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Case Report Open Access

Concomitant Occurrence of Psoas Muscle and Splenic Metastasis from Squamous Cell Carcinoma of the Urinary Bladder: A Case Report

Bouchikhi AA*, Amiroune D, Khallouk A, Tazi MF, Mellas S, El Ammari J, El Fassi MJ and Farih MH

Urology Department, University Hospital of Fez, Fez, Morocco

Abstract

Introduction: Skeletal muscle is a rare localization of bladder cancer metastasis. Very few cases of urothelial carcinoma metastasis in psoas muscle were reported in the literature. We report concomitant psoas muscle tumor metastasis and splenic metastasis originated from urinary bladder squamous cell carcinoma. This association was never, described in earlier medical literature.

Case report: The patient was 45 years old Moroccan male. He underwent trans-urethral bladder tumor resection (TURB). The diagnosis was done a month earlier in the emergency department while consulting for side pain and right leg swelling. The patient was feverish and showed an advanced general state deterioration. The CT-scan revealed a typical aspect of right psoas abscess associating a metastatic splenic localization. The ultrasound of the right leg showed an extended thrombophlebitis. The patient underwent a surgical drainage of psoas abscess and biopsies. The histopathological and immunohistochemistry studies demonstrated squamous carcinoma of the psoas muscle with very low differentiation. These tumors were originated from metastasis of this abscess. Despite the anticoagulant treatment, the patient died of pulmonary embolism after 3 weeks of surgical treatment.

Conclusion: The reported psoas squamous carcinoma was originated in the bladder with splenic metastasis. It is the first report in the literature. Considering the possible metastatic origin of the psoas abscess, it is recommended to avoid a useless surgical drainage.

Keywords: Psoas squamous carcinoma; Bladder squamous carcinoma; Splenic metastasis

Abbreviation: CT: Computer Tomography

Introduction

Psoas and spleen are two uncommon localizations of metastatic bladder cancer. They are potentially originated by psoas skeletal muscles metabolism disorders, and splenic anti-tumoral activity such lymphoïd organ [1,2]. In addition, other anatomic and functional aspects are involved [1,3,4]. We report concomitant occurrence of psoas muscle metastasis and splenic metastasis from urinary bladder squamous cell carcinoma. To our knowledge, such association was never described in earlier medical literature.

Case Report

The patient was 45 years-old (sans profession) no occupation non-smoker Moroccan man from Berber ethnical roots; he was followed for bladder cancer without any other significant medical history and without family cancer history.

The patient underwent trans-urethral resection of the bladder (TURB). The resection histopathological study demonstrated a squamous bladder carcinoma with very low differentiation (Figure 1). The HES histological study magnified 10 times demonstrated carcinoma proliferation organized in voluminous cells with abundant eosinophilis with clear limits of cytoplasm and hyperchromatic nuclei. Mitosis and inflammatory stroma were also demonstrated. These findings have all demonstrated epidermoid carcinoma of very low differentiation.

One month later, the patient suffered of acute flank pain and fever. The patient was admitted in our emergency department. The physical examination found a patient in degraded general condition with fever of 39 degrees Celsius and swollen right leg. In addition, the patient demonstrated softness of the right flank and right psoitisis. Neither palpable abdominal mass nor softness in other abdominal area especially in the left lower quadrant was found.

The biological investigations showed leukocytes at 18.5 G/L while the normal range is between 4.4 and 11.3; the hemoglobin was at 12.5 G/dL while the normal range is between 14 to 17.5. Finally the C-reactive protein (CRP) was at 200 mg/L while the normal value should be less than 6.

The ultrasound of the right leg showed an extended thrombophlebitis in the right primitive iliac vein. The CT-scan demonstrated a bladder tumor with thick wall and ganglions. Retroperitoneal and inguinal enlargement with out-flowing invading the right psoas muscle was

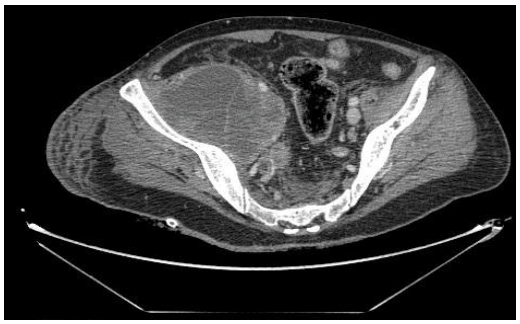

Figure 1: CT scan image showing the psoas malignant abscess.

***Corresponding author:** Bouchikhi AA, Rue Zag, Rce Andalous III, Quarier Al-Wafe, Morocco, Tel: +212 622 074 723; Fax: + 212 535 619 321; E-mail: drbouchikhi@gmail.com

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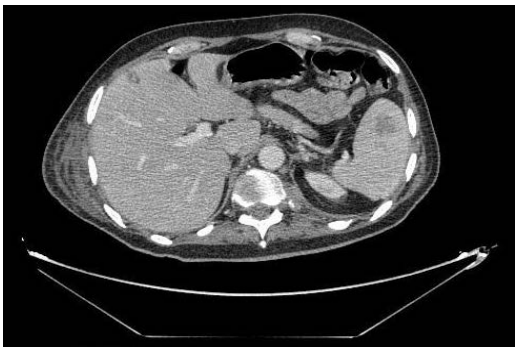

Figure 2: CT scan image showing the splenic metastasis.

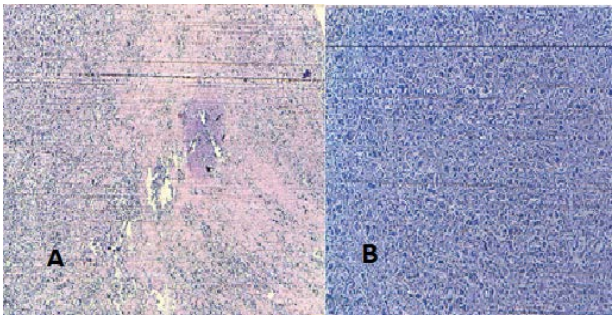

Figure 3: A and B) HES x5O squamous carcinoma of the psoas; HES x100 squamous carcinoma of the psoas.

shown (Figure 2). In addition, thrombosis of the right iliac vein and metastatic splenic lesions were demonstrated (Figure 3A). The CT-scan of brain and chest didn't reveal any particular abnormalities. The Wells' Criteria for Pulmonary Embolism was chest pain and dyspnoea.

The surgical incision allowed draining the psoas muscle and achieving biopsy samples. During surgery, the anatomic landmarks were not clearly identified. The study of biopsied samples of cockle abscess by the histopathological and immunohistochemistry approaches showed very low differentiation of squamous carcinoma in psoas muscle, while expressing p63 in immunohistochemistry. This allowed confirming the bladder origin of this metastasis (Figure 3B). The HES histological slice magnified 10 times demonstrated malignant swelling proliferation arranged in different orientations. This proliferation was constituted by atypical large size and well delineated cells connections of abundant eosinophiles cytoplasm with hyperchromatic nuclei. Mitoses were also identified. Considering the orienting clinical profile of the patient and the positive immune-marker by the antibody 'anti P63', the retained diagnosis was metastatic epidermoid carcinoma. Finally, the patient received a daily prophylactic bolus of anticoagulant treatment 0.4 milliliter/day. However, the patient died following a pulmonary embolism including after three weeks of admission.

Discussion

Considering the Medline literature investigation of published papers between 1970 and 2012, we found 6 reports of bladder cancer metastasis originating a psoas muscle. These cases were reported with histopathological investigation of psoas biopsy.

The first case was reported in 1980 by Yap et al. [5] followed by 2 cases reported by Masters et al. [6], then a case was reported by Zargooshi [7] and finally 3 cases reported by Nabi et al. [8]. Indeed, all reported cases were secondary to a transitional cell bladder carcinoma and have been presented in the form of a psoas abscess.

The rarity of the psoas metastasis is explained by skeletal muscle properties such as the muscle movements, PH, cumulating metabolites and skeletal muscle ability to remove lactic acid [8-10].

However, Masters et al. [6] reported two cases that followed a surgical drainage of abscess lesions. Indeed, our patient matches up this last reported profile.

Besides, two cases of splenic metastasis of bladder cancer were reported by Goldstein et al. [11]. The first case described an undifferentiated carcinoma and the second a signet ring of carcinoma cell in the bladder; both cases were revealed by a splenic rupture.

The spleen is an exceptional host of metastasis which is probably due to the absence of afferent lymphatic's that might carry metastatic tumoral cell to this organ. The anti-tumoral activity is due to high concentration of lymphoid tissue. Other anatomic and functional factors are also limiting the metastasis risks. These factors included the sharp angle of the splenic artery that is making a difficulty for tumor emboli to enter the spleen [12-14]. However, there wasn't any earlier report of psoas and spleen metastasis originating from bladder carcinoma. Indeed according to the literature review, our case is the first found to associate both psoas and spleen metastasis originating from a bladder carcinoma cancer with very low differentiation. In addition, it is the first to report psoas metastasis from squamous carcinoma of the bladder. The expression of p63 by the psoas carcinoma allowed confirming the bladder origin of the tumor since the carcinoma demonstrated very low differentiation. The p63 marker is expressed by bladder but not by skeletal muscle [15].

The surgical drainage of the abscess secondary to tumoral necrosis should be avoided in emergency procedure since it might be fatal for the patient.

This should allow achieving longer survival, and to prevent cancer spread and multiple metastasis. Attitudes of drainage and hospitalization in intensive care with intravenous antibiotics and rehydration with close supervision are controversial.

The patient will be further treated by chemotherapy.

Conclusion

This atypical case of psoas tumor originating from bladder squamous carcinoma and associating splenic metastasis is the first report of the literature. These two metastatic localizations are generally associated with poor prognosis. Indeed, larger series study would allow a better understanding of combined metastatic mechanisms for better therapeutical care and outcome. Considering the possible metastatic origin of the psoas abscess, it is required to avoid useless surgical drainage that might be fatal for the patient.

Consent

Written informed consent was obtained from the patient for publication of this case report and any accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal.

Competing Interests

The authors declare that they have no competing interests.

Authors Contributions

AAB was the principal author and major contributor in writing the manuscript.

KM, IH, KB, HA, JE, AK and DA analyzed and interpreted the patient data and reviewed the literature. MFT, SM, MJE, AK and MHF read and corrected the manuscript. All authors read and approved the final manuscript.

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