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Mandibular Brown Tumor Revealing a Parathyroid Adenoma: Case Report and Literature Review

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ABSTRACT

Brown tumor or fibrocystic osteitis is a rare benign bone lesion secondary to exposure to excessive parathyroid hormone secretion in hyperparathyroidism. It can affect the entire skeleton; mandibular localization remains exceptional.We report a case of a 28-year-old female patient, who presented a swelling of the chin evolving for 1 year. Radiological examination revealed the presence of two mandibular lytic lesions. Histological examination after biopsy revealed a giant cell tumor, on which the diagnosis of brown tumor was evoked and confirmed by the discovery of primary hyperparathyroidism profile on parathyroid adenoma whose surgical treatment allowed a spectacular regression of the mandibular tumor.Our patient's case illustrates how the Brown tumors should be considered in the differential diagnosis of osteolytic lesions to avoid unnecessary and harmful interventions.

Introduction

Brown tumor of bone is a rare benign lesion resulted from abnormal bone metabolism in the context of primary or secondary hyperparathyroidism. It can be asymptomatic, manifesting itself either as a more or less voluminous and annoying swelling or inducing symptoms such as pain, spontaneous fractures or neurological pictures. We report a case of brown tumor in the mandible as the initial exhibition of primary hyperparathyroidism associated with a parathyroid adenoma.

Case report

We report the case of a 28-year-old female patient, with no past medical history of note, hospitalized for a left chin swelling progressively increasing in volume for 1 year, associated with labio-mental anesthesia, intraoral examination revealed a gingival expression filling the lower vestibule with a bony consistency without bleeding on contact, ranging from 43 to 36 with avulsion of 33, 34 and 35 and mobility of 32 (Figure 1).

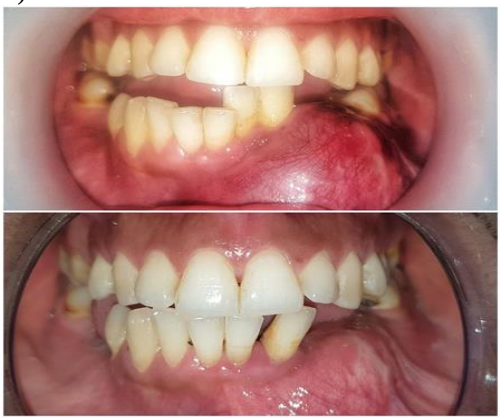

Figure 1. Intra-oral view showing the regression of the mandibular tumor 3 mouths post-parathyroid adenomectomy.

Radiological examination revealed the presence of two mandibular lytic lesions (Figure 2). Histological examination after biopsy revealed a giant cell tumor, on which the diagnosis of brown tumor was evoked and confirmed by the realization of a phosphocalcic assessment and parathormone dosage which revealed a primary hyperparathyroidism profile. A scintigraphy detected a parathyroid adenoma whose surgical treatment allowed spectacular regression until complete disappearance of the mandibular tumor (Figure 1,2).

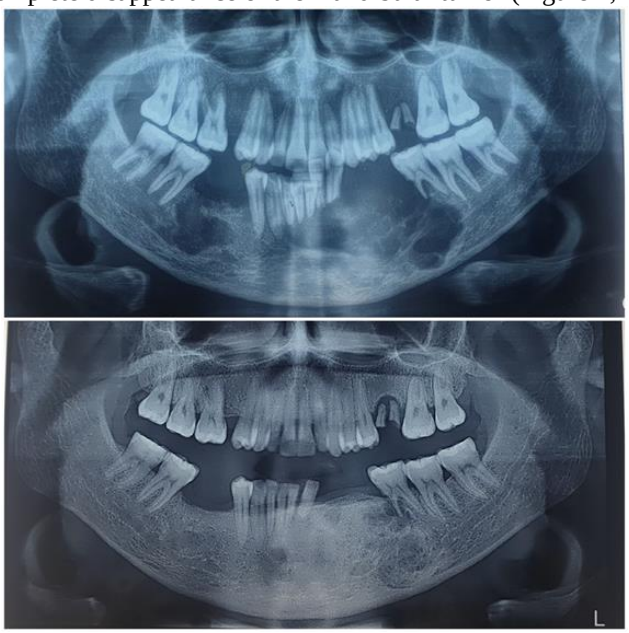

Figure 2 . Panoramic radiographs comparatives pre and post parathyroid adenomectomy showing spectacular disappearance of the voluminous mandibular tumor.

Discussion

Brown tumor also known as osteitis fibrosa, is a focal bone lesions, caused by increased osteoclastic activity and

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fibroblastic proliferation, encountered in patients with uncontrolled hyperparathyroidism (HPT).

It should be differentiated from other true giant cell tumors of bone, and it represents reparative granuloma rather than a true neoplastic process [1,2].

Brown tumors can be located in any part of the skeleton, but are most frequently encountered in the ribs, clavicles, extremities, and pelvic girdle. Although the reported occurrence in mandible is 4.5% of subjects in a 220-case HPT study, it is rare to find brown tumor as the initial clinical manifestation in primary HPT [3].

It generally affects young female patients, as in our case and maxillofacial involvement is very rare and occurs in approximately 4.5–11.8% of cases [4].

Clinically, the symptoms of this lesion depend on its size [5,6].

It may present as small, asymptomatic swelling in the jaw bone or as a painful exophytic mass, but it is usually asymptomatic and the discovery is incidental on radiological examination, The radiographic appearance is usually as a well-demarcated monolocular or multilocular osteolytic lesion infrequently associated with root resorption and loss of the lamina dura.

The diagnosis has to be confirmed by establishing elevated serum calcium and PTH levels because histological features alone are insufficient as it may resemble any giant cell tumor.

Histologically, brown tumors are characterized by vascular fibroblastic stroma and several osteoclast-like multinucleated giant cells often interspersed with hemorrhagic infiltrates and hemosiderin deposits [7].

The parathyroid technetium scintiscan is one of the most preferred imaging modality to localize diseased parathyroid glands prior to surgery. 6.

The initial step in the management of primary HPT involves control of HPT and a partial parathyroidectomy or adenomectomy is considered effective in spontaneous regression of small osteolytic jaw lesions. However, surgical excision may be indicated in large symptomatic lesion usually done after parathyroid surgery[3,8].

We report in our case a spectacular regression of a voluminous mandibular tumor 3 months after an excision of parathyroid adenoma without resorting to surgery of the mandibular tumor.

Conclusion

Indeed, in the presence of any histological result showing the presence of giant cells, hyperparathyroidism must be systematically sought by carrying out a phosphocalcic assessment and a parathormone dosage, in order to make an early diagnosis and thus avoid undertaking aggressive and mutilating treatments.

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