

Case Report

Large idiopathic osteosclerosis in the mandibular after exclude other bone diseases: a case report

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ABSTRACT

Idiopathic osteosclerosis is an asymptomatic, localized radiopaque bone lesion characterized by a dense, homogeneous appearance and occurs independently of infection or systemic conditions. The aim of this case report is to increase awareness about idiopathic osteosclerosis and its differential diagnosis in the maxillofacial region. A 26-year-old female patient was referred to the oral medicine clinic for evaluation of a bone lesion identified on a panoramic X-ray. Upon clinical examination, no carious teeth were noted. The panoramic X-ray revealed a radiopaque lesion on the lower right side of the mandible, extending from the distal aspect of the second molar to the mesial aspect of the third molar. Cold testing and percussion were performed, both yielding positive results. Based on these findings, a diagnosis of idiopathic osteosclerosis on the right side of the mandible was confirmed. The present case revealed an incidental finding of a radiopaque, elliptical lesion between the lower right molars, measuring approximately 20 mm in diameter, with no evidence of bone perforation or clinical relation to the surrounding teeth.

Keywords: Bone lesion, Idiopathic osteosclerosis, Radiopaque bone lesion

INTRODUCTION

Idiopathic osteosclerosis is a benign, asymptomatic, localized radiopaque bone lesion characterized by a dense, uniform appearance. It occurs independently of infections or systemic diseases.¹ Radiographically, these lesions can vary in size, shape and density.² A study examining 107 patient records with radiopacities resembling idiopathic osteosclerosis found that 67% of cases occurred in females, while 33% were in males.² Typically, this condition involves excessive bone formation in the jaw, appearing as round, elliptical or

irregular radiopaque areas.^{3,4} Sclerosis, often resulting from occlusal trauma to a single tooth, usually affects the entire alveolar process surrounding the tooth rather than being limited to the periapical region.⁵ Hypercementosis can be differentiated from idiopathic osteosclerosis by the distinct club-shaped appearance of the affected tooth and the clearly defined radiolucent periodontal ligament space that separates the lesion from the surrounding bone.⁵

The aim of this case report is to increase awareness about idiopathic osteosclerosis and its differential diagnosis in the maxillofacial region.

CASE REPORT

A 26-years-old female patient was referred to the Oral Medicine Clinic for evaluation of a bony lesion that was incidentally discovered on a panoramic X-ray.

The patient was vitally stable, afebrile, with no known medical conditions, no history of allergies and no constitutional symptoms. She reported no numbness or tenderness in the affected area. Clinical examination revealed no carious teeth and no intraoral swelling involving the bone or soft tissues in the lower right posterior region of the mandible.

The panoramic radiograph showed a well-defined radiopaque lesion on the lower right side of the mandible, extending from the distal aspect of the second molar to the mesial aspect of the third molar (Figure 1). Based on the radiographic features, the differential diagnosis included idiopathic osteosclerosis and condensing osteitis.



Figure 1: Panoramic X-ray-a radiopaque lesion on the lower right side of the mandible, extending from the distal aspect of the second molar to the mesial aspect of the third molar.

To distinguish between the two conditions, vitality testing of the pulpal tissue was performed using a cold test, along with percussion testing using a dental instrument (mouth mirror). The cold test elicited a normal response, indicating that the pulp was vital. Furthermore, no pain or sensitivity was noted during percussion, suggesting the absence of periapical inflammation.

Since both tests yielded normal results, a final diagnosis of idiopathic osteosclerosis affecting the right side of the mandible was confirmed. A follow-up visits after 10 months revealed no swelling or inflammation in the area of the lesion. Repeat cold and percussion tests continued to show normal results, consistent with the previous findings.

DISCUSSION

Idiopathic osteosclerosis (IO) can be associated with the roots of teeth or may be separated from them by the normal trabecular bone of the alveolar process. It can be located in periapical regions and may also occur in edentulous areas of the oral cavity. On radiographs, IO near the apex of a tooth typically appears as a well-defined, uniformly dense, non-expanding radiopacity, with a normal periodontal ligament space and lamina dura.⁶ Although it is commonly believed that IO remains stable in size over time, several studies have shown that dense bone islands can demonstrate metabolic activity and may change in size.⁷ IO lesions can interfere with tooth eruption and orthodontic movement. Additionally, they may recur after surgical removal and can persist for years without remodelling.⁸ In the present case, an incidental finding revealed a radiopaque, elliptical lesion in the periapical area of the lower right molars, measuring approximately 20 mm in diameter. There was no evidence of bone perforation or abnormalities in the surrounding teeth.

Condensing osteitis (CO) is another asymptomatic, localized radiopaque lesion of the jaw, commonly detected through routine radiographic evaluations. Also known as periapical sclerosing osteitis or focal sclerosing osteitis, CO is usually associated with chronic pulp inflammation in teeth with deep caries or large dental restorations. Unlike IO, CO usually involves a tooth with a chronically inflamed or necrotic pulp.⁹ The findings in the present case argue against a diagnosis of condensing osteitis, as the teeth adjacent to the lesion were vital and showed a negative response to percussion testing.

The prevalence of IO does not appear to be influenced by race and its distribution in the mandible or maxilla whether surrounding or distant from teeth is not uniform. However, the posterior region of the mandible is the most commonly affected site for IO lesions.¹⁰

CONCLUSION

The present case revealed an incidental finding of a radiopaque, elliptical lesion between the lower right molars, measuring approximately 20 mm in diameter, with no evidence of bone perforation or clinical relation to the surrounding teeth.

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