

## Brown Tumor in Young Chronic Kidney Disease Patient: A Rare Case Report

Case Report

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### Abstract

**Introduction:** Brown tumors are focal bone lesions that occur in hyperparathyroidism. These tumors occur in any part of the skeleton but craniofacial involvement is rare.

**Case Report:** We report a case of a 26-year-old male with a known history of chronic kidney disease who reported with a complaint of a painless, slow growing, swelling on the left side of lower face. Blood picture revealed extremely elevated levels of parathyroid hormone. Panoramic radiograph showed a well-defined, unilocular radiolucency in the posterior mandible.

**Discussion:** Skeletal involvement due to secondary hyperparathyroidism is a well-known phenomenon. Involvement of the craniofacial skeleton is rare and the jaw bones is even rarer. Brown tumor of hyperparathyroidism is a slow growing, self-limiting lesions and resolves as the systemic condition improves.

**Conclusion:** It is important that dentists are aware and alert about this untoward pathology secondary to the coexisting comorbidities of CKD.

**Keywords:** Kidney Disease; Mandible; Osteitis fibrosa Cystica.

### Introduction

Brown tumors are focal bone lesions that occur in hyperparathyroidism. These tumors occur in any part of the skeleton but craniofacial involvement is rare [1]. Brown tumors are uncommon lesions with an overall prevalence of 0.1 % and usually occurs in patients older than 50 years with its occurrence three times more common in women [2, 3].

Hyperparathyroidism (HPTH) is a condition that is characterized by excessive production of parathormone (PTH). It may be a primary disorder due to adenoma of the parathyroid hormone, secondary disorder to chronic kidney dysfunction or tertiary to a long term secondary HPTH [2]. The disorder presents with multisystem involvement and skeletal involvement particularly is of significance to the dentist as jaw involvement by HPTH is not uncommon. Hence, it is necessary that dentists and oral health care professionals readily recognise this condition and avoid mis-

management. Here, we report a case of a 26-year old male with chronic kidney disease who presented with a radiolucent lesion of the posterior mandible.

### Case Summary

A 26-year-old male with a known history of chronic kidney disease (CKD5) reported with a painless, slow growing, swelling on the left side of the face of two years duration. He did not have any tooth-related complaints. He presented with an intra-oral swelling in the left molar region, which obliterated the buccal vestibule (Fig 1). His parathyroid hormone levels were highly elevated (1188 pg/ml).

Panoramic radiograph demonstrated a well-defined, unilocular radiolucency (4.5 × 3.0 cm) interspersed with specks of calcifications along with inferior cortical expansion. There was generalized loss of lamina dura along with root resorption in the left mandibular first molar tooth (Fig 2).

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**Figure 1: Clinical photograph depicting mild extraoral swelling on the left posterior mandibular region.**



**Figure 2: Panoramic radiograph showing specks of calcifications within the unilocular radiolucency and inferior cortical expansion of the left body of mandible.**



Since the patient's systemic status was compromised with severe anemia complicated by his progressive kidney disease, invasive procedures like biopsy and further investigative modalities like CT was not indicated. Since, brown tumor in his jaw would gradually resolve as his systemic status improves, we have kept the patient on regular recall visits. Patient is also undergoing regular dialysis. Currently, the jaw lesion is non progressive and totally asymptomatic. This further makes the need for biopsy and higher imaging questionable.

Correlating the clinical presentation and laboratory findings, we diagnosed the bony lesion to be the brown tumor of uncontrolled hyperparathyroidism, a late complication of renal osteodystrophy.

## Discussion

Patients with chronic renal disease do not produce active form of Vitamin D, consequently there is less calcium absorption from the gut. Brown tumors are focal bone manifestations noted in patients with uncontrolled hyperparathyroidism [1, 3]. They may affect any part of the skeletal system namely the ribs, pelvic girdle and clavicle but their appearance in the head and neck region is rare [2]. They usually present radiologically as well-defined radiolucent lesions with or without periosteal reactions. Maxillary and mandibular jaw bones exhibit decrease in trabecular density

and blurring of the normal trabecular pattern resulting in ground glass appearance. These lesions are self limiting and they do not require surgical intervention [4].

## Conclusion

Panoramic radiographs employed as screening tools may provide valuable information about the osseous involvement of hyperparathyroidism. Physicians should be aware and alert about this untoward pathology secondary to the coexisting comorbidities of CKD.

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