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CASE REPORT

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Triple primary malignant tumors of bladder, prostate and lung: Case report

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Abstract

The increasing effectiveness of cancer therapies and the improvement of diagnostic tools have led to better survival rates among cancer patients. This situation has made the problem of developing subsequent primary tumors more frequent.

We report a case of a 64 years old male patient with a triple primary malignant tumor of bladder, prostate and lung. Despite it a very low incidence of triple primary tumors in a single patient, only a few cases of three malignancies have been described. The aim of this article is to present an interesting case and shows that is possible to successfully treat a patient with multiple tumors.

Keywords: *triple primary malignant tumor, prostate cancer, lung cancer, bladder cancer*

Case report

A 64-year-old man with lower urinary tract symptoms went to his urologist with macroscopic hematuria. No other complaints. The prostatic specific antigen (PSA) was 4.23 ng/ml. During investigation, a cystoscopy was performed and showed a tumor of the left lateral wall and bladder neck. We performed a trans-urethral resection of bladder (TURB) and prostate (TURP), the pathology showed nodular hyperplasia of the prostate and invasive sarcomatoid carcinoma of the bladder (Figure 1). A CT Scan was performed for tumor staging and evidenced a solid tumor located at the apex of the right upper lobe, measuring 2 × 1,5 × 1.7 cm in the longitudinal axes suggestive of primary lung neoplasm or secondary neoplastic involvement (Figure 2).

A CT-guided transpleural biopsy was performed, revealing a mixed mucinous/non-mucinous adenocarcinoma, invasive and poorly differentiated, located in upper right lobe. A segmentectomy was performed without major complications ant the tumor stage was IA (pT1a pN0 pMx) (Figure 3). Patient underwent chemotherapy with methotrexate, vinblastine, doxorubicin and cisplatin (MVAC), evolving with a good response. The patient remained under careful urological follow-up and after 1 year and 6 months presented a bladder tumor recurrence evidenced in a Ressonance Magnetic Imaging (Figure 4), so we performed a new TURB/TURP. Besides recurrence in the bladder, the pathology showed a prostate tumor Gleason 4+3 (Figure 5). We proposed the patient to perform 3d conformational radiation therapy.

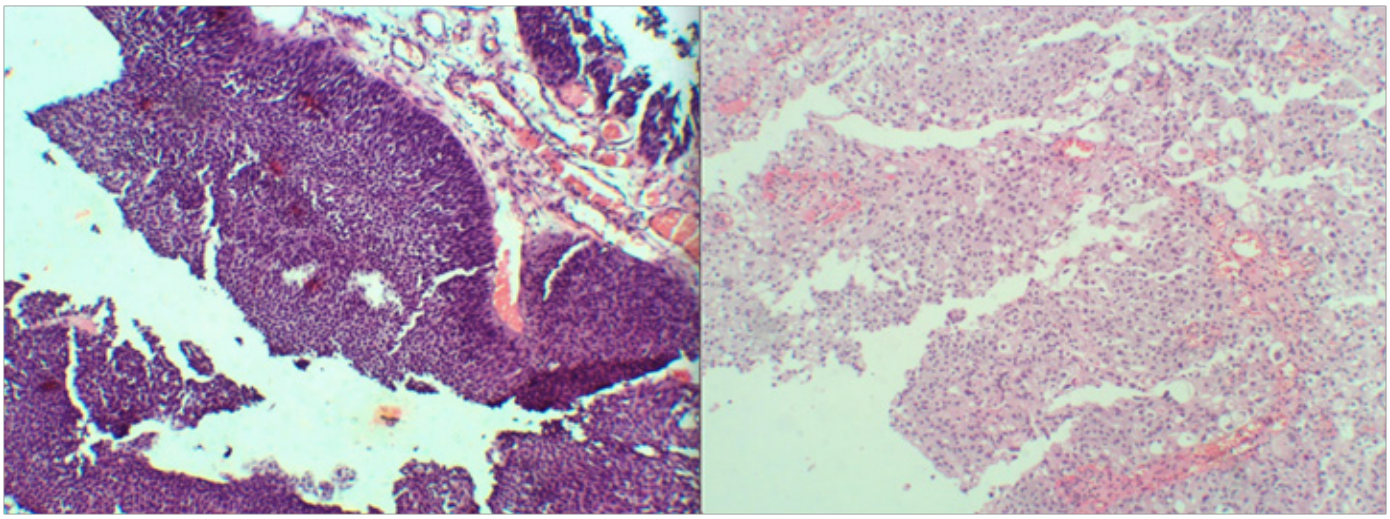

Figure 1. *A) Urothelial neoplasm with marked cellular proliferation, with discrete atypia. B) High-grade urothelial carcinoma.*

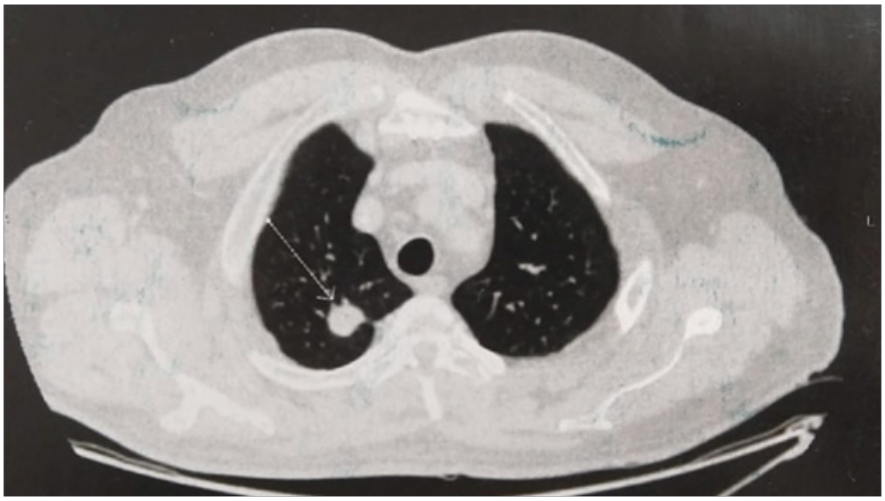

Figure 2. *Solid tumor located at the apex of the right upper lobe, measuring 2 × 1,5 ×1.7 cm.*

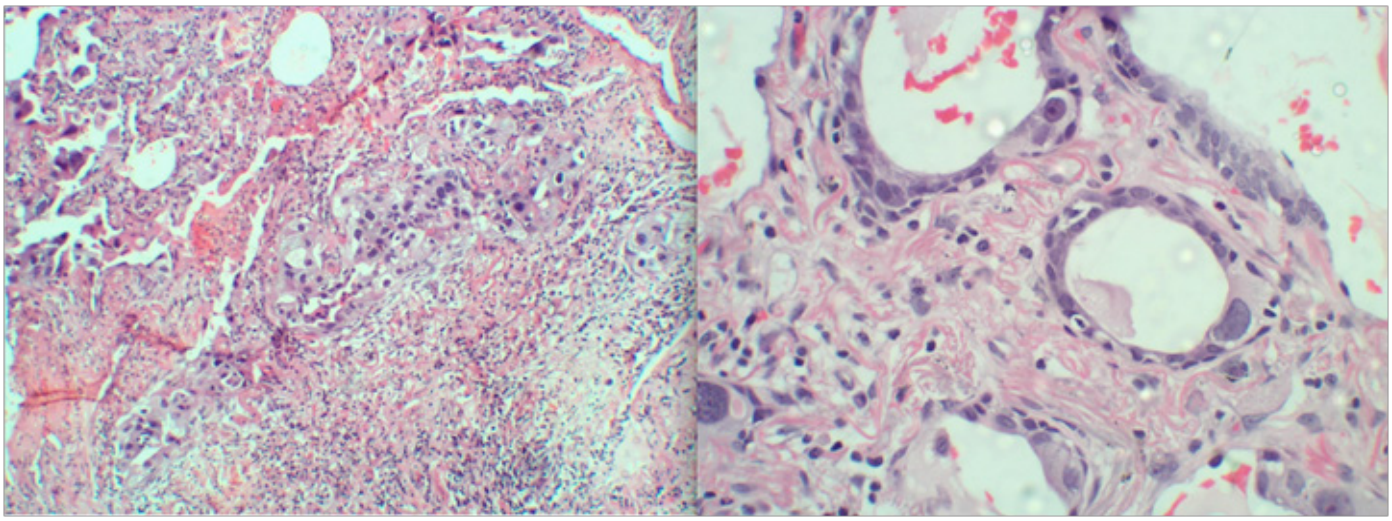

Figure 3. *A) Pulmonary adenocarcinoma: area with a more solid pattern, where atypia is more evident. B) Pulmonary adenocarcinoma: acinar-like glands with atypical epithelium.*

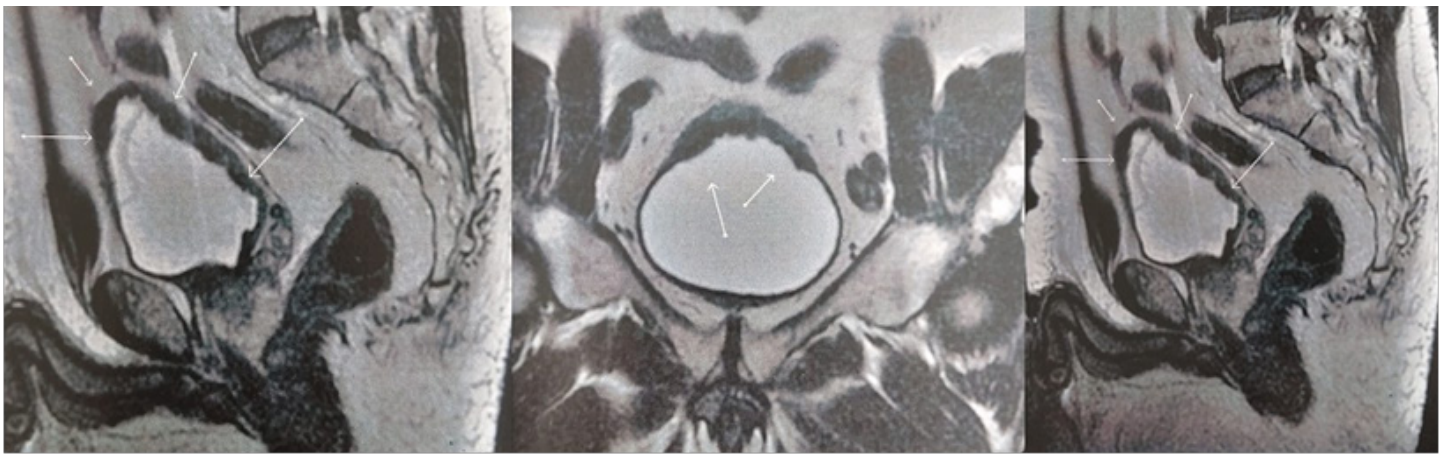

Figure 4. *Diffuse and irregular parietal thickening of the posterior and superior bladder with suspicious appearance, enhanced by contrast, no signs of extension to perivesical fat.*

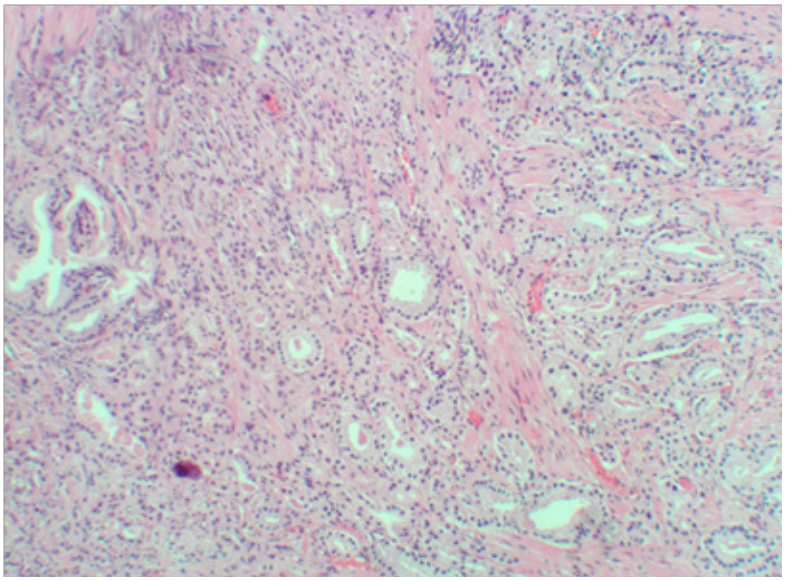

Figure 5. *Adenocarcinoma of the prostate: This photomicrograph shows a predominant pattern of fused acinus and a secondary pattern in which the delineation of acinus is more evident (Gleason 4 + 3).*

In the last 2 years, we observe a complete remission of bladder cancer, PSA control 0.8 ng/dL and normal CT scan follow up.

Discussion

One of the first descriptions of multiple primary tumors was given by Warren and Gates in 1932. According to the authors, criteria to diagnosis were [1]: 1- Histological confirmation of malignancy, 2- There should be at least 2 cm of normal mucosa between the tumors. If the tumors are in the same location, then they should be separated in time by at least five years, 3- Probability of one being the metastasis of the other must be excluded.

The two most common definitions currently used are provided by the Surveillance Epidemiology and End Results (SEER) project and the International Association of Cancer Registries and International Agency for Research on Cancer (IACR/IARC).One of the main differences is that according to IACR/IARC, several groups of topography codes of International Classification of Diseases for Oncology 3rd Edition (ICD-O-3) are considered one site in the definition of multiple primaries [2].

The SEER database recommends to use a 2-month period to distinguish between synchronous and metachronous multiple primaries.Rules according to the IARC suggest the registration of synchronous tumours diagnosed in an interval of less than 6 months [3].

The epidemiology shows that multiple primary malignancies are increasing over the last decades. Factors accounting for the increasing frequency of multiple primaries are improved diagnostic tests, increasing and more sophisticated treatment, improved screening and surveillance of patients with cancer [4]. The risk of developing a second primary malignancy is varying in different cancer sites and is reported in a range from 1% (primary liver malignancy) up to 16% (primary bladder cancer) [5]. A literature review of 104 269 cancer patients concluded that the prevalence of multiple primary tumors is 11.7% and triple primary tumors occurring in only 0.5% and quadruple or five-fold cancers in less than 0.1% of the population [6].

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