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Three simultaneous primary urologic malignancies in a single patient: A case report and review of the literature

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ABSTRACT

INTRODUCTION: The simultaneous appearance of several primary cancers is rare.

PRESENTATION: We report the case of a 77-year-old man admitted to the Mohammed V military hospital in Rabat (university hospital) and presenting severe dysuria on the PSA test which was 10.83 ng / ml. The prostate MRI performed revealed a suspected lesion. He had left renal colic associated with hematuria two weeks later. A CT scan of the abdomen and pelvis performed revealed a 14 × 12 mm middle and lower calyx excretory tract tumor on the left and a 27.6 × 26.4 lower right polar kidney tumor enhanced after injection of product from contrast. The prostate biopsy confirmed an adenocarcinoma of the prostate. He first underwent a left nephroureterectomy for the tumor of the excretory tract, followed by radiotherapy combined with hormone therapy for his adenocarcinoma. It was decided to monitor the tumor of the right kidney.

DISCUSSION: The literature contains only a few case reports and reviews of patients with three or more synchronous malignancies. We report the case of a man in whom three different cancers were found over a period of three months. The patient had no significant medical history, such as a family history of cancer or chemotherapy other than old age and chronic smoking. Therefore, we suggest that these factors may favor the occurrence of several synchronous primary cancers.

CONCLUSION: There is no consensus on the treatment of multiple malignant tumors. Patient care is individual, by a multidisciplinary team, accounting for the type and the stage of each tumor with a more conservative approach.

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1. Introduction

Multiple primary malignant tumors occurring in the same patient have rarely been described. This pathology is diagnosed when a patient presents with more than one primary malignant tumor and with different histological findings. Various physiopathological mechanisms have been proposed to explain their appearance, but none have been demonstrated. The most incriminating risk factors seem to be the family history of neoplasia and smoking. Three or more malignant tumors have rarely been reported in the literature. Few studies have been published in patients with multiple primary malignancies. Technological advances and increased survival have contributed to the likelihood of detection of several tumors. Most of the articles reported two histologically different malignant tumors [1–3]. The SCARE criteria were used to perform this work [4]. Here we present the case

of a 77-year-old man with prostate adenocarcinoma, upper tract tumors and kidney cancer.

2. Case report

77-year-old patient, In good general condition, ASA 2, hypertensive under beta blocker, he was a heavy smoker with no significant history of alcoholism or drugs. There was no relevant family history and no specific cancer pedigree was found, presents with severe dysuria with rectal examination finding a right lateral T2b nodule and PSA testing achieved was 10.83 ng / ml. Prostatic MRI performed on 10/12/2019 found a lesion of the right posterolateral area classified as PIRADS 4 (Fig. 1). Two weeks later, the patient consulted the emergency room for left renal colic associated with hematuria. A computed tomography of the abdomen and pelvis performed on 10/26/2019 revealed left ureterohydronephrosis with a 14 × 12 mm middle and lower calyceal excretory tract tumor on the left and a lower right polar renal tumor of 27, 6 × 26.4 enhancing after injection of contrast medium (Fig. 2). The cystoscopy was normal

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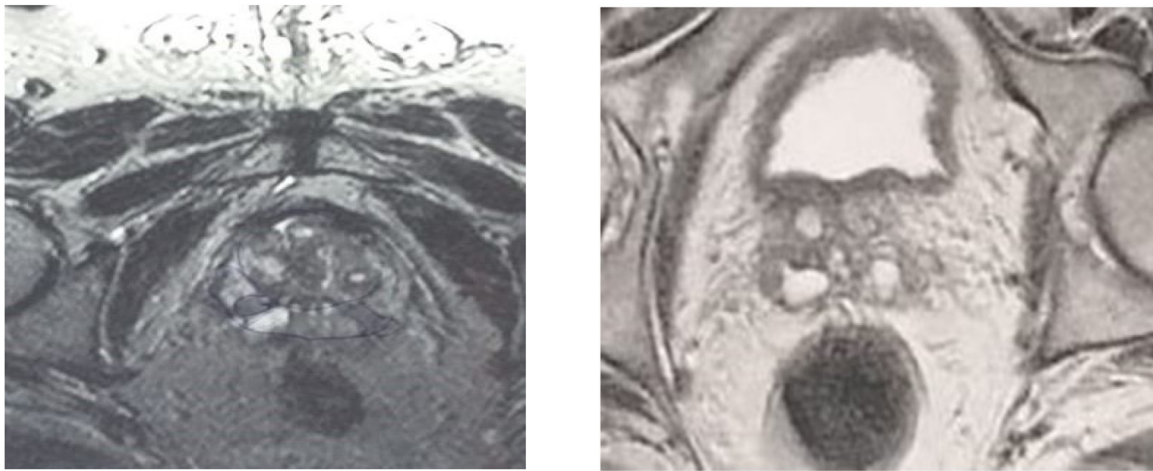


Fig. 1. Prostatic MRI showing found a lesion of the right posterolateral area classified as PIRADS 4.

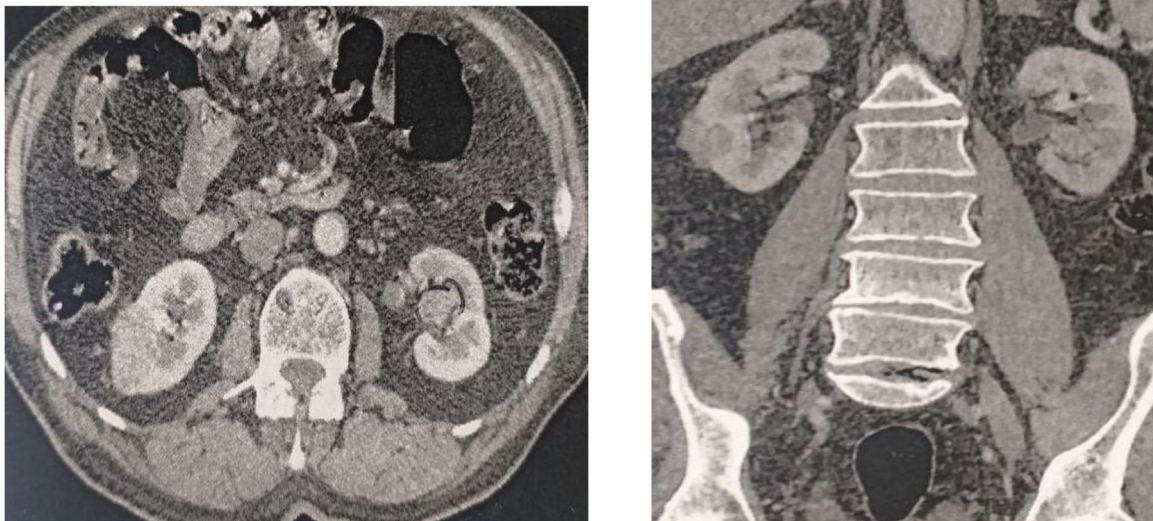


Fig. 2. Axial and coronal computed tomography image reveals a process of the excretory tract in the left renal and a lower right polar renal lesion.

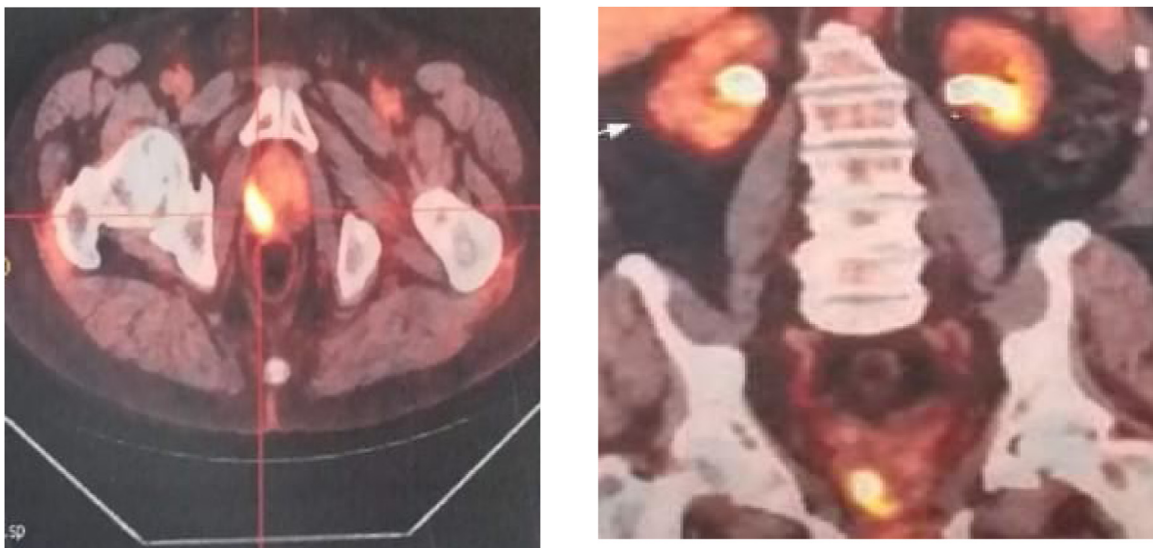


Fig. 3. PET-CT 18-FDG a confirms a hypermetabolic focus of the right prostate lobe, with hypofixed irregularity of the right postero-lateral renal.

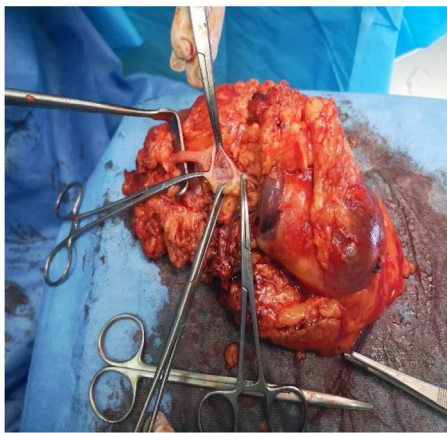


Fig. 4. The left nephroureterectomy image showing a tumor in the excretory tract.

On 16/01/2020, he underwent a prostate biopsy confirming adenocarcinoma of the prostate, Gleason score 7 (4 + 3) ISUP 3 with the presence of peri-nervous involvement. Positron emission tomography - Computed tomography (PET-CT) with 18-FDG confirmed a hypermetabolic focus of the right lobe of the prostate, with a hypofixed irregularity of the right posterolateral renal contour (Fig. 3).

Faced with the presence of multiple synchronous neoplasms, the management was discussed in a multidisciplinary team. He first underwent a laparoscopic left nephroureterectomy on 03/11/2020 (Fig. 4). The following surgery was simple and without incident. The patient returned home 6 days after the operation. The patient benefited immediately after the operation from good analgesia, thromboprophylaxis and early recovery. Pathological examination confirmed a low-grade invasive urothelial carcinoma of the upper excretory pathway of 3.5 cm extended to the ureter with a healthy surgical margin. Intensity-modulated radiotherapy associated with neo-adjuvant hormone therapy was decided for his prostatic adenocarcinoma and monitoring of the right polar kidney tumor.

The postoperative course was simple. After 6 months of follow-up, the patient was in good general condition. Thoraco-abdominopelvic CT scan showed stability of the right kidney tumor and no recurrence of urothelial carcinoma was found.

3. Discussion

Primary malignant tumors in the same patient have been rarely described [1]. The diagnostic criteria were conceptualized by Warren et al. [2]. Multiple primary tumors are defined as the occurrence of more than one synchronous (within 6 months) or metachronous tumor in the same individual. These definitions differ from study to study. Tumors must appear in different sites and / or are different histology. Due to the improvement of diagnostic means and the aging of the population, the number of cases described seems to be increasing [1,2]. The majority of primary cancers reported are primarily described in the gastrointestinal and genitourinary systems [3]. Wegner [4] reported that the most common tumor malignancy association in their series was prostate cancer and urothelial cancer in patients with multiple primary tumors (12 %). Powell et al. [5] cited prostate cancer as the first most common type of cancer. The incidence of prostate cancer in men with urothelial carcinoma was detected 2.7 %, which is 70 times higher than in the general population [6]. Our patient was diagnosed with adenocarcinoma of the prostate and urothelial carcinoma of the excretory tract, which have different histopathological criteria. Associated with a lower right polar renal lesion in favor of a renal tumor suspected of malignancy. The incidence of urothelial carcinoma and multi-

ple malignancies increases with age. Indeed, elderly patients are more likely to develop multiple primary malignant tumors [5,6] which was the case with our patient. Spratt and Hoag reported that the prevalence ranges from 0.7 % to 11.7 %. They assume that people living to extreme ages can be affected by several cancers with greater frequency [7]. Their appearance is a rare event but increasingly described. Several theories have been proposed to explain their occurrence but none have been proven. Certain risk factors seem to be the common denominator such as smoking and a family history of neoplasia [8, 9, 10] Concerning our patient, the family history is negative. He has no history of chemotherapy or radiation exposure. Chronic smoking appears to be the contributing factor in this patient.

Further cytogenetic and molecular studies are needed to describe the extent of the problem and determine predisposing factors. In this kind of situations, it will be preferable to act fastly in order to make feasible a conservative approach thus keep a better quality of life. [1,7,8]. The treatment applied to this patient follows the general principles of this conservative approach

4. Conclusion

In our patient, we first treated the most aggressive tumor (upper urinary tract tumors) by performing a left nephroureterectomy. And then we opted for hormonal therapy combining radiotherapy and active monitoring for the right kidney tumor.

Declaration of Competing Interest

The authors report no declarations of interest.

Funding

None.

Ethical approval

Approval is not required for the case report in our institution.

Consent

Written informed consent was obtained from the patient for the publication of this case report and accompanying images. A copy of the written consent is available for review by the editor of this journal upon request.

Author contribution

Ilias Hassan and Hamdoune LARBI are the main authors. Tetou Mohamed and Mrabti Mohamed are second authors. Alami Mohamed is the head of the urology department Ahmed Ameer is the head of the urological surgery pole who oversaw patient care and led the project.

Registration of research studies

This is a case report only. There was no research involving human participants. There was no trials or observational research undertaken.

Guarantor

Mr. Ahmed AMEUR (Professor of higher studies). Ahmed AMEUR, urology department of Mohammed V military hospital in Rabat (university hospital) Rabat, Morocco.

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