

## Solitary Plasmacytoma of Mandible: A rare case report

Singh A<sup>1</sup>, Singh V<sup>2</sup>, Sharma N<sup>3</sup>

<sup>1</sup>Dr. Anurag Singh  
Consultant  
Sir Ganga Ram Hospital  
Delhi, India

<sup>2</sup>Dr. Vishal Singh  
Professor, Oral & Maxillofacial Surgery  
Himachal Institute of Dental Sciences  
Paonta Sahib, Himachal Pradesh, India

<sup>3</sup>Dr. Navneet Sharma  
Assistant Professor  
Oral Medicine, Diagnosis & Radiology  
Himachal Dental College  
Sundernagar, Himachal Pradesh, India

Received: 15-11-2011

Revised: 23-11-2011

Accepted: 24-12-2011

Correspondence to:

Dr. Anurag Singh  
dranurag@gmail.com

### ABSTRACT

Solitary plasmacytoma is a rare condition affecting the jaws which manifests itself as a single osteolytic lesion without plasmacytosis of bone marrow and constitutes approximately 3% of all plasma containing tumors. It is different from multiple myeloma in terms of its clinical behaviour and prognosis. The most common clinical presentation is local bone pain and lesion on alveolar ridge and affects mandible frequently than maxilla. We report a rare case of solitary plasmacytoma of mandible, diagnosed on the basis of distinct radiological and histopathological findings, that has been treated by subtotal hemimandibulectomy. The review of literature concerning clinical, histological and radiological features, as well as the proper management concerning this tumour is included.

**Key Words:** Solitary plasmacytoma, plasma tumor, hemimandibulectomy

### Introduction

Solitary bone plasmacytoma is an immunoproliferative monoclonal disease, accounting for 3% of plasma cell neoplasms. [1] Plasmacytoma can present clinically as multiple myeloma, solitary bone neoplasm and extraosseous plasmacytoma. Localized plasmacytoma are less common than multiple myeloma and can occur as an extra osseous form and solitary bone neoplasm. [1, 2, 3]

Solitary plasmacytoma may be an isolated disease or the first manifestation of a subsequent multiple myeloma. The isolated form of plasmacytoma seems to have a better prognosis, while in cases of subsequent multiple myeloma the prognosis may be different. [4]

Jaw is an infrequent localization of solitary plasmacytoma of head and neck, and its symptoms may be underestimated because they may be considered nonspecific. [4, 5]

We report a rare case of solitary plasmacytoma extending into the mandibular angle and ramus region diagnosed on the basis of histopathology and was treated by hemimandibulectomy followed by reconstruction of the defect with bone plating.

### Case report

A 38 year old female patient reported with a complaint of swelling in the left jaw region since one year. The swelling developed a year ago and was static in size but a sudden increase in the size of swelling was noticed since last two months. She also noted that her chin had deviated to the left side. (Fig. 1) The patient's medical history was non-contributory and physical examination revealed no other abnormality.



Fig. 1 Clinical photograph with deviation of mandible towards left side

Extra oral examination revealed presence of swelling measuring 2.5cm x2.0cmx2.0cm at the left angle of the mandible. The swelling was bony hard in consistency, non - tender and obliterated the buccal sulcus and was not attached to the overlying skin. The left submandibular lymphnodes were palpable measuring

approximately 1 to 1.5 cm in diameter, firm in consistency, non tender and mobile. Intraoral examination revealed periodontitis and partial edentulousness in left mandibular posterior region.

Orthopantomograph revealed extensive solitary, ovoid, unilocular radiolucent lesion extending along the entire angle, ramus region without sclerotic border. The lesion extending along the left posterior border of the body of mandible, with marked expansion of buccal cortex. (Fig. 2)



Fig. 2 OPG revealed an extensive solitary radiolucent lesion involving the left mandibular ramus, with expansion of buccal cortex.

Haematological investigation revealed markedly increased leukocytic count and subnormal haemoglobin levels. The serum calcium levels were slightly deranged but alkaline phosphatase levels were within normal limits. The patient was tested for Hepatitis B and HIV I and II which were negative.

Biopsy was done and histopathological section showed dense cellular infiltrate, with sheets of malignant plasma cells, which are seen as diffuse, monotonous and variably differentiated. (Fig. 3)

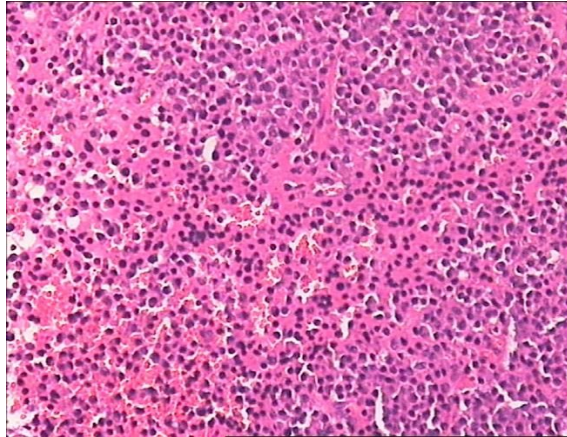


Fig. 3 Pictomicrograph showing dense cellular infiltrate with typical plasmacytoid features

The malignant cells were large, round to oval with vesicular nuclei with prominent nucleoli. (Fig. 4)

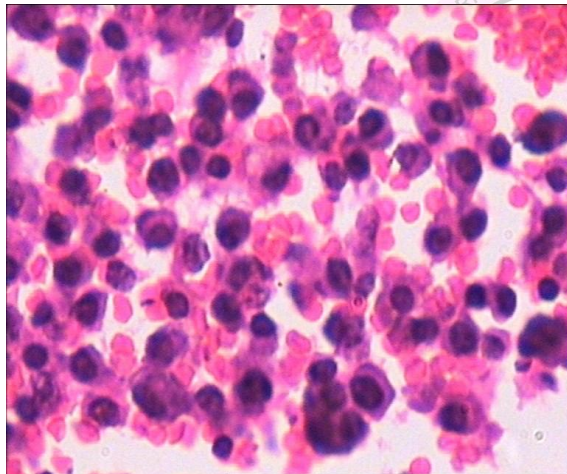


Fig. 4 Pictomicrograph showing large, round to oval malignant cells with prominent nuclei

Based on the clinical presentation, radiological findings, and histopathology the diagnosis of solitary plasmacytoma was suggested. The patient's plasmacytoma was localised to left mandibular ramus, although perineural and intraneural invasion was histopathologically encountered. Under general anesthesia, hemimandibulectomy with preservation of condyle was done for the patient. (Fig. 5, 6)



Fig. 5 Intraoperative photograph



Fig. 6 Resected specimen following hemimandibulectomy showing expanding fleshy mass

The defect was reconstructed with bone plating. (Fig. 7)

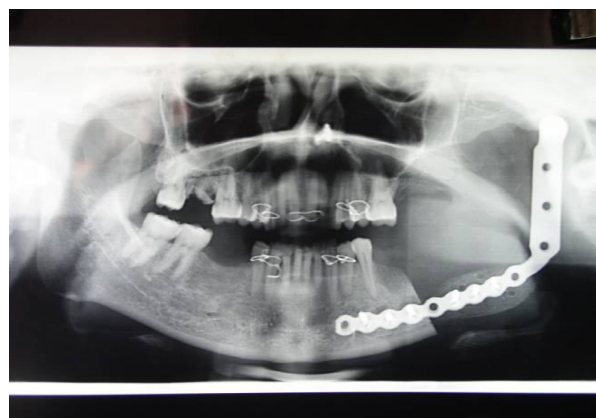


Fig. 7 Post operative OPG showing reconstructed left mandible with bone



The postoperative course was uneventful and on follow-up no recurrence was observed as evidenced by physical and radiographic examination.



Fig.8 Clinical photograph after Surgery

## Discussion

Plasma cell tumors are B-cell lymphoid neoplasms classified as multiple myeloma, solitary bone plasmacytoma and extramedullary plasmacytoma. [3, 6, 7, 8] The most common sites of isolated plasmacytoma are long bones and vertebrae. It rarely involves jaws and when it is seen, only 4.4% of this occur in the mandible, most commonly in the bone marrow-rich areas of the body, angle and ramus of mandible. [5]

Plasma cell neoplasms affect elderly people aged 50–80 years. Clinical signs and symptoms may be really poor; therefore it may be very difficult to perform an early diagnosis of solitary plasmacytoma of jaw. Specific symptoms to suspect a diagnosis of solitary plasmacytoma localized in a unique bone segment are: pain, impairment of bone function and movements, presence of bone swelling with or without local erosion, involvement of local mucosa or

tissues. [4, 8] In our case bony hard swelling without any associated signs of jaw pain and dysesthesia was noted.

Plasma cells produce osteoclast-activating factors, which stimulate the growth of osteoclasts and therefore bone resorption. Plasmacytomas usually appear on radiographic images as multilocular radiolucencies without any reactive bone formation. [5, 9] In our patient, expansile unilocular, infiltrative, ovoid radiolucency involving entire left mandibular ramus with expansion of buccal cortex was present. Histopathologically it presents as numerous plasma cells with abundant cytoplasm and eccentrically located nuclei. [1, 7] In present case, dense cellular infiltrate with typical plasmacytoid features was seen.

Laboratory signs of solitary plasmacytoma are usually related to the immunoglobulin production, if secretory component is present (i.e. monoclonal gammopathy in serum electrophoresis, light chains production detectable in serum and/or urine, cryoglobulinaemia), blood calcium alterations, kidney dysfunction and serum  $\beta$ -2-microglobulin levels. [4, 10]

Diagnostic criteria of solitary plasmacytoma is presence of an isolated area of bone destruction due to clonal plasma cells, bone marrow plasma cell infiltration not exceeding 5% of all nucleated cells, absence of further osteolytic bone lesions or other tissue involvement, absence of anaemia, hypercalcemia, or renal impairment attributable to myeloma, low concentrations of serum or urine monoclonal protein. [4]

Modalities of treatment are radiation, chemotherapy, surgery, while combined radiation and surgical approach gave good outcomes with a low rate of local recurrence. The course of solitary bone plasmacytoma is relatively benign, early

80% of patients do not show recurrence after five years while 20% may progress to multiple myeloma.<sup>[1, 4, 5]</sup>

Solitary bone plasmacytoma manifests itself as a single osteolytic lesion with better prognosis than multiple myeloma. Its clinical and radiographic findings may not be pathognomonic but always be considered in differential diagnosis of oral and maxillofacial lesions. Knowledge of the maxillofacial manifestations of solitary bone plasmacytoma on the part of the dental surgeon is important for early diagnosis of the disease so that optimal treatment can be rendered.

## References

1. Rao K, Priya NS, Umadevi HS, Smitha T, Reshma V, Grace SA. Solitary Bone Plasmacytoma of the maxilla: A rare case report. *Int. Journal of Clinical Dental Science* 2011; 2:37-40.
2. Pisano JJ, Coupland R, Cen SY, Miller AS. Plasmacytoma of oral cavity and jaws: a clinical pathological study of 13 cases. *Oral surg Oral med Oral pathol Oral radiol Endod* 1997; 83:265-71.
3. Segmundo AVL, Falcao MFL, Filho RCL, Soares MS, Lopez JL, Kustner EC. Multiple Myeloma with primary manifestation in the mandible: A case report. *Med Oral Patol Oral Cir Bucal* 2008; 13:232-4.
4. Marotta S, Di Micco P. Solitary plasmacytoma of the jaw. *Journal of Blood Medicine* 2010; 1:33-36.
5. Canger EM, Celenk P. Mandibular involvement of solitary plasmacytoma: a case report. *Med Oral Patol Oral Cir Bucal* 2007; 12:7-9.
6. Mozzaffari E, Mupparapu M, Otis L. Undiagnosed multiple myeloma causing extensive dental bleeding: Report of a case and review. *Oral surg Oral med Oral pathol Oral radiol Endod* 2002; 94:448-53.
7. Dhaif G, Sleeman D, Barry H, Brady F, Toner M. Solitary plasmacytoma of the jaws: Report of two cases. *The Saudi Dental Journal* 1996; 8:92-5.
8. Moshref M, Abbass Fm, Sargolzaeis S, Nafarzadeh S. Extramedullary Plasmacytoma of Gingiva. *Arch Iranian Med* 2007; 10: 91-3.
9. Poggio CE. Plasmacytoma of the mandible associated with a dental implant failure: a clinical report. *Clin. Oral Impl. Res.* 2007.
10. Di Micco P, Di Micco B. Up-date on solitary plasmacytoma and its main differences with multiple myeloma. *Exp Oncol* 2005; 27:7-12.

Cite this article as: Singh A, Singh V, Sharma N. Solitary Plasmacytoma of Mandible: A rare case report. *Int J Med and Dent Sci* 2012; 1:28-32.

Source of Support: Nil  
Conflict of Interest: No