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Case Report

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Colorectal Carcinoma with Metastasis to Oral Mucosa; Two Cases Report

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Abstract

Oral metastasis of tumours is known to cause 1% of all oral malignancies and is most often the result of a primary in lung, breast and kidney [1,2]. The location of the metastasis is usually the jaw bones as opposed to soft tissues. A metastasis from colorectal adenocarcinoma to the soft tissues is hence extremely infrequent. The gingivae (55%) followed by the tongue (30%) are the most common soft tissue sites affected by metastatic tumour in the mouth [3]. The diagnosis of such cases is dependent on adequate history taking and although has a poor prognosis but early detection and effective treatment are necessary to aid in treatment and follow up. Here we report two cases of colorectal adenocarcinoma that metastasized to the oral gingiva and were diagnosed by histology and supportive immunohistochemistry.

Keywords: Colorectal Adenocarcinoma, Oral Metastasis

Abbreviations

UL6: upper left 6 tooth
FOLFOX: FOL– Folinic acid (leucovorin) F – Fluorouracil (5-FU) OX – Oxaliplatin (Eloxatin)
MRI: magnetic resonance imaging
CK: cytokeratin
FOLFIRI: FOL – Folinic acid (leucovorin) F – Fluorouracil (5FU) IRI – Irinotecan (Campto)

Introduction

A mass or lump in the oral mucosa is usually suspected to be benign. If a lesion is found to be malignant it is routinely a primary tumour, in which case a squamous cell carcinoma is the most common culprit. An oral metastasis from tumours elsewhere in the body accounts for only 1% of all oral malignancies [1]. It is encountered mostly in primary tumours of lung, breast and kidney. Formulating a diagnosis of an oral metastasis is a challenging prospect and needs to be considered in the differential diagnosis of an oral inflammatory lesion [2]. Not only is metastasis to the oral region a rare occurrence but if present it is an indicator of a poor prognosis. The sites that are routinely affected by a metastatic tumour include gingivae (55%) followed by the tongue (30%) [3]. Here we report two cases of bowel adenocarcinoma which developed metastasis to the oral gingiva.

Cases

Case 1

A 69-year-old woman presented to the department of Maxillofacial Surgery with a complaint of pain in her upper buccal mucosa. On examination a mobile UL6 along with a firm nodule was noted. The buccal mucosa was observed to be erythematous and hyperplastic with ulcerations and induration. No other oral lesions were seen. The lady also had a history of bowel cancer for which she had undergone extensive treatment. Her past records showed a previous recto-sigmoid adenocarcinoma with lung metastasis (KRAS mutant BRAF WT) in 2013. She had received chemotherapy (FOLFOX, Bevacizumab) from February 2014 for 4 cycles and had showed excellent partial response. After 8 cycles of chemotherapy an anterior resection was performed. In February 2016 a metastasis of the tumour to the lung was diagnosed and treated via resection. She also underwent 10 sessions of radiotherapy. Currently she was undergoing chemotherapy on alternate weeks. She also had an additional history of pulmonary embolism and thrombosis in jugular vein for which she was receiving treatment.

An MRI head with contrast was performed which showed erosion of the buccal surface of the maxilla with enhancement of the soft tissue. This erosion appeared to extend through the teeth on to the lingual surface of the alveolar process and towards the floor of the left maxillary sinus. No other focal bony or soft tissue abnormalities were noted. A diagnosis of a primary head and neck tumour most likely a squamous cell carcinoma was proposed. As a form of treatment of the oral mass and to diagnose the malignancy, the mass was resected and the UL6 was removed.

On histology, an ulcerated polypoid tissue was seen that was infiltrated by moderately differentiated carcinoma. As the patient had a previous history of recto-sigmoid adenocarcinoma with known metastasis, the differential diagnosis of an oral metastasis was considered. This was verified by immunohistochemistry.

The tumour cells were found to be strongly positive for CK20 and negative for CK7, CK5/6 and P63. A comparison with the primary tumour could not be performed as the primary tumour was operated on at a different hospital and the slides could not be obtained. A confirmatory diagnosis favouring metastatic colonic adenocarcinoma was given.

Case 2

A 62-year-old woman presented to the department of Maxillofacial Surgery with complaints of lump in the left cheek associated with numbness of the lip, chin, teeth and gums on the left side. She also complained of pain from the left ear radiating down to the jaw. On examination, a firm lump was noted in the pre-auricular region and was queried as being of bony in origin. She gave a history of previous bowel cancer. Her past records showed two previous tumours, one in the ascending colon and the second one in the sigmoid colon which also had an associated perforation. She underwent subtotal colectomy in October 2014. In September 2015 she was diagnosed with liver metastasis and given 12 cycles of chemotherapy (FOLFIRI). She demonstrated a good response to the treatment. In February 2016 she went on to develop a portal vein embolism and was diagnosed with peritoneal metastasis of the tumour. She was also known to be suffering from Chronic Lymphocytic Leukaemia which was considered to be stable at the time of diagnosis.

MRI head was performed which showed a tumour or mass centred on the left ramus of mandible with features typical of metastasis. This mass measured roughly 3.5 cm. An intraoral biopsy of the lump in the left cheek was performed and sent for histology.

On histology, a fragment showing necrosis and a few atypical glands with mitoses was noted. The features were of an adenocarcinoma. Because the patient had a history of colon cancer with metastasis, the differential diagnosis of metastasis was considered. This was verified by immunohistochemistry.

The tumour cells showed minimal positivity for CK20 and were negative for CK7. A comparison with the primary tumour could not be performed as the primary tumour was operated on at a different hospital and the slides could not be obtained.

A diagnosis favouring metastatic colonic adenocarcinoma was made.

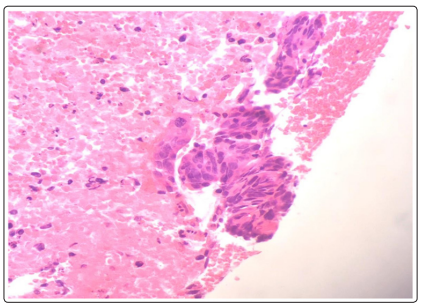

Figure 1: Histology showing metastatic oral adenocarcinoma stained with H&E @400X

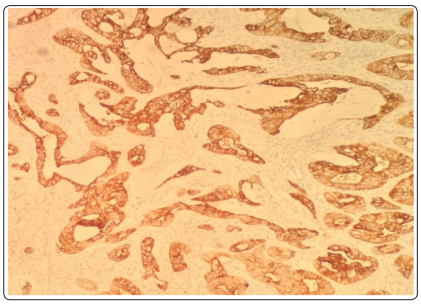

Figure 2: Section showing metastatic oral adenocarcinoma with positivity for CK20 @400X

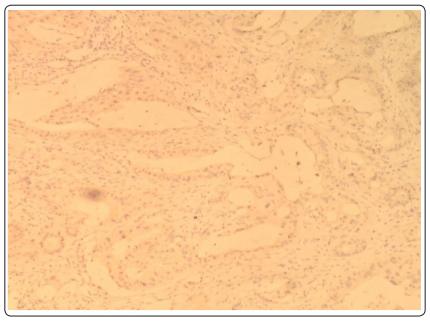

Figure 3: Section showing metastatic oral adenocarcinoma negative for CK7 @400X

Discussion

Carcinoma colon is one of the tumours that is prevalent worldwide. It is also known to possess a high metastatic potential mostly to sites such as the regional lymph nodes, liver, lungs, cutis, vagina, myocardium, breast, and prostate. In contrast to this cases of carcinoma colon metastasizing to the oral mucosa have been very uncommon. In a study by Hirshberg, et al. colorectal origin was found only in 34 cases out of 547 metastatic tumours to soft tissue of the oral mucosa (6%) [2]. Moreover, these cases were shown to involve mostly the gingiva and the tongue.

In our study the patient presented with pain and a loose tooth in the first case and lump with numbness and pain in the second case. The main symptom of oral metastatic tumours is pain which was evidenced in both of our cases [4]. Other presenting symptoms include swelling, local bleeding, neuroparalysis, and deranged dentition. The lesion tends to mimic other more prevalent lesions like periodontal abscess, pyogenic granuloma, haemangioma, giant cell granuloma and peripheral fibroma and needs to be differentiated from them [5,6].

The criteria by Clausen and Poulsen to aid in the diagnosis of metastatic oral tumours states that:

1. The metastatic tumour should be pathologically similar to the primary tumour
2. The oral tumour should be considered a metastasis clinically and pathologically

The oral tumour should be atypical compared with common oral primary tumours [7]. Both of our cases conformed to 2 out of 3 Clausen's criteria. The first criteria was unmet in both cases as the primary tumour could not be compared with the current tumour. This was due to the first surgery being performed at a different hospital and hence us being unable to trace the slides for a comparison.
The route of spread of bowel cancer is mainly haematogenous [5,8]. The spread to oral cavity can either be directly from the primary tumour or can originate from another previous site of metastasis. In the first case the lesion in the oral mucosa can be a metastasis from the already present multiple lung metastatic lesions as the primary bowel cancer had already been resected. The oral metastasis in the second case could be a further metastasis from the disseminated metastasis either from the liver or the peritoneum.

Another cause of the difficulties faced in formulating the diagnosis of oral lesions could be a difference in the histological findings of the metastatic tumour and the findings of the primary tumour [9].

In both of our cases as the previous reports were not available this could not be ascertained.

In such cases, the role of immunohistochemistry is highlighted in defining the site of primary lesion. As the history and features in both of our cases suggested a metastatic malignant adenocarcinoma, markers were chosen accordingly. The most common markers used in practise for carcinomas are the low-molecular-weight cytokeratin, CK7 and CK20 out of which CK20+/CK7– favours a tumour with a colorectal origin. In order to rule out a squamous tumour the most common markers performed are p63 and CK5/6. Both of our cases were positive for the markers favouring a tumour with a colorectal origin.

The presence of oral metastases along with the history of earlier known multiple metastatic lesions in both these cases indicates a widespread dissemination of the disease and hence a poor prognosis.

Conclusion

Our study emphasizes the importance of adequate history taking and examination along with the requirement of careful clinical and pathological evaluation in making a diagnosis in cases of oral lesions. All such cases should be promptly followed up especially if there are features that suggest or a known history of a previous malignancy. It is imperative to consider a metastatic tumour as one of the differentials in the diagnosis. This would be helpful in ascertaining an appropriate management and for an accurate assessment of the prognosis of the patient.

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