SAS Journal of Medicine
Abbreviated Key Title: SAS J Med
ISSN 2454-5112
Journal homepage: https://saspublishers.com

OPEN ACCESS

Pathological Anatomy

Primary Renal Squamous Cell Carcinoma Incidentaly Discovred in a Non-Functioning Lithiasis Kidney: A Case Report

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DOI: 10.36347/sasjm.2024.v10i04.012 | **Received:** 17.02.2024 | **Accepted:** 20.03.2024 | **Published:** 26.04.2024

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Abstract **Case Report**

***Introduction*:** Primary squamous cell carcinoma of the kidney is a rare tumor with a poor prognosis. It often occurs on a lithiasis kidney. ***Observation*:** We report a case of a 62-year-old patient admitted for left back pain associated with lower urinary tract symptomes with fever. Clinical examination revealed tenderness of the left lumbar fossa. Radiological examinations showed left ureterohydronephrosis, with the presence of a left kidney stone. A left radical nephrectomy was performed showing the presence of a neoplasm measuring 7cm with on histological examination a moderately differentiated and infiltrating squamous cell carcinoma. ***Conclusion*:** The diagnosis of squamous cell carcinoma of the kidney must be evoked in the first place in front of any renal mass with notion of kidney stones.

Keywords: Squamous Cell Carcinoma _ Kidney _ Calculus _ A Case Report.

INTRODUCTION

Primary squamous cell carcinoma (SCC) of the kidney is a rare tumor with a poor prognosis. It represents 0.5 to 0.8% of all malignant renal tumors [1]. Although the incidence of this tumor in the kidney is rare, when a renal mass is accompanied by an old kidney stone, the diagnosis of squamous cell carcinoma should be ruled out first[2, 3]. Factors that increase the incidence of this kidney stone tumor include chronic irritation, inflammation and infection, which can lead to squamous metaplasia

We report a case of primary squamous cell carcinoma on lithiasis kidney with a review of the recent literature [4].

METHODOLOGY

Only one case of squamous cell carcinoma of the kidney has been reported in the urology department of the Mohamed VI University Hospital in Marrakech.

OBSERVATION

We report the case of a 62-year-old patient with epilepsy and dyslipidemia under treatment, a stroke 4 years ago and a goiter operation 10 years ago. He was admitted for left lumbago evolving for 4 days associated with lower urinary tract symptoms represented by pollakiuria, urgenturia with the notion of pyuria. The whole evolving in a context of fever and conservation of the general state. Clinical examination showed tenderness of the left lumbar fossa. Ultrasound showed a left ureterohydronephrosis with the presence of a stone in the left lower calyelic group measuring 4cm. The CT urogram showed a major left ureterohydronephrosis laminating the cortex upstream of a lumbar ureteral calculus of 17 x 14 mm and individualization at the upper calcific level of a calculus of 31x22 mm of calcium density (Figure 1). The patient underwent a left radical nephrectomy for destroyed kidney on calculus. In the anatomical pathology department, a left nephrectomy was received weighing 304g and measuring 11.5x8.5x7cm. The renal parenchyma is the site of a neoplasm measuring 7x6x4cm. It was greyish-white in color, firm in consistency, and had hemorrhagic and cystic changes. It seems to infiltrate the medulla, the cortex and the renal capsule. A stone measuring 4 cm in length was found in the calyces. Microscopic examination of the neoplasm showed an infiltrative carcinomatous proliferation of cohesive epithelioid cells with large pleomorphic nuclei with prominent nucleoli. Numerous mitotic figures were observed with patchy dyskeratotic eosinophilic cytoplasm and formation of

some horny globes (Figure 2). Focal areas of squamous cell carcinoma in situ and squamous metaplasia are seen in sections of the renal pelvis (Figure 3). The tumor infiltrates the renal parenchyma and renal capsule without infiltration of the perirenal fat. The immunohistochemical study shows an expression of tumor cells to anti-P63 and anti-CK5-/6 antibodies (Figure 4). Thus, the diagnosis of moderately differentiated and infiltrating squamous cell carcinoma was retained. The patient's postoperative course was relatively simple.

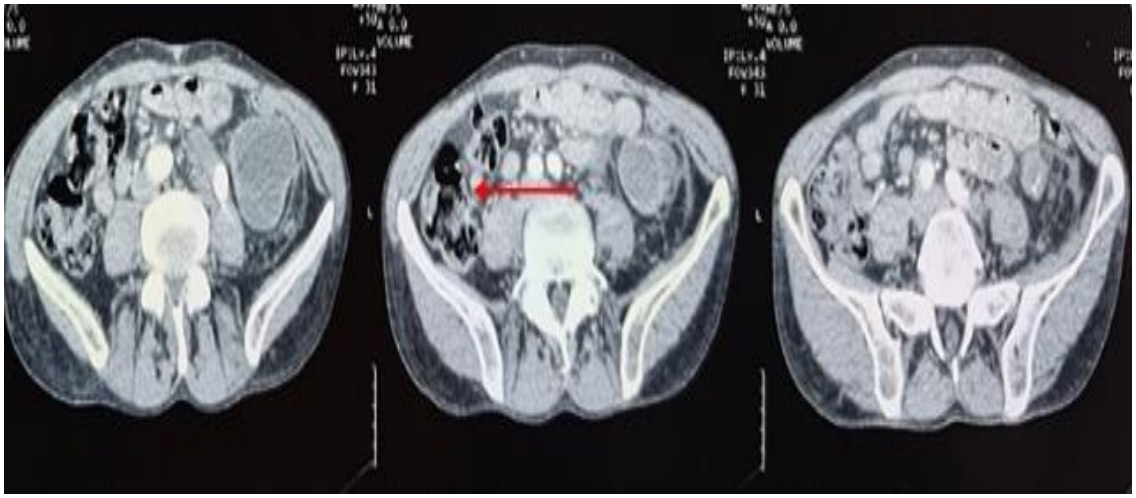

Figure 1: Left major ureterohydronephrosis laminating the cortex

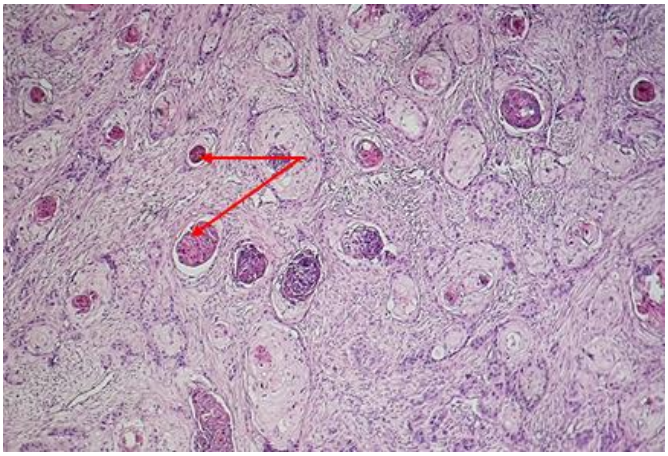

Figure 2: Moderately differentiated squamous cell carcinoma infiltrating the renal parenchyma; with the presence of residual renal tubules and glomeruli

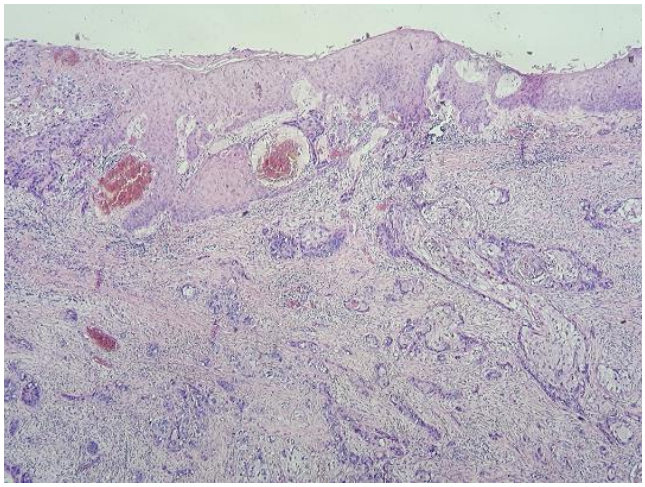

Figure 3: Squamous metaplasia of the urothelium

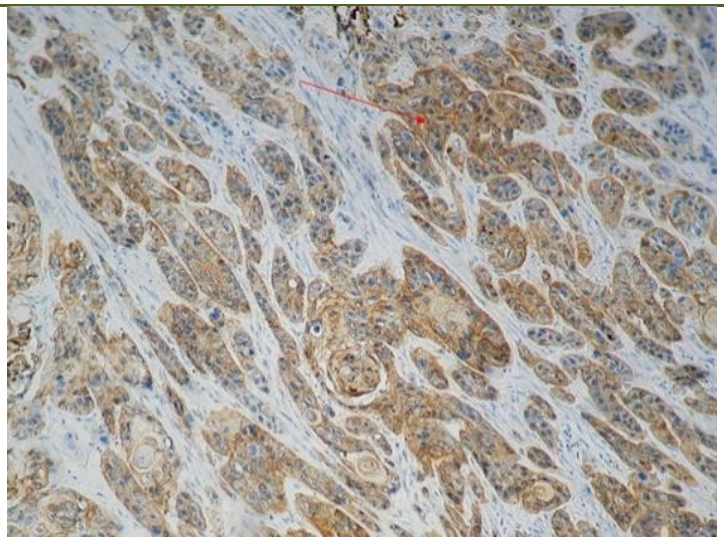

Figure 4: Immunohistochemical study showing tumor cell expression of anti-CK5/6

DISCUSSION

Primary squamous cell carcinoma of the kidney is a rare tumor and accounts for only 0.5-0.8% of renal malignancies. According to recent literature, the mean age is 60 years. There is a male predominance, probably due to a higher incidence of renal lithiasis in men [5-7]. These tumors are very aggressive. They are usually diagnosed at an advanced stage and have a poor prognosis compared to other malignant tumors of the kidney. [2]. Chronic irritation, inflammation, and infection induce squamous metaplasia of the renal collecting system, which may progress to dysplasia and squamous cell carcinoma in some patients [1-8]. The main predisposing factors are kidney stones, infections, exogenous and endogenous chemicals (e.g. arsenic), history of kidney stone surgery, abuse of analgesics, radiation therapy and vitamin A deficiency [6]. In our case, we hypothesize that the tumor arose on chronically inflamed hydronephrotic kidney irritated by large stones. The poor symptomatology, and the non-specific radiological aspect usually delay the diagnosis [9]. Clinically, the symptomatology includes abdominal or flank pain, microscopic or macroscopic hematuria, fever, weight loss or a palpable abdominal mass [1]. However, it may be incidental on imaging performed for other reasons. Radiologically, squamous cell carcinoma of the kidney appears as a solid mass with hydronephrosis and calcifications [3]. Its radiological differential diagnosis includes other primary and secondary renal tumors and lithiasis xanthogranulomatous pyelonephritis. Due to the lack of specific radiological aspects, the diagnosis of renal squamous cell carcinoma by the currently available imaging means is difficult. Therefore, the diagnosis of renal squamous cell carcinoma is usually made after surgical resection and histological analysis of the resected specimen (this was the case in our patient) [10]. Patients with stage T1-T2 squamous cell carcinoma can be treated with radical surgery and have a good prognosis although at least 50% of patients develop symptomatic residual tumor or local recurrence [11]. Adjuvant chemotherapy and radiotherapy can be administered in advanced renal squamous cell carcinoma but have not shown any survival benefit [12]. Yet, the prognosis of renal squamous cell carcinoma is generally poor. According to the literature, the median survival is only a few months postoperatively. Holmäng *et al*., reported a mean survival time of 7 months [8]. The 5-year survival rate is less than 10% [13]. Most cases usually present at an advanced stage-PT3 or higher [14]. Thus, early diagnosis, monitoring of patients with long-term nephrolithiasis, and new treatment modalities are needed to improve the management of these patients. Primary squamous cell carcinoma of the kidney should be distinguished from metastatic squamous cell carcinoma by the combination of clinical paraclinical and histological data.

CONCLUSION

Chronic kidney stones increase the risk of development of squamous metaplasia that may lead to squamous cell carcinoma. Although this malignancy is rare in the kidney, patients with a long history of nephrolithiasis should be monitored and the diagnosis should be made first in the presence of a renal mass with evidence of kidney stones.

Conflicts of Interest: The authors declare no conflicts of interet.

Authors' Contributions: All authors participated in the conduct of this work, read and approved the manuscript.

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