Case Report

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Metastatic urinary bladder transitional cell carcinoma to the oral cavity and oropharynx

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Summary
Background Distant metastasis from urinary bladder transitional cell carcinoma (TCC) is a well-reported phenomenon, most commonly occurring in osseous and pulmonary sites. In contrast, metastasis to oral and/or oropharyngeal soft tissues is extremely rare.

Methods We present a case of a 75-year-old gentleman with treated urinary bladder TCC who presented 4 years later with a base of tongue metastasis and airway compromise necessitating a tracheostomy. A systematic review of all previously reported cases of metastatic urinary bladder TCC to the oral cavity and/or oropharynx in the English literature was performed and a summary presented.

Results A total of six cases, including ours, of the aforementioned presentation have been reported in English literature.

Conclusions This is the first systematic review of all previously reported cases of metastatic urinary bladder TCC to the oral cavity and/or oropharynx in the English literature. It is an extremely rare phenomenon with a uniformly dismal prognosis.

Keywords Transitional cell carcinoma · Metastasis · Oral cavity · Oropharynx

Introduction

Urinary bladder carcinoma is the fourth most common cancer in the USA and transitional cell carcinoma (TCC) is the most common subtype [1]. Distant metastasis from TCC is a well-reported phenomenon, most commonly occurring in osseous and pulmonary sites [2]. Head and neck metastasis is rare and when present, common sites include brain, cervical lymph nodes and skull [3]. TCC metastasis to oral cavity soft tissues or oropharynx is exceedingly rare with only five cases reported to date. In this article, we present the first ever-reported case of urinary bladder TCC with oropharyngeal metastasis at the base of tongue resulting in airway compromise and necessitating tracheostomy.

Case report

The patient is a 75-year-old Chinese male with a history T2N0M0 TCC of the urinary bladder diagnosed in August 2010. He underwent a transurethral resection of bladder tumour, and subsequently a radical cystectomy with creation of an ileal conduit in December 2010. He had been well on follow up for his bladder carcinoma with no evidence of disease recurrence and presented 4 years later, in June 2014, with symptoms of intestinal obstruction. An abdominal–pelvic computed tomography (CT) scan was performed, revealing multifocal sites of intestinal obstruction likely due to adhesions from the aforementioned abdominopelvic surgery. When conservative management of his symptoms failed, a decision was made for surgical intervention.

Intra-operatively, on attempting intubation, a large friable mass at the base of the tongue was incidentally noted. Contact bleeding was significant and immediate otolaryngological involvement was sought. Haemostasis was eventually secured after repeated attempts. Biopsy of the mass was then performed. Endotracheal intubation was carried out and the abdominal surgery proceeded. Extensive small bowel adhesions to the previous midline laparotomy wound, ileal conduit site and pelvic sidewalls

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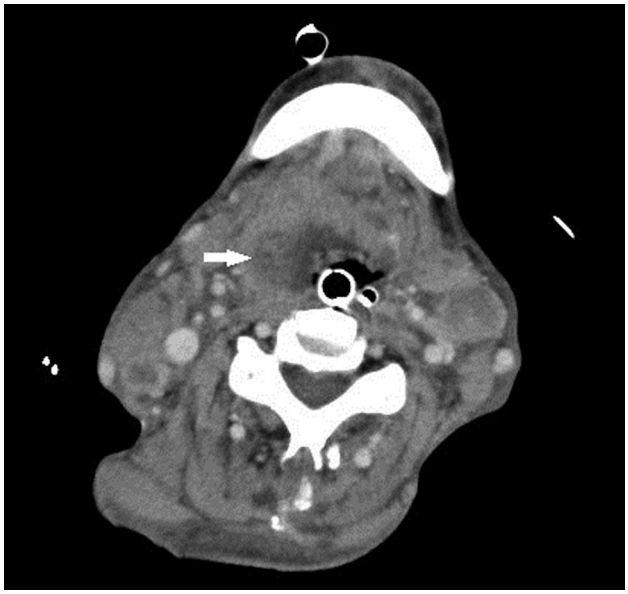

Fig. 1 Axial CT scan cut illustrating large base of tongue necrotic lesion (white arrow) with tracheostomy tube in-situ.

were noted. A single adhesion band between jejunal loops resulted in a main transition point with proximally dilated bowel loops. Due to the extremely dense adhesions, small bowel resection and an ileo-colic bypass was performed. No gross peritoneal lesions were seen otherwise. Postoperatively, the patient remained intubated as his airway was deemed threatened by the large, friable and haemorrhagic tumour at the base of tongue. After discussion with the anaesthetist and patient, endotracheal intubation was replaced by a permanent tracheostomy to secure the airway.

Biopsy results of the base of tongue tumour returned as metastatic high grade transitional cell carcinoma with papillary architecture, marked nuclear pleomorphism, prominent nucleoli and centrofibrovascular cores. A CT of chest and neck was done, which showed a 4.4×2.7×4.3 cm ulcerative tumour involving the base of tongue, extrinsic tongue musculature, sublingual and pre-epiglottic spaces, as well as extension across the midline and possible involvement of the right aryepiglottic fold. Bilateral cervical lymph node metastases were also noted (Fig. 1). The patient was offered but refused palliative radiotherapy. After a largely uneventful postoperative stay, he was discharged with tracheostomy in situ and supportive care.

Discussion

While primary head and neck cancers are the fifth most common malignancy worldwide, metastatic disease in this region is fairly rare. In the head and neck region, metastases to the oral soft tissues and jaws (mandible and maxilla) are uncommon, accounting for only 1–2% of malignant neoplasms of all head and neck sites [4–6]. When present, most of these metastases involve the jaws rather than the oral soft tissues or oropharynx [7]. In men, the most common primary malignancies to metastasize in the oral region include the lung, kidney and skin (melanoma) malignancies. In women, breast, female genital organs (uterus, cervix and ovaries) and kidney primaries are most commonly seen [8].

TCC with metastasis to soft tissue of the oral cavity and/or oropharynx is exceedingly rare. In 1975, Koper et al. [9] reported the first case of a patient with squamous cell carcinoma of the bladder metastasizing to the tip of tongue. Specifically, it is the only case to date of urinary bladder carcinoma with metastasis to the oral tongue. In contrast to our patient who was presented 4 years after definitive treatment for his urinary bladder carcinoma, Koper's patient presented with lingual metastasis at the point of presentation of bladder carcinoma. Despite chemotherapy with cyclophosphamide and 5-fluorouracil, the patient died with carcinomatosis 5 months after the diagnosis.

An extensive search on PubMed revealed that our case is the first-ever report of urinary bladder carcinoma with metastasis to the oropharynx, specifically the base of tongue. We performed a literature review of all cases of TCC with oral cavity and/or oropharynx soft tissue metastases to characterise this rare group of patients. An English literature search on PubMed performed using the terms 'Bladder carcinoma', 'transitional cell carcinoma', 'urothelial carcinoma', 'metastasis', 'oral cavity' and 'oropharynx' revealed a total of five previously reported cases, all of which occurred in the oral cavity subsites [Table 1].

Even though our patient was initially asymptomatic from the metastatic lesion with no clinical signs of airway obstruction, the large size of the tumour, coupled with its friable and haemorrhagic nature prompted prophylactic tracheostomy to secure the airway. Comparing our case to existing reports of TCC with oral cavity soft tissue metastasis, patients are rarely asymptomatic. They commonly present with symptoms of pain, swelling or ulcers of the oral cavity. Additionally, it is also interesting to note that in our case, the site of metastasis resulted in airway compromise that required prophylactic tracheostomy to secure the airway.

In current literature, as high as 30% of patients who present with a metastatic lesion in the oral region (of any primary) have an undiscovered malignancy and the oral cavity lesion is the sentinel indication of a malignancy. Unfortunately, detection of such lesions usually connotes a bad prognosis as patients often have undetected disseminated disease at the time of presentation [5].

Additionally, metastases to the oral cavity from genitourinary malignancies are usually manifestations of widespread metastatic disease [14]. It is interesting to note that while our patient developed distant metastasis on a background of previously treated urinary bladder TCC, he had an isolated metastasis to the oropharynx with cervical lymphadenopathy but without disseminated disease.

Table 1 Literature review summarizing all reported cases of urinary bladder transitional cell carcinoma with oral cavity/oropharyngeal soft tissue metastases

Serial no & year of report	Age/ Gender	Site of metastasis in oral cavity	Other sites	Treatment for oral cavity/oropharyngeal metastasis	Survival (months)	Reference
1975	62/F	Right tip of tongue	Disseminated carcinomatosis (involved sites not listed)	Chemotherapy	5	9
1981	75/M	Submandibular gland	Osseous	Surgery	Not described	10
1994	58/M	Upper gingival soft tissue	Hepatic, osseous, adrenal	None	Not described	11
2012	72/M	Right lower oral mucosa	Pulmonary	None	1	12
2013	65/M	Right cheek	Pulmonary	Chemotherapy + radiotherapy	3	13
2015	75/M	Base of tongue	Cervical lymph nodes	None (tracheostomy to secure airway)	On follow-up	Current case

M male, *F* female

The treatment of the metastatic oropharyngeal lesion depends on the tumour size, location, extent of disease and patient factors. As is the case with primary tumours, surgical intervention of metastatic oropharyngeal tumours is associated with high morbidity and difficult to achieve without significant compromise of function. Chemotherapy and radiotherapy may be offered as palliative options. Patients often have a poor quality of life without any intervention due to pain, bleeding, aspiration, difficulty breathing and the inability to eat per orally.

In conclusion, although rare, it is important to consider metastases in the oral cavity when an intra-oral lesion is detected, which might suggest widespread spread of disease from a distant site. Prophylactic tracheostomy such as in our patient may also be considered in event of airway compromise. This is the first-ever systematic review of all previously reported cases of metastatic urinary bladder TCC to the oral cavity and/or oropharynx in the English literature. Our review confirms that this is an extremely rare phenomenon with a uniformly dismal prognosis.

Conflict of interest

The authors declare that there are no actual or potential conflicts of interest in relation to this article.

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