CASE REPORT

Metastatic carcinoma of the urinary bladder presenting as a submental swelling

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Summary
Transitional cell carcinoma (TCC), the most common variant of bladder cancer, is a heterogeneous tumor with a diverse collection of biological and functional characteristics. Only very few cases have been reported in the English literature to metastasize to the head and neck region. A new case of submental metastasis of urinary bladder TCC with bilateral extension to the submandibular area is presented.

KEYWORDS
Transitional cell carcinoma; Urinary bladder; Head neck metastasis

Introduction
Transitional cell carcinoma (TCC), the most common variant of bladder cancer, is associated with a high relapse rate, with most cases of treatment failure being associated with evolution of metastases to the lymph nodes, lungs, liver or bone.1 Very few cases of head and neck metastases originating from urinary bladder carcinoma have been reported. The purpose of this paper is to present a new case of submental metastasis of urinary bladder TCC with bilateral extension to the submandibular area.

Case report
A 59 year old white man was referred to the Department of Oral and Maxillofacial Surgery of Theagenion Anticancer Hospital, for treatment of a submental swelling with bilateral extension to the submandibular region (Fig. 1).

The past medical history revealed that the patient was treated one year ago for a carcinoma of the urinary bladder. Initially, the patient complained of disturbances in his urinary habits, dysuria (painful urination) and hematuria. A CT scan detected the presence of possible neoplastic
lesion in the bladder. A transurethral biopsy (TUR) was performed and the diagnosis of TCC of the urinary bladder was established. Furthermore a radical cystectomy was carried out, and the histological examination was confirmed the initial diagnosis. The histopathological examination revealed a highly malignant, invasive in the smooth muscle and the fat layer, TCC of the urinary bladder (Grade III, Stage T3a, W.H.O.). One month after the surgery, chemotherapy based on methotrexate, cisplatin, vinblastine and adriamycin was decided and six rounds were performed. Three months after the surgery no metastasis was observed in the abdominal and pelvic CT scan.

At the time that the patient was referred to the Department of Oral and Maxillofacial Surgery for treatment of the submental swelling, clinical examination of the oral cavity and panoramic radiograph showed no obvious findings. Fine needle aspiration cytology (FNA) was performed, but the specimens were considered insufficient for histological examination. Computed tomography of the head and neck detected bilateral inflammatory infiltration of the submental and submandibular region. An incisional biopsy was performed to confirm the clinical diagnosis of metastatic lesion.

The histological features of the biopsy material were those of a poorly differentiated carcinoma with diffuse development of malignant cells in the fibroadipose tissue (Fig. 2). An immunohistochemical study with cytokeratins 7 and 20 showed the lesion to correspond to the tumor removed one year earlier. The immunohistochemical staining showed diffuse membrane overexpression of cytokeratin 7 (Fig. 3), and focal positive membrane expression of cytokeratin 20. A final diagnosis of bladder carcinoma metastatic to the submental and the submandibular region was made. In the next two months, the patient started local radiotherapy and additional chemotherapy, the submental swelling diminished and clinical regression was observed. At this particular moment, the CT scan showed no other metastatic lesion.

After three months, a new CT examination was performed, the findings were compatible with the image of multiple metastatic lesions, in the liver, the omentum, the mesentery and in the lymph nodes of the pelvic chains. An incisional biopsy was performed in the omentum and presented identical histological and immunohistochemical features.
appearance with the submental lesion. Palliative radiotherapy and chemotherapy was administered.

Six months later, a new CT examination was performed, and revealed an increase in size and number of metastatic lesions. Additional scintigraphic examination showed uptake in many regions compatible with bone metastatic lesions. Radiotherapy was not performed due to ileus, and palliative chemotherapy was administered.

Finally the patient died 17 months after the detection of the submental metastasis.

**Discussion**

TCC is a heterogeneous tumor with a variety of clinical, biological and functional characteristics. Nevertheless despite the combinations of surgical approaches and systemic chemotherapy, TCC of the bladder is considered highly aggressive and in some cases tends to produce early metastasis. It is suggested that distant metastases initially considered to be of scant relevance because of the high incidence of local recurrence. However treatment seems to be able to reduce the latter, thereby increasing the importance of distant spread of disease. In this context head and neck metastases of primary bladder tumors have only rarely been described.

Metastases of the head and neck regions are rare and their most frequent sites are the brain, supraclavicular nodes, neck nodes and the skull. Very few cases of TCC metastasize to the jaws have been reported: one in the maxilla and seven to the mandible. Only four cases have been described in the oral soft tissues one in the tongue, one in the submandibular gland, and two in the gingival.

The microscopic appearance of the metastatic lesions is variable. Metastatic lesions may be poorly differentiated and conventional histopathologic study of the metastatic deposit is possible to give little clue of the primary site of the tumor. Immunohistochemical staining of cytokeratin (CK) 7 and 20 is usually necessary in cases of metastatic TCC of the urinary bladder to confirm the diagnosis. These markers identify both normal urothelium and TCC.

Spread through the bloodstream may be explained by primary tumor infiltration of the venous plexuses of the bladder or prostate gland. These thin-walled plexuses have few valves and drain into the internal iliac vein toward the general circulation. Infiltration of the pelvic plexuses may in turn cause metastatic spread through the vertebral venous system, bypassing the cava and producing tumor invasion of head and neck structures with out thoracic or abdominal organ involvement.

As it is documented from the literature in metastatic lesions of the bladder there is a clear predominance among the men, whereas in females, TCC of the bladder present lesser natural aggressiveness.

The evaluation of the current case, and as pointed out by other authors metastasis in the head and neck regions seems to be the first sign of tumor progression and dissemination. Consequently the detection of such lesions is a poor prognostic sign, because other still undetected metastases are typically present at the time of diagnosis.

**References**
