

## Spontaneous rupture of the renal pelvis due to squamous cell carcinoma of the urinary bladder: a rare case

### Ruptura espontânea da pelve renal devido a carcinoma de células escamosas da bexiga urinária: um caso raro

DOI:10.34119/bjhrv6n5-597

Recebimento dos originais: 22/09/2023

Aceitação para publicação: 27/10/2023

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#### **ABSTRACT**

Bladder cancer is the fourth most common tumor in men and is usually diagnosed around the seventh decade of life. The predominant histological type is transitional cell carcinoma, while

squamous cell carcinomas and adenocarcinomas are less common. Spontaneous rupture of the excretory system, an obstructive complication, is a rare occurrence and even more uncommon when caused by neoplasia. The aim of this article is to report the case of a male patient with spontaneous rupture of the pelvis due to squamous cell carcinoma of the bladder. With regard to renal pelvis rupture due to primary urinary tract obstruction, stone formation (lithiasis) is the most common cause, accounting for 50%, while neoplasia ranks fifth. As for the histological subtypes of the neoplasm, it is essential to note that transitional cell carcinoma is observed in 90% of cases.

**Keywords:** rupture, renal pelvis, carcinoma, Bladder Cancer.

## RESUMO

O câncer de bexiga é o quarto tumor mais comum em homens e geralmente é diagnosticado por volta da sétima década de vida. O tipo histológico predominante é o carcinoma de células transicionais, enquanto os carcinomas de células escamosas e os adenocarcinomas são menos comuns. A ruptura espontânea do sistema excretor, uma complicação obstrutiva, é uma ocorrência rara e ainda mais incomum quando causada por neoplasia. O objetivo deste artigo é relatar o caso de um paciente do sexo masculino com ruptura espontânea da pelve devido a um carcinoma de células escamosas da bexiga. Com relação à ruptura da pelve renal devido à obstrução primária do trato urinário, a formação de cálculos (litíase) é a causa mais comum, representando 50%, enquanto a neoplasia ocupa o quinto lugar. Quanto aos subtipos histológicos da neoplasia, é essencial observar que o carcinoma de células transicionais é observado em 90% dos casos.

**Palavras-chave:** ruptura, pelve renal, carcinoma, Câncer de Bexiga.

## 1 INTRODUCTION

Bladder cancer, classified as the fourth most incident cancer in men, is typically diagnosed in the sixth and seventh decade of life [1]. The main histologic type of neoplasm of vesical trigone is the transitional cell carcinoma, while the squamous cell carcinoma and the adenocarcinoma are exceptions [2,3]. Smoking is the major risk factor, while macroscopic hematuria is the most frequent symptom [1,2].

The spontaneous rupture of the excretory system which is caused by the obstruction of the urinary tract is considered a rare complication, and it is more infrequent when the neoplasm is its cause [4,5]. The early diagnosis using a computed tomography is essential to avoid complications, such as bleeding and infection [4,6].

## 2 METHODS

This is an observational and descriptive study based on the analysis of a medical record of a patient which was possible after the Free and Informed Consent was signed by a family member. Databases from Scielo and mainly from PubMed were used to correlate data in the

bibliography. The study was approved by the Research Ethics Committee under protocol 5.682.758.

### 3 CASE REPORT

A male patient, 77 years old, smoker, former alcoholic and having multiple comorbidities, was admitted with abdominal distension and diffuse pain. On physical examination, distended abdomen, which was painful to the palpation of the right iliac fossa, with no signs of peritonitis was observed. Laboratory tests showed creatinine 2.4, urea 75 and urinalysis did not show infection related to microscopic hematuria. About the abdominal computed tomography with contrast, right renal forniceal rupture; urinoma; moderate dilation of the bilateral collecting system; densification of the perirenal and periureteral adipose tissues as well as moderate quantity of free liquid in the abdominal cavity; and bladder showing partial repletion, homogeneous content and diffuse wall thickening.

A conservative treatment consisted of indwelling urinary catheter insertion and out-of-hospital ceftriaxone was chosen. The patient returned to the service three days after hospital discharge presenting with anuria and worse abdominal distension. The lab tests showed creatinine 5.2 and urea 128, and a new tomography showed the increase in the free fluid in the abdominal cavity. Through a cystoscopy, an irregular mass in the vesicle trigone, infiltrating both meatuses, was visualized. A transurethral resection of bladder was performed and a bilateral double J stent was inserted. The anatomopathological examination showed invasive and moderately differentiated epidermoid carcinoma in 98% of the analyzed fragments. The patient clinical condition improved and he was discharged from the hospital on the fourth day after the surgery.

Figure 1: lesion of the right renal pelvis with extravasation of contrast- excretory phase.



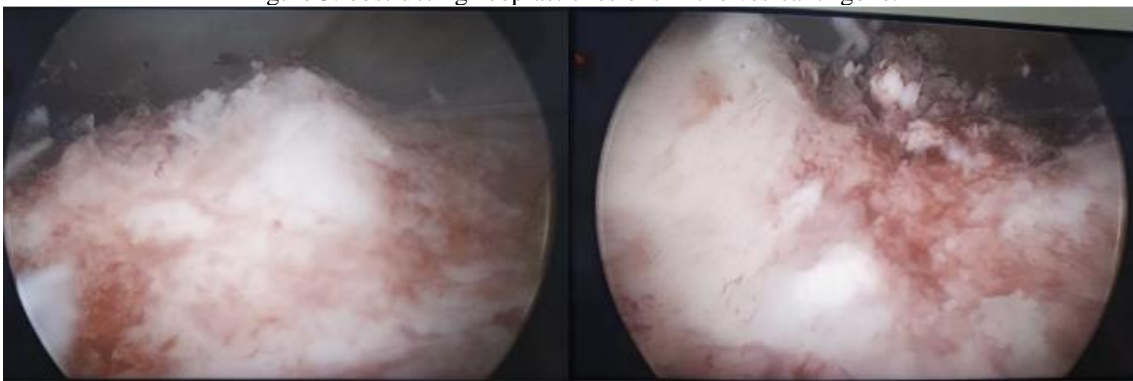
Source: Own authorship

Figure 2: lesion of the right renal pelvis with extravasation of contrast- excretory phase.



Source: Own authorship

Figure 3: obstructing neoplastic lesions in the vesical trigone.



Source: Own authorship

#### 4 DISCUSSION

Regarding the renal pelvis rupture after the obstruction of the urinary tract, the lithiasis is responsible for most of the cases described in the literature. It was registered in 505 of the cases, followed by intravenous urography, pregnancy, prostatic hyperplasia, neoplasm and aortic aneurysm [7].

During the review of the previously mentioned database, only 10 reports about rupture due to the neoplasm were found. In five of them, it was found in the inferior urinary tract and, in the other five, it was found in the inferior tract - all of them were in advanced stage. Studies showed that the incidence of infiltration leading to hydronephrosis in bladder lesion was 13.7% for unilateral hydronephrosis and 3.2% for bilateral hydronephrosis [8,9].

Concerning the histologic subtype of neoplasm specifically, it is important to highlight that the transitional cell carcinoma is the most prevalent, being found in 90% of the cases [8]. Among the reports which were analyzed, seven confirmed urothelial in anatomopathological examination and squamous cell carcinoma was not found in any of them. For this kind of

carcinoma, there is a study that mentions schistosomiasis and chronic infection as risk factors, however, none of them were found in this reported case.

## **5 CONCLUSION**

According to the presented data, it was possible to observe how rare the cases reported in the literature regarding squamous cell carcinoma of the urinary bladder are as well as its occurrence with renal pelvis rupture and other complications.

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