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Case Report

Giant peripheral osteoma of the mandible

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ABSTRACT: Osseous expansion of any body part is an unwelcome guest and deep are its impacts when it is located on the face. The bigger the lesion, the more bitter is the psychosocial trauma to the affected individual. This article describes the case of a 50 year old female who presented with painless swelling of the right submandibular region manifesting as a dreadful cosmetic disfigurement. The mass had been progressing slowly for the last 15 years. Imaging showed a giant peripheral osteoma of 10.8 cm involving buccal and lingual surface of the body, ramus, angle and inferior border of the right side of mandible. To the best of our knowledge, a giant peripheral osteoma of mandible having size more than 10 cm has never been reported earlier.

KEY WORDS: *Giant peripheral osteoma; Swelling of mandible; CT scan, Panoramic view*

INTRODUCTION

Benign bony outgrowths of the compact or the cancellous bones result in formation of an osteoma. Only those arising from periosteum are labelled as peripheral osteomas and have varied etiology like being a true neoplasm, post traumatic entity, post infective or as an entity arising due to muscle traction. They are slowly growing, clinically silent and usually manifest only as focal asymmetry or disfigurement.

Constellation of osteomas, supernumerary and or impacted teeth, adenomatoid gastrointestinal polyps and tumours of soft tissues and skin; constitutes Gardner's syndrome. Such polyps in gastrointestinal system usually turn malignant. Diagnosing osteoma is therefore important and has a life saving potential because they can be the earliest presenting feature of Gardner's syndrome. This case report not only describes the largest peripheral osteoma in the literature available till

date, but also shows how disfiguring an unattended and neglected benign facial osseous lesion can turn. Initially asymptomatic but later ghastly psychosocially traumatic facial bone osteoma therefore calls for prompt surgical action and a timely nip in the bud. The role of imaging is important as it aids in diagnosing and managing the osteoma per se, and can rule in or rule out the possible existence and/or evolution of Gardner's syndrome.

Osteomas from mandible are rare; and rarer still is a giant osteoma from mandible. Hence it is being reported here. Relevant clinical data from the earlier published literature and the main differential diagnoses are also discussed.

CASE REPORT

A 50 year old female presented with painless swelling and resultant cosmetic disfigurement of right submandibular region (**Figure 1a & b**). There was no history of any local trauma. The mass had been progressing slowly for the last 15 years. On examination, a subcutaneous painless bony-hard mass in the submandibular area was palpable. Lateral mandibular radiograph (**Figure 2a**) and Panoramic view (**Figure 2b**) revealed a large exophytic radiodense mass arising from right side

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of the mandible. Axial (**Figure 3a**) and reformatted coronal (**Figure 3b**) CT scan bone window images demonstrated a large lobulated, bony mass attached to the buccal and lingual surface of the body, ramus, angle and inferior border of right mandible. The mass protruded towards the infero-lateral surface of the mandible and caused medial

displacement of the right submandibular gland. Superiorly the mass extended up to the mandibular notch and closely abutted the lateral pterygoid muscle. The bony mass was of the compact type and measured 10.8 x 4.0 x 4.6 cm. The clinical and radiographic findings were consistent with giant osteoma.



Figure 1: Photograph of patient (1a) and 3D CT of the mandible (1b) showing large mass along the body of mandible on right side



Figure 2: Lateral view of mandible (2a) and panoramic radiograph (2b) show large well circumscribed lobulated radiodense mass lesion (arrow) along the ramus, angle and body of mandible

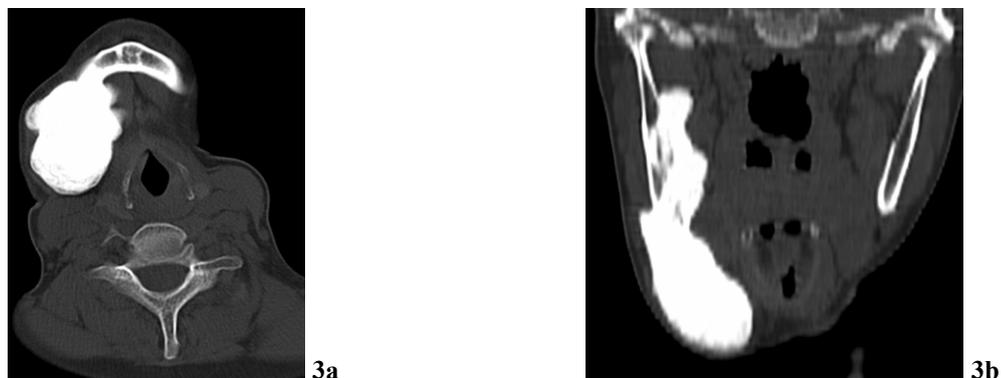


Figure 3: Axial (3a) and coronal reformatted (3b) CT images showing giant hyperdense mass lesion involving the ramus, angle and body of mandible

Fine needle aspiration cytology (**Figure 4**) showed typical features of osteoma that confirmed the

diagnosis. Diagnostic colonoscopy did not reveal any colonic polyps. The patient was referred to a

higher centre for cosmetic corrective surgery. Unfortunately, the patient did not return for follow up.

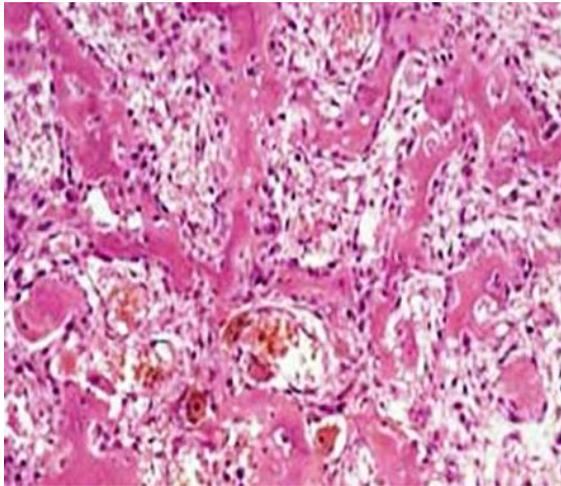


Figure 4: Fine Needle Aspiration Cytology slide showing osteoblast-lined bone trabeculae haphazardly connecting with each other in a background of loose connective tissue

DISCUSSION

Osteoma is a benign bone tumor with origins reported from periosteum, endosteum and even from extra-skeletal soft tissue. Central osteomas arise from endosteum and peripheral osteomas arise from periosteum. Although the exact cause is yet unknown, osteomas are formed when there is relentless unchecked growth in a bone¹. Hence, it is still a dilemma whether to call it a true neoplasm, developmental anomaly; or a reactive response to infection, trauma or muscle traction². Peripheral

osteomas are located in close proximity to muscle attachment (i.e. masseter, medial pterygoid, temporalis)³. Because of their slow growth, majority of the affected individuals have no symptoms. Hence they are noticed by patients only when they cause visible swelling or disfigurement and feel hard on palpation¹. Young adults are the commonest victims of mandibular osteomas in whom they manifest as umbrella shaped lesions and have a stalk. On radiographs, they appear as lobulated opacities. Histological confirmation is a must to further grade them into a compact, cancellous or mixed variety of peripheral osteoma⁴. Dental and skeletal abnormalities when associated with colorectal polyposis constitutes Gardner's syndrome. Relevant investigations must therefore be done to evaluate patients along this line⁴. Osteomas can occur in any bone but are found more frequently in the skull, ethmoid sinuses, mandible, and maxilla⁵.

This is a case of giant osteoma involving buccal and lingual surface of the body, ramus, angle and inferior border of the right mandible. It was a well circumscribed slow-growing hard mass and produced disfigurement. Sometimes osteoma can cause functional impairment such as difficulty in chewing, dysphagia and limited mandibular movement. Large peripheral osteomas of size up to 87 mm have been reported⁶. In this case, size of mass lesion was 108 mm. Absence of colorectal polyps, skeletal abnormalities and multiple impacted or supernumerary teeth in this case, was against labelling it as Gardner's syndrome. **Table 1** shows the summary of clinical and radiological features present in our case and some recent studies⁷⁻¹¹.

Table 1: Comparative analysis of features of mandible peripheral osteomas from some published studies

Criteria	Bulut et al ⁷	Goudar et al ⁸	Kaya et al ⁹	Donohué-Cornejo et al ¹⁰	Bhuvaneshwari et al ¹¹	Present Study
Age (yrs)	37	29	55	17	30	50
Sex	F	M	F	F	F	F
Present since (yrs)	6	12	?	10	3	15
Symptoms	-	-	-	-	-	-
Deformity	+	+	+	+	+	+
Size in cm	3	3	-	4.2	1.2	10.8
Labelled as	Large	-	Gigantic	Giant	-	Giant
Radiopaque mass	+	+	+	+	+	+
Stalk	+	-	-	?	+	-
Surgical Excision	+	+	+	+	+	+

CONCLUSION

Although peripheral osteomas are usually small in size, this case demonstrates that when neglected they can slowly enlarge considerably. Cosmetic disfigurement and functional impairment brings the patient for treatment. However it is expected of a vigilant medical professional that he actively rule out the possibility of Gardner's syndrome as a simple osteoma could be the earliest sign that heralds this syndrome which ultimately manifests as malignant polyps in gastrointestinal system.

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