Case Report

Mandibular metastasis of cutaneous melanoma

Josi Amadeu^{*}, Cleto Mariosvaldo Piazzetta, Cassius Carvalho Torres-Pereira,
José Miguel Amenábar

Stomatology Department, Universidade Federal do Paraná, Curitiba, PR, Brazil

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ABSTRACT

Melanoma is a malignant neoplasm of melanocytes that can metastasize to every organ of the body, but metastasis to the oral cavity is uncommon. We describe a case of metastatic malignant melanoma to the mandible in a 33-years-old woman. The patient had a 2 cm × 4 cm firm, ulcerated nodule, distal to the second mandibular right molar. Incisional biopsy revealed epithelioid cells and immunohistochemistry was positive for HMB-45, S-100 protein and vimentin. The patient was referred to the local cancer hospital for treatment but died 3 months later. Metastatic malignant melanomas of the oral cavity are rare and unusual. Early diagnosis of the primary tumor is essential for successful treatment and to improvement of patient prognosis.

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1. Introduction

Cutaneous melanoma is one of the most aggressive and unpredictable forms of skin cancer with a potentially devastating prognosis.¹ The metastasis to the oral cavity is decidedly uncommon.² The prognosis of patients with distant metastases is very poor, with a median survival varying from 2 to 8 months according to the anatomical site of the metastases and the number of metastases.³ We report a case of metastatic malignant melanoma in the mandible and compare it with other similar reported cases.

2. Case report

A 33-year-old Caucasian woman was referred for examination of facial swelling, pain in the area of the right temporomandibular joint, headache and paresthesia of the right side of her lower lip. During clinical examination the lower right side of her face was slightly swollen. Intraorally, she had a 2 cm × 4 cm firm, ulcerated nodule, on the distal area of the second mandibular right molar (Fig. 1A and B). Her right submandibular lymph nodes were enlarged and tender. Panoramic X-ray showed a translucency with

irregular margins distal to the second mandibular right molar (Fig. 1C).

The patient also said that a malignant melanoma had been removed from the right upper back. The information obtained from the pathological report was: malignant melanoma with features of nodular type, invasive to a Clark level III, an approximate Breslow thickness of 3.84 mm and pT3b, Nx, Mx. She was on treatment with interferon- α , 10×10^6 UI/m², 3 times per week for 48 weeks.

An incisional biopsy was performed under local anesthesia. Microscopic examination of the specimen showed epithelioid cells (Fig. 2A). Immunohistochemistry for S-100, HMB-45, CK AE1/AE3, Actin 1 to 4 and vimentin was performed, and the tumor cells were positive for HMB-45, S-100 protein and vimentin (Fig. 2B and C). The diagnosis of metastatic melanoma was confirmed.

She was referred to the cancer hospital where she received ipilimumab (10 mg/kg) and palliative therapy to relieve symptoms and improve the quality of life. The patient died 5 months after the initial hospital admission.

3. Discussion

Metastatic melanoma to the maxillofacial region is rare and studies have revealed an incidence of mucosal metastases to the head and neck around 2%, mainly from cutaneous malignant melanoma.^{2,4}

Several cases of metastatic melanoma to the mandible can be found in the literature. Table 1 presents the characteristics of those cases. Clausen and Poulsen⁵ set forth the criteria for mandibular

^{*} Corresponding author at: Stomatology Department, Universidade Federal do Paraná, Av. Lothário Meissner 632, Jardim Botânico, Curitiba, Paraná CEP 80210-170, Brazil. Tel.: +55 41 3360 4024; fax: +55 41 3360 4053.

E-mail address: jamenaba@ufpr.br (J. Amadeu).

Fig. 1. (A) Photograph showing the lesion distal to the second mandibular right molar. (B) Closer photograph of the lesion showing an ulcerated nodule. (C) Panoramic radiograph showing a radiolucid lesion with irregular margins distal to the second mandibular right molar.

Fig. 2. (A) Microscopic examination of the specimen showing epithelioid cells. (B) Histopathology with positive stain for HMB-45 at 100×. (C) Histopathology with positive stain for S-100 at 100×.

Table 1

Characteristics of the cases of metastatic malignant melanoma to the mandible.

Case	Author	Year	Sex	Age (years)	Primary location	Mandibular metastasis site
1	De Chonolky	1941	–	–	Foot	Angle
2	Bluestone	1953	M	51	Thorax	Alveolar ridge, distal to left premolar
3	Aisenberg and Inman	1956	F	62	Axilla	Distal to right premolar and ramus
4	Heslop	1964	F	48	Leg	Generalized in the mandible
5	McDaniel et al.	1971	–	–	–	Mandible
6	Hurwitz	1971	F	53	Skin	Left molar-ramus
7	Samit et al.	1978	M	28	Thorax	Left molar and angle
8	Bucin et al.	1982	F	61	–	Left molar-ramus
9	Myall et al.	1983	F	30	Chest	Right molar
10	Vaillant et al.	1990	F	48	Nape of the neck	Ramus
11	Sánchez et al.	1990	F	48	Back	Ramus and angle
12	Auriol et al.	1991	M	31	Temple	Symphysis
13	Patton et al.	1994	F	16	Right upper chest	Left retromolar alveolar ridge
14	Patton et al.	1994	M	38	Left ring finger	Right mandible
15	Patton et al.	1994	M	58	Left calf	Left mandible
16	Santamaría et al.	1997	M	55	Unknown	Right mandible-angle and ramus
17	Perez et al.	2005	M	64	Heel	Right canine to second premolar
18	Rivera et al.	2010	M	56	Left upper back	Anterior mandible
19	Kämmerer et al.	2011	M	68	Left scapula	Left mandible
20	Vierne et al.	2014	F	55	Skin	Left mandible
21	Present study	2015	F	33	Right upper back	Distal to the second right molar

tumors to be considered metastatic. Their criteria require the lesion in question to be histopathologically similar to the primary tumor and there must be a clear zone of uninvolved normal tissue between them and our case meet those criteria.

Cutaneous malignant melanoma most frequently occurs in Caucasian women aged 30–50 years¹; in the present case, the patient was 33-years-old. Oral manifestations of cutaneous melanoma are signs of a disseminated disease during the advanced stages. The primary symptoms can be vague and nonspecific, such as pain, inflammation, paresthesia, and loosening of teeth. The patient's complaint about paresthesia is in accordance with some cases in the literature.^{6–9} O'Grady¹⁰ stated that unexplained mental paresthesia can be related to metastatic malignant disease. In the present case the X-ray showed a translucency area very close to the mandibular canal and this could explain the patient's complaint.

Cutaneous malignant melanomas usually metastasize to the regional lymph nodes first. On the other hand, sentinel node biopsy provides accurate staging information for melanoma patients and it has become clear that a sentinel node free from metastases implies a regional lymph node basin free from melanoma.¹¹ In our case the sentinel node biopsy showed micrometastases and the patient was treated with interferon- α 3 times per week.

Histopathological examination of a suspected melanoma should include immunohistochemical techniques.¹² Other diagnoses, such as carcinomas, can be excluded by the absence of reaction to certain specific antigens and the diagnosis of melanoma can be supported by the positivity of two reactions: HMB45 and S-100 protein, the former being the more specific to melanoma.¹³ Melanomas, unlike epithelial lesions, are also positive for vimentin.¹²

Early diagnosis is critical for improving survival of patients with melanoma¹ because it is responsible for 74.7% of skin cancer-related deaths.¹⁴ It is also very important to determinate whether an oral melanoma is a primary or metastatic lesion. The most relevant features in defining a primary lesion from a metastatic lesion are site of involvement, presence or absence of pigment, overlying mucosal ulceration, extension along salivary gland ducts, and vascular and perineural invasion.²

4. Conclusion

As is evident in the case presented, metastatic malignant melanoma to the mandible is a rare and unusual tumor that in most cases results from cutaneous primary tumor. Early diagnosis of the primary tumor is essential for successful treatment and to improvement of patient prognosis.

Conflicts of interest

The authors have none to declare.

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