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Case Report
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Mandibular metastases as first clinical sign of an occult male breast cancer

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Abstract. A 73-year-old man presented with a painful swelling of the left temporomandibular joint with no other symptoms. Panoramic radiography showed an osteolytic lesion in the left mandibular body, while magnetic resonance imaging provided the most accurate view of an osteolytic lesion in the left condyle. Skeletal scintigraphy showed increased uptake in the mandibular anatomical area. A diagnosis of metastatic breast adenocarcinoma was made from mandibular biopsies which proved to be ductal carcinoma, with no evidence of any other metastases. Clinicopathologic features of this case are reviewed.

Keywords: mandibular metastasis; male breast cancer; occult primary tumour..

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Male breast cancer is uncommon. Presentation is usually a lump or nipple inversion, but is often late, with more than 40% of patients having stage III or IV disease by the time of diagnosis, markedly decreasing the survival rate. The diagnosis is easily made by breast biopsy. In 2009, there were an estimated 1910 new cases and 440 deaths related to male breast cancer, accounting for 0.25% and 0.15%, respectively, of all new cases of cancer and cancer deaths for males in the USA. Historical cohorts demonstrate that the peak incidence of male breast cancer occurs at approximately 71 years of age.[1–5]

The purpose of this study is to evaluate the clinical and pathological features of an occult male breast cancer with mandibular metastasis in a 73-year-old man.

Case report

A 73-year-old man was referred for the evaluation of a localized swelling and increased pain in the left preauricular region, initially diagnosed as TMJ dysfunction syndrome. The patient's medical history included diabetes and hypertension, and there was no history of tobacco or alcohol use. There was history of cancer in his family (lung cancer in his father and breast cancer in his mother). The patient reported that the left mandibular first molar had been extracted 2 years earlier, but the area had been slow to heal.

On examination, no extraoral abnormality was visible and there was no limitation of mandibular movements. Intraorally, very slight elevation of the crest of the ridge was observed just posterior to tooth No. 35, but the mucosa of the edentulous space appeared normal in colour and there was no significant lateral expansion of the alveolus in this area. No local tenderness or discharge was noted, and there was no evidence of palpable cervical lymphadenopathy. A panoramic radiograph revealed a poorly defined radiolucent area underlying and posterior to teeth No. 33, 34 and 35, with basal mandibular erosion (Fig. 1A). Magnetic resonance imaging (MRI) provided the most accurate view of an osteolytic lesion in the left condyle (Fig. 1B). Skeletal scintigraphy showed increased uptake in the mandibular area (Fig. 2). Under local anaesthesia, a double mandibular biopsy (body of mandible and left condyle) was performed. Light microscopy examination of the biopsy revealed osseous trabecular

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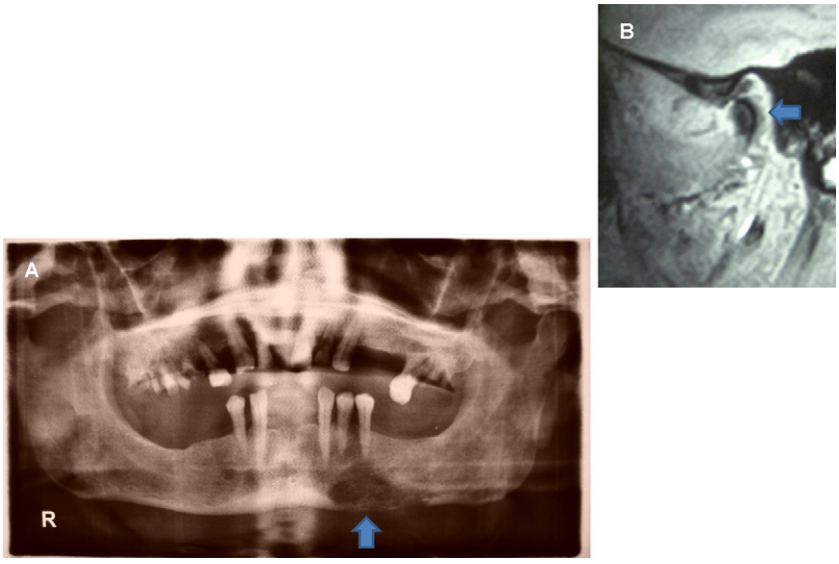

Fig. 1. (A) Panoramic radiograph showing a radiolucent area underlying and posterior to teeth No. 33, 34 and 35, with basal mandibular erosion. (B) Sagittal MRI demonstrating the osteolytic lesion in the left mandibular condyle. There was no extraosseous infiltration.

structures with nests of ductal carcinoma surrounded by connective tissue tumour. A diagnosis of metastatic breast adenocarcinoma was made from these two mandibular biopsies (Fig. 3A and B). A complete physical examination revealed an inverted left nipple with a partially circumscribed retroareolar mass (Fig. 4), to which the patient had not paid attention. Fine-needle aspiration of the lesion confirmed the existence of breast cancer as the primary tumour.

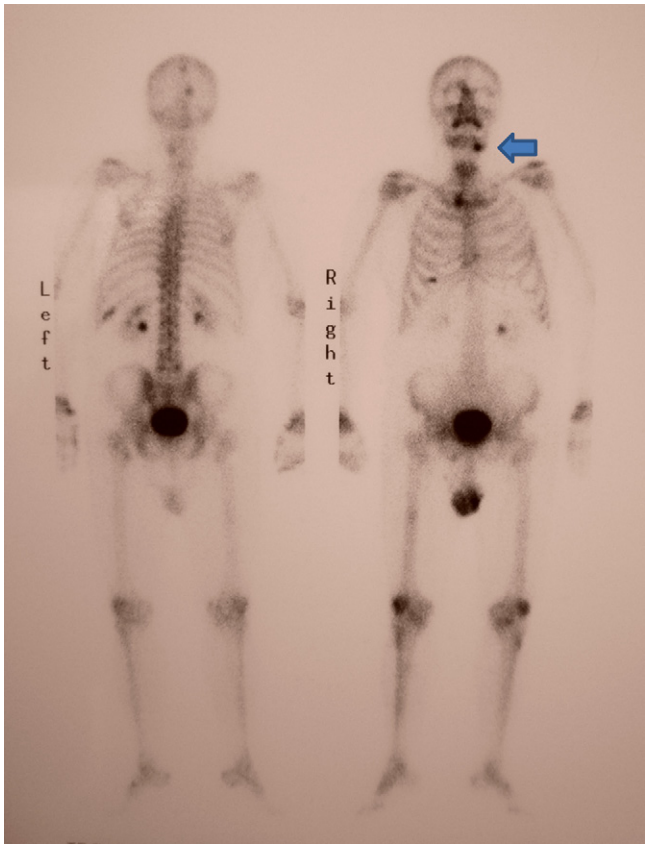

Fig. 2. Skeletal scintigraphy showed increased uptake in the mandibular area.

Surgery of the primary tumour was performed under general anaesthesia. It was decided to perform a left mastectomy with axillary dissection, with the tumour identified as an infiltrating ductal carcinoma (Fig. 5). The histological diagnosis was pT4b, pN3, cM1 (Stage IV), G3 (3 + 3 + 2), RH (+), Her-2 (−). Given the evolution of the process, the patient began hormonal therapy (tamoxifen plus goserelin) and chemotherapy with cyclophosphamide, epirubicin and fluorouracil (CEF scheme) 600/90/600 mg/m^2 × 4 cycles, followed by weekly paclitaxel 100 mg/m^2 × 8, and radiotherapy to the mandibular and axillary areas. The clinical condition of the patient was not favourable for segmental mandibulectomy and reconstruction. The patient remained disease-free 3 years later.

Discussion

Less than 1% of all malignant tumours metastasize to the maxillofacial area. Such metastases are mostly located in the mandible, where the majority occur in the molar region. According to the literature, metastatic tumours in the oral region mainly originate from the breast, followed by the lung, kidney, thyroid gland, intestine, prostate gland, stomach, testis and bladder. Recent improvements in the diagnosis and treatment of malignant tumours have increased the average patient survival time. Early detection of metastasis is important especially in oral metastasis where the prognosis is usually poor; most patients die within 1 year of diagnosis of oral metastasis, while the 4-year survival rate is estimated to be 10%.[1,6,7]

The initial differential diagnoses included chronic osteomyelitis, residual cyst, and metastatic carcinoma. The clinical and radiographic findings warranted consideration of multiple myeloma, histiocytosis, odontogenic tumour and central epidermoid or mucoepidermoid carcinoma.

Initially, the patient's dental history was suggestive of an inflammatory process such as osteomyelitis, until the various diagnostic studies identified the existence of mandibular metastases. Involvement of the mandibular condyle was not detected using panoramic radiography, but osteolytic lesions were observed on MRI, which is testimony to the high sensitivity and specificity of this technique in the study of temporomandibular pathologies. As a result of the imaging findings, attention was directed towards a possible mandibular metastasis, which was confirmed by later studies. The patient had no personal