

Secondary Metastasis to the Mandible From Breast Carcinoma –A Rare Case Report

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ABSTRACT

Regardless of the rare occurrence of metastatic lesions to the jaw, it should be taken into consideration in the individuals with a history of malignancy. Early detection requires accurate examination, and microscopic evaluation is essential. In this paper we report a case of breast carcinoma to the mandible as female breast cancer is the most frequent metastatic lesion to the mandible and its metastasis is well documented. The patient's medical history revealed that she had undergone mastectomy on the left breast three years ago. As this condition is infrequently described, documentation of new cases will augment the existing knowledge.

CASE REPORT

A 45-year-old female patient had reported to the Department of Oral Medicine and Radiology with a complaint of pain and swelling in the lower right posterior region of jaw since 3 months. Pain was of intermittent, throbbing type and the swelling was gradually increasing in size. Patient had undergone mastectomy three years back for breast malignancy (left side).

On clinical examination, diffuse extra-oral swelling was present in right lower third of face involving body of mandible, measuring about 3x4 cm in size, extending from parasymphiseal region to angle of mandible, inferiorly till lower border of mandible [Table/Fig-1].

Skin overlying swelling was normal. On palpation, borders of swelling were diffuse, firm to hard in consistency, mild tenderness on palpation with local rise in temperature; paresthesia was also present in the same region. Intraorally expansion of buccal cortex was noticeable and Grade 1 mobility w.r.t 47,48 and vestibular tenderness with 48 region [Table/Fig-2].

Clinical diagnosis of ameloblastoma was given. Differential diagnosis mainly fibro-osseous lesions were included. Patient was subjected to the radiographic, laboratory and histopathology investigations. Occlusal radiograph revealed expansion of buccal cortex [Table/Fig-3].

OPG image revealed thinning and duplication of mandibular cortex. There was presence of multiple irregular radiopaque foci in relation to mandibular molars. There was also altered trabecular pattern observed [Table/Fig-4]. Lateral skull radiograph showed multiple discrete radiolucent osteolytic lesions over the skull vault measuring around 0.5 to 1 cm, well delineated with no sclerotic borders [Table/

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Fig-5]. Pelvis radiograph showed mixed osteolytic and sclerotic lesions over the ileac crest on both sides and symphyseal region.

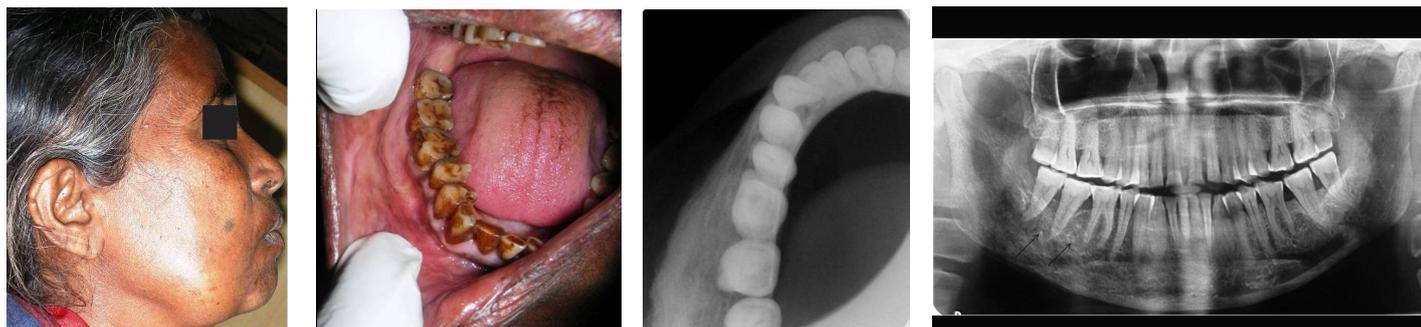
Microphotograph showed FNAC smear stained with H and E staining showing cluster of malignant cells (duct carcinoma) from mandible.

Histopathological sections of breast revealed fibro fatty tissue matrix supporting islands of malignant cells [Table/Fig-6a]. Based on histopathological sections, diagnosis of carcinoma of breast was provided. In context, mandible also showed malignant cells infiltrating into fibrous stroma [Table/Fig-6b]. Based on histopathology report final diagnosis of metastatic lesion to the mandible from breast carcinoma was emphasized.

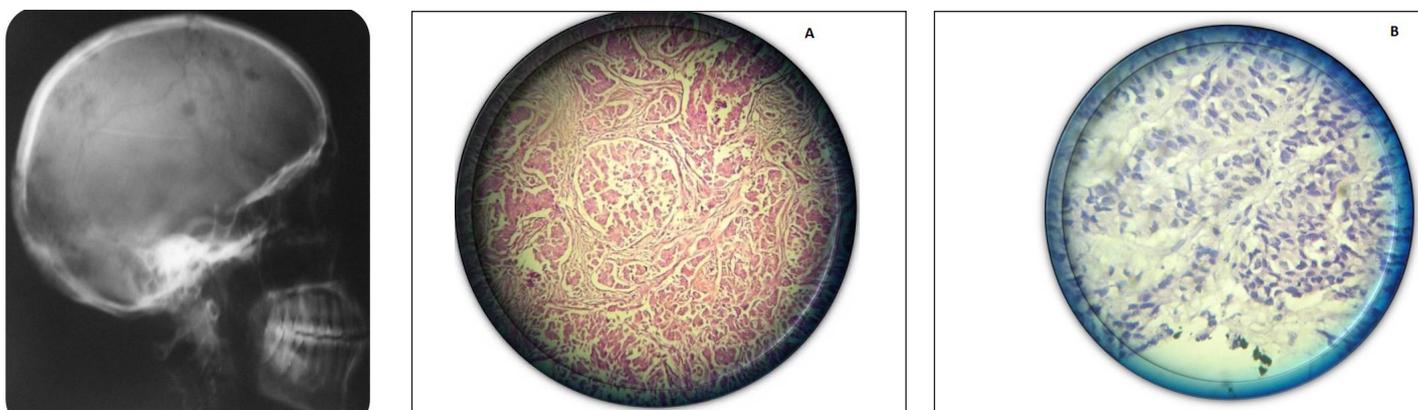
Patient was advised CT scan and Scintigraphy followed by wide surgical excision. Unfortunately the patient succumbed to the death three months after diagnosis.

DISCUSSION

Metastatic lesions to the jaws are rare, accounting about 1% of newly detected oral cancers [1]. The oral sites to which metastasis most commonly occur are, in descending order, the jaws, the gingival (mandible/maxilla), and the tongue, however, involvement of both the mandible and the maxilla is rare [2,3]. Lower jaw is commonly affected compared to upper jaw with tendency for the areas posterior to canines including ramus and body of mandible [1,4,5]. These areas are more prone to the deposition of cancerous cells due to presence of haematopoietic bone marrow, subdivision of local blood vessels and reduced velocity of blood flow [5]. Above findings are in favour of the presented case.



[Table/Fig-1]: Facial profile showing swelling in lower third of face **[Table/Fig-2]:** Intra oral image showing expansion of buccal cortex **[Table/Fig-3]:** Occlusal radiograph revealing expansion of buccal cortex **[Table/Fig-4]:** OPG image showing thinning and duplication of mandibular cortex with radiopaque foci in relation to mandibular molars (Black arrows)



[Table/Fig-5]: Skull radiograph reveals multiple discrete radiolucent osteolytic lesions on the skull vault **[Table/Fig-6a]:** Photomicrograph (breast) revealing fibro fatty tissue matrix supporting islands of malignant cells **[Table/Fig-6b]:** Photomicrograph (mandible) reveals malignant cells infiltrating into fibrous stroma

Commonly seen metastatic lesions in females arise from primary neoplasms in breasts, colon, genitals and thyroid glands, and in males arise from lungs, prostate and colon region [4,6]. Broad range of clinical characteristics might be seen with metastatic tumours of oral cavity, most commonly are pain, swelling, paresthesia, foul smell, gingival irritation, tooth mobility, exophytic growths of the soft tissues, reduced mouth opening and infrequently, pathological fractures [1,4,5]. Pathognomonic sign of metastatic lesion is paresthesia of lower lip and chin [7]. In the present case patient had paresthesia of both lower lip and chin was observed.

Khalili et al., reported a case of metastatic breast carcinoma which was initially diagnosed as pulp/periapical disease in 40-year-old female patient with vague pain in right mandibular area [8]. Because lip paresthesia was also noted, a more aggressive process was suspected. Patient's medical reports and histological sections were carefully observed. Diagnosis of metastatic breast carcinoma was confirmed by comparing the histopathologic findings of the jaw lesion with previous slides of the breast. In the present case we re-evaluated medical records and compared histology of jaw lesion to the slides of breast carcinoma.

The radiographic appearance of metastatic disease in the jaws varies from well circumscribed to poorly circumscribed radiolucencies; the latter also is known as a "moth eaten" appearance. Involvement of alveolar bone probably can mislead diagnosis with periodontal disease. Since metastatic neoplasms from the breast and prostate stimulate bone formation, this metastasis appears as mixed lesions [4].

In the indexed case, intraoral periapical radiograph showed presence of multiple irregular radiopaque foci in relation to mandibular molars with altered trabecular pattern. Jung YH et al., reported a case with histological features of right breast mass revealing cords of ductal carcinoma cells diffusely infiltrating in dense fibrous stroma [9]. Above findings are in favour of the present case.

Therapeutic modalities of metastatic lesions to the oral cavity is predominantly palliative and include radiation therapy, chemotherapy,

hormonal therapy and surgical. Major concern should be given for relieving pain and avoiding infections, fractures or haemorrhage [10]. Fontana S et al., reported a case where patient had underwent mandibular surgery for metastatic lesions arising from male breast person [11]. Later patient died due to aggressive clinical behaviour, in particular due to ascites and hepatic insufficiency [11].

CONCLUSION

Metastases to the oral cavity are quite uncommon. They usually present with symptoms similar to odontogenic infections and benign tumors, causing a delayed diagnosis and treatment. Careful examination and a high degree of clinical suspicion are required.

REFERENCES

- [1] Dib LL, Soares AL, Sandoval RL, Nannmark U. Breast metastasis around dental implants: a case report. *Clin Implant Dent Relat Res*. 2007;9:112-15.
- [2] Van der Waal RI, Buter J, van der Waal I. Oral metastases: report of 24 cases. *Br J Oral Maxillofac Surg*. 2003;41:3-6.
- [3] McMillan MD, Edwards JL. Bilateral mandibular metastases. *Oral Surg Oral Med Oral Pathol*. 1975;39:959-66.
- [4] D'Silva NJ, Summerlin DJ, Cordell KG, Abdelsayed RA, et al. Metastatic tumors in the jaws: a retrospective study of 114 cases. *J Am Dent Assoc*. 2006;137:1667-72.
- [5] Akinbami BO. Metastatic carcinoma of the jaws: a review of literature. *Niger J Med* 2009;18:139-42.
- [6] Friedrich RE, Abadi M. Distant metastases and malignant cellular neoplasms encountered in the oral and maxillofacial region: analysis of 92 patients treated at a single institution. *Anticancer Res*. 2010;30:1843-48.
- [7] Ryba F, Rice S, Hutchison IL. Numb chin syndrome: an ominous clinical sign. *Br Dent J*. 2010;208:283-85.
- [8] Khalili M, Mahboobi N, Shams J. Metastatic Breast Carcinoma Initially Diagnosed as Pulpal/Periapical Disease: A Case Report. *J Endod*. 2010;36:922-25.
- [9] Jung YH, Cho BH, Nah KS. Metastasis of breast carcinoma to the whole mandible. *Korean J Oral Maxillofac Radiol*. 2004;34:195-97.
- [10] Stavropoulos MF, Ord RA. Lobular adenocarcinoma of breast metastatic to the mandibular condyle: report of a case and review of the literature. *Oral Surg Oral Med Oral Pathol*. 1993;75:575-78.
- [11] Fontana S, Ghilardi R, Barbaglio A, Amaddeo P, Faldi F, Pericotti S. Male breast cancer with mandibular metastasis. a case report. *Minerva Stomatologica*. 2007;56(4):225-30.

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