with right hydronephrosis. There was also an irregular infiltrative right lower pole renal mass invading the right psoas muscle (Fig. 2).

Contrast-enhanced magnetic resonance imaging (MRI) of the kidneys was performed to delineate the right renal mass. T2-weighted imaging showed an irregular mass of low-to-intermediate signal centered in the parenchyma of the lower pole of the right kidney invading the right psoas muscle (Figs. 3 and 4). T1-weighted imaging showed the mass to by slightly hyperintense (Fig. 5). The mass demonstrated restricted diffusion (Fig. 6). Postcontrast, there was peripheral enhancement with nonenhancing central areas (Fig. 7).

Initial impression was xanthogranulomatous pyelonephritis (XGP). However, an infiltrative malignancy could not be excluded on imaging and ultrasound-guided biopsy of the lesion was performed. Histologic examination showed small fragments of necrotic tissue and squamous epithelium with parakeratosis and hyperkeratosis. In view of a lack of definite histology from biopsy, the patient underwent an open right radical nephrectomy. Histologic examination of the nephrectomy specimen revealed features of keratinizing SCC associated with squamous metaplasia and squamous carcinoma in situ. Final diagnosis was confirmed to be SCC of the kidney.

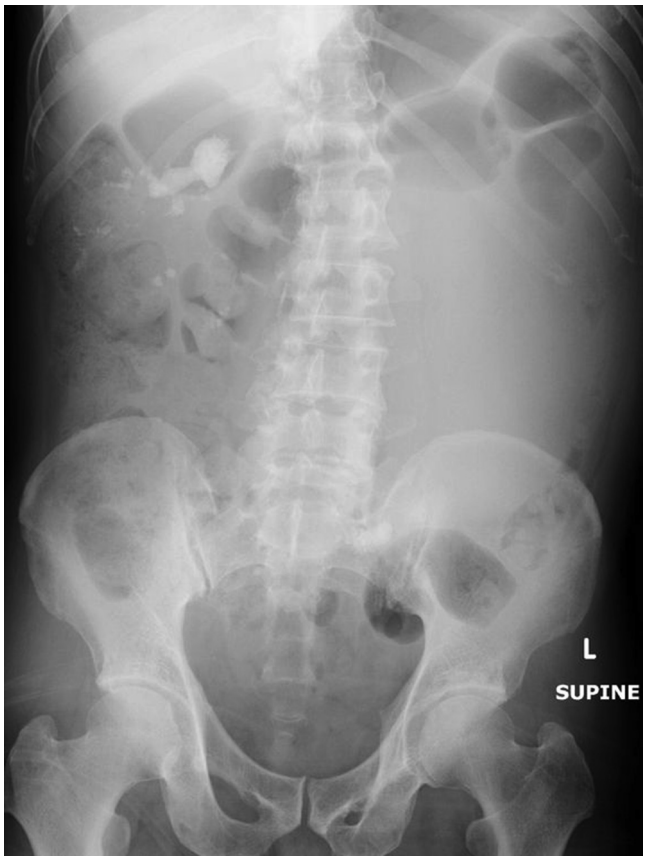

Fig. 1 – Plain radiograph of the abdomen showed multiple right renal stones.

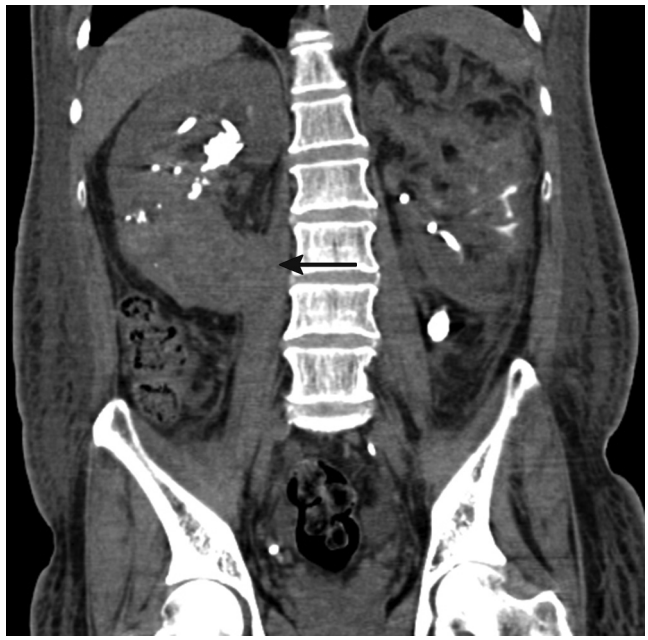

Fig. 2 – Coronal CT showed, in addition to right renal stones, an infiltrative mass in the lower pole of right kidney invading the right psoas (arrow). Further characterization was not possible in the absence of intravenous contrast.

The patient had a stormy postoperative period complicated by sepsis, end-stage renal failure requiring dialysis, and new liver metastasis. In view of poor prognosis, he was terminally discharge with best supportive care. He eventually passed away at home a month later.

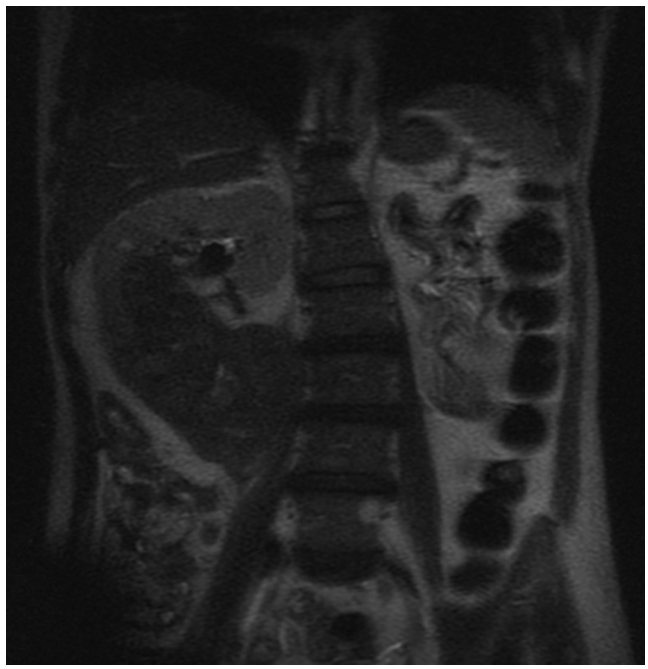

Fig. 3 – Coronal T2-weighted sequence showed a predominantly T2-hypointense, irregular mass in the lower pole of the right kidney invading the right psoas muscle.