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## Oral Manifestations of Multiple Myeloma Case Report

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### Abstract

Sudanese female 68 years old with a history of a back cancer of unknown origin. She complained of painful swelling in the posterior border of the mandible, confirmed diagnosis by incisional biopsy was multiple myeloma. After chemotherapy impressive improvement was observed. The present case was diagnosed with multiple myeloma based on the oral findings.

**Keywords:** Multiple myeloma; Osteolytic punch-out lesions; Chemotherapy; Bisphosphonates

### Introduction

Multiple myeloma (MM) is a relatively rare malignant hematological disease, characterized by proliferation of a single clone of plasma cells in the bone marrow. Abnormal plasma cells produce numerous non function homogenous immunoglobulin, which is called monoclonal protein (M protein) or paraprotein. The M protein is composed of either heavy chains plus light chains [IgG (52%), IgA (21%), IgD (2%), IgM (0.5%)], or light chains alone [kappa or lambda (16%)] [1].

Multiple myeloma is defined by  $\geq 10\%$  of plasma cell infiltration in the bone marrow,  $\geq 30$  g/L of monoclonal protein and presence of hypercalcaemia, renal insufficiency, anemia, and bone lytic lesions (identified by the acronym of CRAB symptoms) [2,3]. Up to 90% patients with Multiple myeloma complain of symptoms due to bone disease, defined as multiple destructive lytic lesions of the skeleton, including severe demineralization and osteoporosis through pathological fractures [4].

Affected areas are the skeleton segments at high bone marrow content; skull, spine, sternum, vertebrae, pelvis, and hip. In 30% of the cases the jaw bone is the site of multiple myeloma [5,6]. Commonly the oral lesions are rarely the first sign of the disease [7-10]. Oral manifestations are present in 30% of the cases and more common in the posterior part of the mandible [11].

Its occurrence in the jaws is common; however, oral lesions rarely appear as the primary manifestation of the disease. Pain may be the first symptom other presenting symptoms in the

oral and maxillofacial region include gingival bleeding, swelling, parathesia, and dental mobility or migration [12].

### Case Scenario

A 68-year-old Sudanese woman was referred to the Khartoum Teaching Dental Hospital complaining from swelling and pain on the left side of the lower face. The symptoms were first noted by the patient two months ago and she had been seen by private dentist and the primary diagnose was irreversible pulpitis in the left lower second molar which was extracted and an antibiotic prescription was given, There was no response and the symptom was not improved.

The past medical history was back cancer with bony metastasis and no evidence of the primary lesion.

Extra-oral examination revealed swelling on the mandibular angle left side without local hotness or fever and the skin over the swelling appeared normal without erythema (**Figure 1**).



**Figure 1** Shows swelling in the left side of the cheek and mandible without local hotness.

Intra-oral examination shows disclosed soft tissue mass located in the left retro molar pad, rubbery in consistency with a smooth texture no parathesia in the lower lip. The covering mucosa was intact, normal color and without blood or pus discharge (**Figure 2**).

Orthopantogram view showed extensive osteolytic lesion from the distal root of the lower first molar extending to the

ramus, ill-defined margins in left coronoid and neck of the condyle and punched out lesions in the right coronoid process and right mandibular angle (**Figure 3**).

Skull lateral view as well detected multiple punched out osteolytic lesions over frontal bone and parietal bone (**Figure 4**).



**Figure 2** Soft tissue mass over the left retro molar area, without tenderness or pus discharge, rubbery in consistency.



**Figure 3** Digital OPG shows destructive osteolytic lesion destruction from 36 distal root extending from the left body of the mandible to the ascending ramus, ill-defined border of the left coronoid and neck of the condyle and multiple punched out lesions over the right angle and coronoid process.



**Figure 4** Lateral skull view showed multiple punched out lesions over frontal bone and parietal bone and mandible.

CT scan of the head, chest, pelvis x-rays, (**Figure 5**) and upper abdomen, bone scintigraphy and laboratory routine

examinations were carried out. All CT scans revealed osteolytic lesions (**Figure 6**).

An incisional biopsy was performed on the second visit and the Histopathological report revealed multiple myeloma.

Laboratory investigations were done, serum proteins electrophoresis showed increased gamma globulin bands (monoclonal bands) and normal other bands.

The urine was negative for Bence-Jones protein test. Besides, bone marrow biopsy showed abundant plasma cells.

The above described results were compatible with the diagnosis of multiple myeloma. The patient was submitted to palliative chemotherapy Gemcitabine combined with 5-flouracil, Dexamethasone and Ondansteron and Zometa. The patient still keeps regular clinical follow up.



**Figure 5** Pelvis x-ray shows osteolytic lesions in iliac bones.



**Figure 6** CT chest, abdomen and pelvis show multiple expansile osteolytic bony lesions at the posterior ribs and left iliac bone.

## Discussion

Multiple myeloma is a plasma cell neoplasm seen in patients above 40 years of age. Males are more affected than females [13]. It was count 1% of all malignancies and 10% to 15% of hematologic malignancies [14].

Incidence of primary manifestations of multiple myeloma in the jaws varies from 8% to 15% [15]. It mainly affects the mandibular molars region, ramus and the angle of mandible, because these areas exhibit intense hematopoietic activity. Maxillary lesions are more frequent in the posterior regions [16]. There is increased risk of pathologic fracture, renal insufficiency, anemia, infection and bleeding following the accumulation of malignant plasma cells in the bone marrow [17]. These cells produce monoclonal immunoglobulin fragments, which present as a homogeneous spike-like peak in

the gamma globulin zone on serum protein electrophoresis [18]. osteoclast-activating factor and osteoblast inhibitory factors leading to lytic bone lesions, osteoporosis and pain [19]. About 15% of myelomas secrete only light chains, detected in urine as Bence-Jones proteins [17]. Multiple myeloma is an incurable disease; the treatment only can prolong life span and symptom relief. Treatment protocols include Administration of Dexamethasone or Prednisone, either alone or in combination with Thalidomide, remains a corner stone of multiple myeloma therapy. This is combined with autologous stem cell transplantation as part of the standard initial treatment. Single infusion of Melphalan at a dose of 200 mg/m<sup>2</sup> of body surface area has also emerged as a common regimen for multiple myeloma treatment. Factors such as the stage of the MM, the advanced age of the patient (>65 years old), poor activity performance, poor response to therapy may determine a worse prognosis.

In the present case, patient was 68 years old female, three diagnostic criteria of MM were all confirmed by clinical, radiographic and laboratory examination: end organ damage (bone lesions), presence of more than 30% plasma cells in bone marrow biopsy, and monoclonal protein in serum. Oral manifestations showed swelling in the left side of the face close to mandibular angle as a result of bone damage over this area. The authors believe that it was a case of primary mandibular lesion. After the treatment the clinical signs of swelling in the left face, pain and bone destruction in left mandible were all improved.

Knowledge of the maxillofacial manifestations of multiple myeloma on the part of the dentist is important for early diagnosis of the disease, especially when it occurs in its primary form in the jaw bones.

## Conclusion

Multiple myeloma can present with varied clinical features, which in isolation may be difficult to diagnose as our patient mistakenly diagnosed as an irreversible pulpitis. Jaw lesions occur in about 30% of these cases. Involvement of jaw bones, recognition of oral lesions and evaluation of the systemic status, which can be performed by a dentist, aids in early diagnosis and prompt management. The present case was diagnosed with multiple myeloma based on the oral findings.

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