

Pancreatic Tumor Metastasis in the Tongue: Case Report

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Abstract

Accounting for only about 1% of all oral malignant lesions, metastatic tumors in the oral and maxillofacial region are relatively rare. More specifically, prevalence of these tumors in the tongue is even smaller, only 0.2%. Pancreatic cancer rarely metastasizes in this region. This case report describes the diagnosis of a malignant pancreatic tumor that metastasized to the tongue. Clinical manifestations are discussed in light of the rare nature and severity of this tumor.

Keywords: Oral metastasis; Pancreas cancer; Oral tongue cancer

Background

Metastatic tumors in the oral cavity are quite rare, representing only 1% of all malignant oral lesions [1-3]. Oral metastases are more often observed in mandible bones, being rarer in soft oral tissues [3]. The most affected soft tissues are the attached gingiva and the tongue, and the prevalence of metastatic lesions on the tongue is of approximately 0.2% [4]. Oral metastatic tumors may originate from primary malignant lesions affecting mainly the lungs, kidneys, breast, liver, thyroid, intestines, prostate, stomach, testicles, female genitals, and the bladder [3]. This case report describes the metastasis of a pancreatic adenocarcinoma on the tongue and discusses the clinical findings and diagnostic importance thereof.

Case Report

A 66-year-old man with a record of smoking and drinking habits under follow-up treatment for bilateral nephrolithiasis associated with lumbar and abdominal pain in Hospital de Clínicas de Porto Alegre (HCPA), Brazil was diagnosed with stage IV pancreatic adenocarcinoma. The patient was briefed about his clinical condition and referred to palliative oncological treatment. Sixty days into chemotherapy a nodule surfaced on the tongue (Figure 1). The patient was then referred to the Stomatology Service of HCPA for evaluation and differential diagnosis of the lesion. Examination revealed a sessile, fibrous, multilobar nodule measuring 15 mm on the right edge of the tongue. The patient reported pain and difficulty to feed and wear a prosthesis. After local anesthesia the nodule was biopsied and the material collected was submitted to an anatomopathological analysis. In order to improve diagnosis, the material was also submitted to immunohistochemical investigation (Figures 2-4) with the avidin-biotin-peroxidase complex (ABC) based on the percentage of positively stained cells, which confirmed the diagnosis of metastasis of pancreatic adenocarcinoma. The negative control used included marker antibodies of other neoplastic tissues. The patient was receiving palliative chemotherapy, but the unfavorable clinical conditions it was not possible to surgically resect the tumor. Sixty days after diagnosis the patient passed away.

Discussion

Regardless of the region affected in the body, malignant tumors may metastasize to the oral cavity, though the first manifestation of the disease may actually be an oral metastasis [1,5]. Primary tumors in the gastrointestinal and genital and urinary tracts or even in the respiratory system are those that most commonly metastasize to the maxillomandibular complex [6]. This scenario is most often observed in the mandible, especially the molar region, since it contains a large



Figure 1: Clinical aspect of the metastatic lesion of a pancreatic adenocarcinoma that emerged on tongue. A sessile nodule is visible, presenting vascularized areas that irrigate the lesion.

mass of hematopoietic tissue and metastasis almost always propagates along the hematological route [7,8]. Among the mouth soft tissues, the attached gingiva is the site most frequently affected, followed by the tongue [1]. The likely routes of metastatic propagation to the tongue are the arterial, venous, and lymph routes. The tongue base is the most affected site, probably due to the presence of a rich network of blood and lymph vessels [3,9].

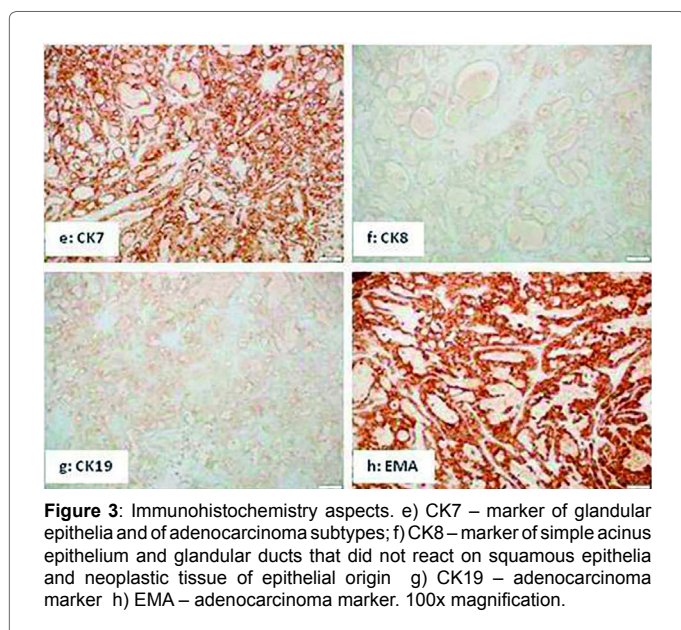
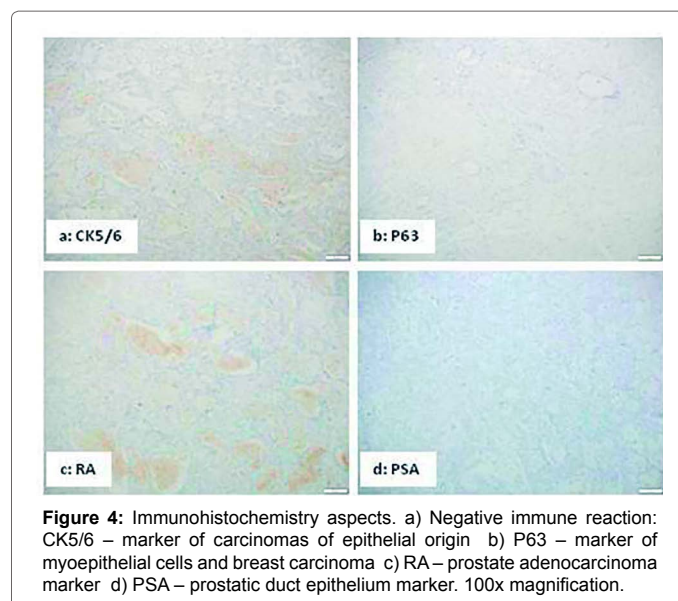
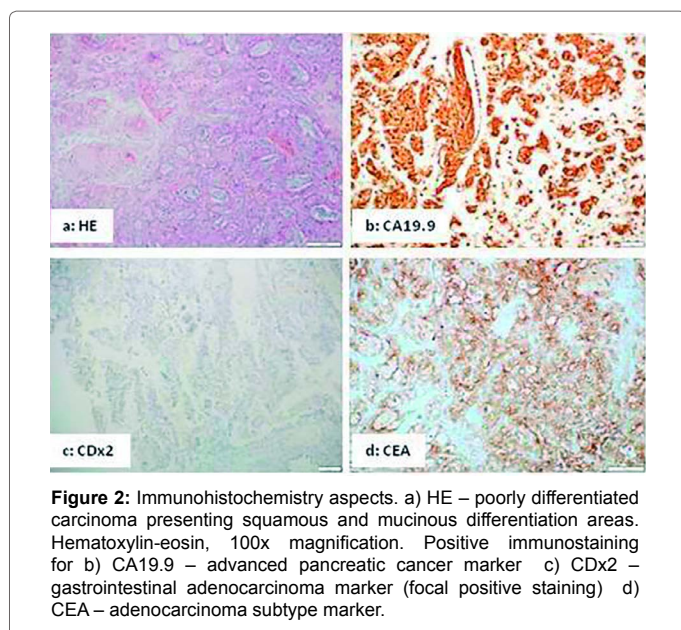
Pancreatic adenocarcinoma rarely metastasizes to the oral cavity. It may be assumed that the highly aggressive nature of this tumor does not allow for enough time for a metastasis to emerge in this region [2]. Although most patients are already under treatment when oral metastases are detected, these lesions signal the advanced evolution of

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and gastrointestinal, genital, and urinary tracts are formed through the mediation of the Baston's plexus [6]. This plexus includes an avascular vessel system linked with thoracic and deep pelvic veins that drain the lower end of the abdomen and the regions around breasts and prostate to the internal vertebral venous plexuses [12]. The underlying biological mechanism of metastatic propagation is complex, and starts with a series of coordinated molecular changes that allow cells to lose adherence, acquiring mobility. The tumor cells propagate across the lung venous system, lodging on the associated structures of the maxillofacial complex [8]. The tongue, the gingiva, and parts of the mandible are fed the same blood supply line, suggesting that specific biological factors may play a key role in establishing the nature and the site the metastatic tumor will emerge [12].

The diagnosis of a metastatic lesion in the oral region poses considerable challenge. The practitioner has to be aware of the risks of these lesions, while the pathologist is required to determine the original tumor site based on immunohistochemistry, which is the supplementary method used to diagnose tumors. These efforts help characterize the histogenesis of a tumor, improving the chances of a successful differential diagnosis. This method also may be required in determining the most appropriate therapy to tumors [2]. Such tumors bear consistent clinical relevance, since they may be the first sign of an undiagnosed malignant disease in a remote primary site. They also stand as the first evidence that the tumor is spreading from its main site [13].

Conclusion

Malignant metastases on the tongue are rare, mainly when the primary tumor is pancreatic adenocarcinoma. When diagnosed early, the primary tumor has to be investigated. The approach adopted to treat tongue metastasis is defined considering the primary tumor stage. Immunohistochemistry is essential to diagnose this type of metastasis at this point, since several are the nodular lesions, whether malignant or not, that may evolve on the tongue and therefore be used in the differential diagnosis.

Conflict of Interest

We declare no conflict of interest.

the disease, which in turn may indicate the need to change the treatment approach, affecting prognosis [1,8]. If the primary tumor is successfully treated, the metastatic lesion should be addressed invasively, with procedures that include surgical resection, radiotherapy, chemotherapy, or a combination thereof. Upon recurrence that is characterized by generalized metastases, the lesion in the oral cavity requires a more conservative treatment approach [10,11].

In this case report the patient's condition initially required a treatment for nephrolithiasis, and the tumor was diagnosed only when it was too late for a curative approach, when a palliative treatment was therefore offered. The oral metastasis was treated from a conservative perspective as a means to improve quality of life based on pain relief and prevention of hemorrhage, infections, and obstruction of the airways [9-11].

Distant metastasis of primary tumors in the respiratory system

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