

Multiple Central Giant Cell Granuloma of the Mandible: A Case Report

Case Report

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Abstract

Introduction: Central giant cell granuloma is a benign lesion but sometimes has aggressive proliferation composed of multinucleated giant cells in a background of spindle and ovoid mesenchymal cells. Multifocal central giant cell granuloma of jaws is very rare and usually associated with hyperparathyroidism and some syndromes. We described an unusual case of a 22-year-old man with idiopathic multiple central giant cell granuloma of mandible without significant clinical findings. The parathyroid hormone level, calcium and phosphorus inorganic were in normal limit. Patient had no familial history and clinical characteristic of Cherubism, Noonan-like syndrome and neurofibromatosis. This article refers to the fact that multiple central giant cell granuloma may be associated with no signs of systemic or specific syndromes and it can be an independent and idiopathic disease.

Key words: •Granuloma •Giant Cell •Mandible
•Multiple lesions

Case Report

A 22-year-old man was referred by his dentist for evaluation of the multiple jaw lesions that incidentally was detected in panoramic radiograph. Extra and intraoral clinical examination disclosed no bony expansion or deformity. Panoramic radiograph revealed multiple large, well-defined multilocular radiolucent lesions in the right and left mandibular ramus and from right canine to first mandibular molar. All the lesions had coarse and curved internal septa that cause soap bubble appearance (Figure 1).

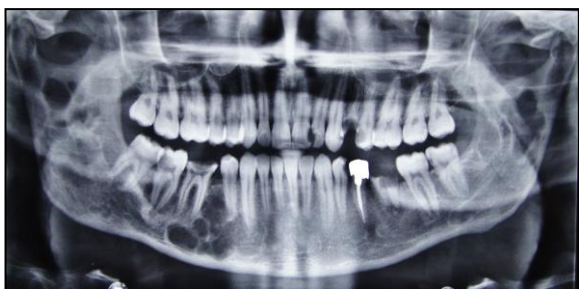


Figure 1. Panoramic radiograph revealed bilateral multiple multilocular radiolucent lesions.

His medical history was noncontributory. He had no familial history of Cherubism, Noonan-like syndrome and neurofibromatosis. The patient underwent incisional biopsy from the left mandibular lesion. Histopathologic evaluation showed scattered multinucleated giant cells in the background of ovoid to spindle mesenchymal cells. Extravasated red blood cells and hemosiderin were also evident (Figure 2).

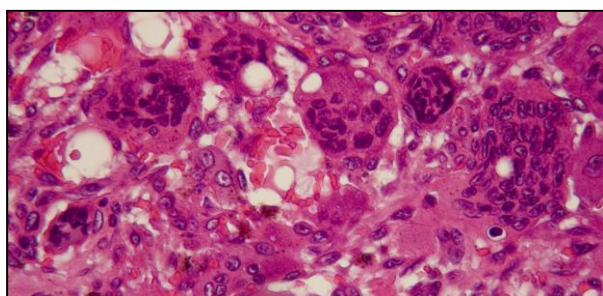


Figure 2. Histopathologic evaluation showed scattered multinucleated giant cells in the background of ovoid to spindle mesenchymal cells with evident extravasated red blood cell and hemosiderin.

These findings were consistent with central giant cell granuloma and due to multiple sites involvement the patient referred to evaluation of parathormone hormone (PTH) level to rule

out hyperparathyroidism. The PTH level was 14.5 pg/ml (normal range from 6.5 to 36.8). Calcium and phosphorus inorganic were in normal limit but alkaline phosphatase was slightly elevated probably due to bone destruction. Patient had no clinical characteristic of Cherubism, Noonan-like syndrome and neurofibromatosis. Because of asymptomatic lesions, surgical intervention was not performed and the patient was under follow up.

Discussion

Central giant cell granuloma (CGCG) is a localized benign and sometimes aggressive lesion composed of giant cells in a background of spindle and ovoid mesenchymal cells.⁽¹⁾ There is a controversy about whether it is a true neoplasm or reactive process.⁽²⁾ Despite female predominance, factors other than estrogen and progesterone are responsible for the development of CGCG.⁽³⁾ This lesion appears most commonly before the age of 30 and mandible is the common involved region.⁽⁴⁾ The radiologic features are not pathognomonic and vary from ill-defined destructive lesions to well-defined multilocular appearance.⁽¹⁾ The most common feature was a painless smooth jaw swelling, but tooth loosening, displacement and resorption; pain and pathologic fracture may also be seen.^(1,3,4) CGCG of the jaw is usually unifocal, the occurrence of multifocal lesions in these patients is reported to be extremely rare.^(1, 5-7) Most of the multifocal CGCG of the jaw are associated with systemic disease or syndromes.⁽⁸⁻¹⁴⁾ Multiple form of this lesion is usually associated with hyperparathyroidism that can occur with abnormality in parathyroid glands or renal osteodystrophy.^(1,8) In our case, the level of parathyroid hormone, calcium and phosphorus were in normal limit but alkaline phosphatase was slightly elevated probably due to bone destruction. CGCG was the sign of some syndromes such as cherubism, Noonan like, and Ramon, and also associated with neurofibromatosis type I.^(5,9-15) Cherubism is characterized by bilateral enlargement of the jaws that presents with varying degrees of involvement and a tendency toward spontaneous remission. In some cases,

exposure of lower rim of the sclera was seen.⁽¹⁴⁾ In this syndrome, serum calcium, parathyroid related hormone, calcitonin, and alkaline phosphatase is within normal level.⁽¹⁶⁾ The Ramon syndrome is characterized by gingival fibromatosis, hypertrichosis, epilepsy, mental and somatic retardation and giant cell lesions.⁽¹⁷⁾ The patient with Noonan-like syndrome has cardiac anomalies, short stature, webbed neck, ptosis, hypertelo-

rim and giant cell lesions.⁽¹⁸⁾ Our patient had no symptoms like these syndromes.

Conclusion

This article refers to the fact that multiple central giant cell granuloma may be associated with no signs of systemic or specific syndromes and can be an independent and idiopathic disease.

References

1. Orhan E, Erol S, Deren O, et al. Idiopathic bilateral central giant cell reparative granuloma of jaws: a case report and literature review. *Int J Pediatr Otorhinolaryngol* 2010; 74:547-52.
2. Kaffe I, Ardekian L, Taicher S, et al. Radiologic features of central giant cell granuloma of the jaws. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod* 1996; 81:720-6.
3. Whitaker SB, Waldron CA. Central giant cell lesions of the jaws. A clinical, radiologic, and histopathologic study. *Oral Surg Oral Med Oral Pathol* 1993; 75:199-208.
4. De Lange J, Van den Akker HP. Clinical and radiological features of central giant-cell lesions of the jaw. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod* 2005; 99:464-70.
5. Ardekian L, Manor R, Peled M, Laufer D. Bilateral central giant cell granulomas in a patient with neurofibromatosis: report of a case and review of the literature. *J Oral Maxillofac Surg* 1999; 57:869-72
6. Curtis NJ, Walker DM. A case of aggressive multiple metachronous central giant cell granulomas of the jaws: differential diagnosis and management options. *Int J Oral Maxillofac Surg* 2005; 34:806-8.
7. Smith PG, Marrogi AJ, Delfino JJ. Multifocal central giant cell lesions of the maxillofacial skeleton: a case report. *J Oral Maxillofac Surg* 1990; 48(3):300-5.
8. Jebasingh F, Jacob JJ, Shah A, et al. Bilateral maxillary brown tumours as the first presentation of primary hyperparathyroidism. *Oral Maxillofac Surg* 2008; 12:97-100.
9. Divan Damme PA, Mooren RE. Differentiation of multiple giant cell lesions, Noonan-like syndrome, and (occult) hyperparathyroidism. Case report and review of the literature. *Int J Oral Maxillofac Surg* 1994; 23:32-6.
10. Betts NJ, Stewart JC, Fonseca RJ, Scott RF. Multiple central giant cell lesions with a Noonan-like phenotype. *Oral Surg Oral Med Oral Pathol* 1993; 76:601-7.
11. Chrcanovic BR, Gomez RS, Freire-Maia B. Neurofibromatosis type 1 associated with bilateral central giant cell granuloma of the mandible. *J Craniomaxillofac Surg* 2011; 39:538-43.
12. Edwards PC, Fox J, Fantasia JE, et al. Bilateral central giant cell granulomas of the mandible in an 8-year-old girl with Noonan syndrome (Noonan-like/multiple giant cell lesion syndrome). *Oral Surg Oral Med Oral Pathol Oral Radiol Endod* 2005; 99:334-40.
13. Mortellaro C, Bello L, Lucchina AG, Pucci A. Diagnosis and treatment of familial cherubism characterized by early onset and rapid development. *J Craniofac Surg* 2009; 20:116-20.
14. Wägel J, Luczak K, Hendrich B, et al. Clinical and radiological features of nonfamilial cherubism: A case report. *Pol J Radiol* 2012; 77:53-7.
15. Suhanya J, Aggarwal C, Mohideen K, et al. Cherubism combined with epilepsy, mental retardation and gingival fibromatosis (Ramon syndrome): a case report. *Head Neck Pathol* 2010; 4:126-31.
16. Southgate J, Sarma U, Townend JV, et al. Study of the cell biology and biochemistry of cherubism. *J Clin Pathol* 1998; 51:831-7.

17. Suhanya J, Aggarwal C, Mohideen K, et al . Cherubism combined with epilepsy, mental retardation and gingival fibromatosis (Ramon syndrome): a case report. *Head Neck Pathol* 2010; 4:126-31.
18. Noonan JA. Noonan syndrome. An update and review for the primary pediatrician. *Clin Pediatr (Phila)* 1994; 33:548-55.