ISSN 2689-8268 | Volume 4

American Journal of Surgery and Clinical Case Reports

Case Report Open Access

Squamous Cell Carcinoma of the Renal Pelvis Infiltrating the Kidney Revealed by Pyonephrosis: about a Case and Review of the Literature

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Received: 04 Jan 2022
Accepted: 14 Jan 2022
Published: 21 Jan 2022
J Short Name: AJSCCR

Citation:

Saleh NA, Squamous Cell Carcinoma of the Renal Pelvis Infiltrating the Kidney Revealed by Pyonephrosis: about a Case and Review of the Literature. Ame J Surg Clin Case Rep. 2022; 4(4): 1-3

Keywords:

Lithiasis, Pyonephrosisl; Squamous cell carcinoma; Renal pelvis; Kidney

1. Abstract

Squamous cell carcinoma of the renal pelvis infiltrating the kidney is a rare entity with a poor prognosis. It is secondary to chronic irritation of the urothelium caused by a stone or infection. It is not mentioned in practice, given its non-specific manifestation and the absence of radiological specificities. We are reporting a case of squamous cell carcinoma of the renal pelvis infiltrating the kidney presenting as pyonephrosis on lithiasis in a 62 year old patient. The diagnosis was histological, post nephrectomy.

2. Introduction

Epidermoid carcinoma of the renal pelvis infiltrating the kidney is an extremely rare entity. The diagnosis is usually not mentioned due to the rarity and inconclusive clinical and radiological features. Most patients are diagnosed at an advanced stage and have a poor prognosis. Radical nephrectomy is the mainstay of treatment [1]. We are reporting a rare case of squamous cell carcinoma of the renal pelvis infiltrating the kidney presenting as pyonephrosis on lithiasis.

3. Clinical Case

Patient B. A, 62 years old, followed for diabetes on insulin, hospitalized at the emergency departement for right pyonephrosis on lithiasis (Image 1). The symptomatology was marked by a febrile left loin pain associated with irritative lower urinary disorders (burning micturation , pollakiuria). She was treated by percutaneous nephrostomy with antibiotic therapy and rehydration. After clinical and biological improvement and at a distance from the acute episode (7 weeks), a right nephrectomy was performed. On macroscopic examination, the surgical specimen weighed 659 grams and measured 15x12x5 centimetres. The parenchyma was of a firm, white-beige consistency and was the site of haemorrhagic and necrotic changes. The cavity was occupied by a suppurated collection and several stones, the largest of which measured 3x0.5 cm. the histological examination showed a renal parenchyma destroyed by invasive squamous cell carcinoma proliferation. The cells are polygonal joined showing moderate cyto-nuclear atypia and mitotic figures. Carcinomatous nuclei are sometimes centred on horny globes. No urothelial component is seen (Image 2 and 3). The histological diagnosis of moderately differentiated and invasive squamous cell carcinoma of the pyelo-calicial cavities destroying the kidney has therefore been made. A postoperative thoracoabdomino-pelvic CT scan (3 months) did not reveal any metastasis and the renal compartiment was free.

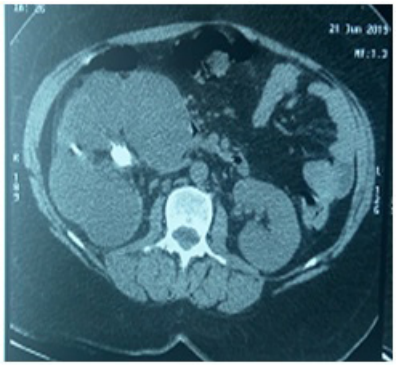

Image 1: scan image showing a right kidney with several pockets associated with destruction of the parenchyma on lithiasis

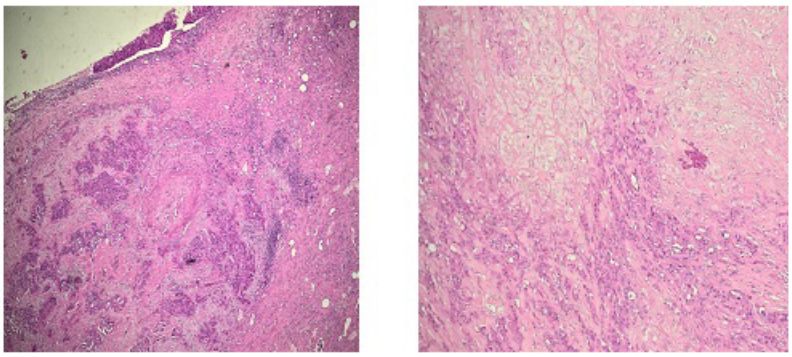

Image 2: Infiltration of the kidney by squamous cell carcinoma proliferation (x40 and x100)

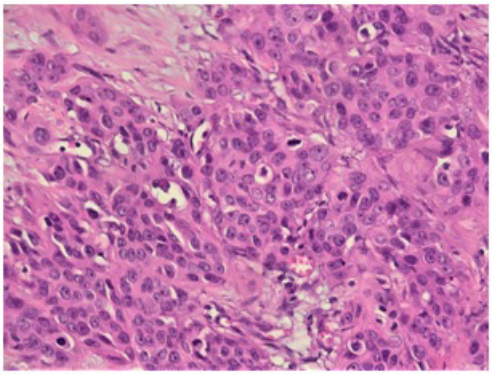

Image 3 : Contiguous polygonal cells with moderate cyto-nuclear atypia and figures (X400)

4. Discussion

Cases of pyonephrosis revealing an epidermoid carcinoma of the renal pelvis infiltrating the kidney are very little described in the literature. Based on an observation, we will discuss the different aspects of this rare entity with the data in the literature. In order of frequency, the most frequent malignant renal tumours are clear cell carcinoma, followed by papillary carcinoma and chromophobic carcinoma. Squamous cell carcinoma is rare with an estimated incidence of 0.8% [2]. Risk factors include kidney stones, chronic infections, certain chemicals, radiotherapy and percutaneous nephro-lithotomy [3]. There is a predominance of females and the most affected age group is between 50 and 70 years of age [4]. We are reporting a new observation in a 62-year-old patient. As an identified risk factor, our patient was a carrier of lithiasis which was complicated by pyonephrosis. The occurrence of squamous cell carcinoma in this context is secondary to metaplasia due to chronic irritation of the urothelium [5]. In our case, the presence of lithiasis is responsible for the chronic irritation of the urothelium.

It can manifest itself as haematuria, loin pain, kidney mass [6]. Squamous cell carcinoma of the renal pelvis or kidney can occur in several forms. In our case it was pyonephrosis. Pyonephrosis is a suppurative infection of the upper urinary tract due to an obstruction of the ureter. It is usually associated with suppurative lesions of the renal parenchyma and loss of kidney function [7]. The main clinical manifestation encountered in our patent was febrile lumbar pain with irritative urinary disorders. She did not present an episode of hematuria. Cases of skin invasion [8] or renal cyst [9] revealing an epidermoid carcinoma of the renal pelvis have been reported. In our case, it is pyonephrosis.

Imaging techniques do not allow specific features to be defined in favour of an epidermoid carcinoma of the pelvis or kidney. The lesions described are not specific such as tumour, calcification or hydronephrosis [5]. In our patient, the CT scan only described the lesions in favour of pyonephrosis on lithiasis, the suspicion of squamous cell carcinoma was not raised. The diagnosis is histopathological, the fundamental character being the presence of epidermoid differentiation [10]. In fact, histologically the cells are polygonal, joined with the carcinomatous nuclei, sometimes centred on horny globes, and there is squamous differentiation throughout the tumour, contrary to the squamous inflections frequently observed in urothelial carcinomas [11]. An intraepithelial epidermoid component is in favour of the primitive character of the tumour [6]. The lesions described in our case are typical: parenchymal destruction by invasive carcinomatous proliferation with epidermoid differentiation, joined polygonal cells showing moderate cyto-nuclear atypia and mitotic figures, and centred carcinomatous nuclei of horny globes.

The treatment focuses on nephrectomy or nephrourectomy, with cisplatin in case of metastases [12]. Given the initial hypothesis (pyonephrosis), our patient was underwent nephrectomy. On histology, the ureteral margins were healthy and there were no secondary foci in the extension assessment performed. We concluded

that it was a localised form, an adjuvant treatment was therefore not indicated. The tumour is characterised by mainly local extension [2]. Unlike other urothelial carcinomas, there is no ureteral dissemination [13]. Node metastases are less frequent, they are rather bony, pulmonary or hepatic [14]. However, the prognosis for these tumours remains poor with an average survival of 07 months and a 5-year survival rate of no more than 10% [15]. Approximately two years after diagnosis, the patient has a performance status of 1 and shows no signs of appeal.

5. Conclusion

Squamous cell carcinoma of the renal pelvis or kidney is a rare entity with a non-specific presentation. Its diagnosis is histopathological but should be considered in any elderly patient with predisposing factors, including kidney stones and chronic infections. Given its aggressive nature, treatment should be as ablative as possible. Post nephrectomy attention for pyonephrosis should be paid to the histological type and the condition of the resection margins.

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