Idiopathic Osteosclerosis: A Case Report of Rare Complication with Unusual Presentation and Review
Deepti Garg Jindal, Varun Jindal

Abstract
Idiopathic osteosclerosis refers to a focal area of increased radiodensity that is of unknown cause and cannot be attributed to any inflammatory, dysplastic, neoplasia, or systemic disorder. Idiopathic osteosclerosis is invariably asymptomatic, not associated with detectable cortical expansion, and is typically detected during a routine radiographic examination. This is a case report of 60 year old edentulous female patient with IO in mandibular posterior region which is a rarity.

Key words: Musculoskeletal Diseases;Bone Diseases;Osteochondrodysplasias;Osteosclerosis;Osteopetrosis;Idiopathic.

Introduction
Idiopathic osteosclerosis (IO) is a condition which may be found around the roots of a tooth. It can be defined as focal radiodensity of the jaw which is not inflammatory, dysplastic, neoplastic or a manifestation of a systemic disease. IO has also been termed dense bone island, bone eburnation, bone whorl, bone scar, enostosis, and focal periapical osteopetrosis.\(^1\)\(^-\)\(^7\) It is usually painless and found during routine radiographs. It appears as a radiopaque (light area) around a tooth, usually a premolar or molar. There is no sign of inflammation of the tooth. This is common and affects 5% of the population, usually seen in teens and those in their 20’s. It is typically asymptomatic and is an incidental finding on a radiograph. Radiologically, it presents as a well-defined, rounded or triangular radiodensity that is uniformly opaque. There is no lucent component usually found near the root apex or in the inter-radicular area. Root resorption and tooth movement are rare. Usual diagnosis is via radiograph, patient history, biopsy is rarely needed. Periodic follow ups should include additional radiographs that show minimal growth or regression. No treatment is necessary.\(^1\)

Case report
A 60- year old female patient reported to our college to get her denture made. The upper and lower arches were completely edentulous with no bony spicule or root stumps. The patient complained of slight discomfort in left lower posterior region from where she got her last tooth extracted a month ago. Routine radiographs showed a rounded radiodensity that was uniformly opaque (Fig 1 & 2). There was no lucent component. Para nasal Sinus view was also taken and it also revealed the same findings (Fig 3). Periodic follow ups were done and it was found that there were no significant changes in the size of lesion and patient was totally asymptomatic. Therefore, the diagnosis of idiopathic osteosclerosis was given.

Discussion
IO is described as a localized no expansible radiopacity of unknown origin.\(^2\)\(^,\)\(^8\) The prevalence of radiopaque lesions as presented in the literature ranges from 3.3% to 31.0%.\(^7\) Geist and Katz\(^5\) observed 5.4% frequency of idiopathic osteosclerosis in 1,921 full-mouth intraoral radiographic surveys. The idiopathic osteosclerosis frequency of 6.1% on 1,047 panoramic radiographs of patients by Yonetsu et al\(^6\) was approximately two thirds, as high as previously reported by Kawai et al\(^9\) on panoramic radiographs of 1,203 patients.

This radiopacity can be found in most parts of the skeleton.\(^10,\)\(^11\) In the jaws, studies have reported a predilection for the mandible in the posterior region\(^1\)\(^-\)\(^7\) which is present in our case also. This might partly be explained by the fact that when panoramic radiographs are examined and assessed, there are fewer problems with the superimposition of
anatomic structures in the mandible than in the maxilla. In addition, it may be attributed to differences in bone anatomy and blood supply. IO lesions are most frequently found located in the premolar and molar areas, they might represent residual roots from deciduous molars, resorbed and replaced by sclerotic bone. Histological examination in the study of Henrikson et al. clearly demonstrated sclerotic bone containing a retained root in one case. So, it is possible that microscopic root fragments may act as a nidus for bone proliferation in some cases.

This finding agrees with Geist et al. and McDonnell, who found a female to male ratio of 1.5:1 and 2:1, respectively. Similarly, Avramidou et al. detected that female patients were more likely to have a radiopaque lesion than men and it is in accordance with our case. However, Kawai et al. and Yonetsu et al. found no difference between the incidence in women and men.

The IO could appear as round, elliptical or irregular in shape, generally asymptomatic and without any obvious etiological agent. The internal aspect is usually uniformly radiopaque, consisting of a ground glass / stippled appearance or coarse trabeculae that may extend beyond the area of increased density. Radiographically our case showed a rounded radiodensity that was uniformly opaque. There was no lucent component.

Although the cause and biologic behavior of IO is unknown, the suggested causes include retained primary root fragments, bone deposited in response to unusual occlusal forces or anatomic variations analogous to tori. IO is clearly separated from the roots of the adjacent teeth and should be distinguished from condensing osteitis of dental origin, or other alveolar bone related radiopacities such as periapical cemental dysplasia and ossifying fibroma.

Kawai et al. found a marked decrease with advanced age in the prevalence of periapical enostosis (idiopathic osteosclerosis related to teeth), while they also observed a sharp increase in solitary enostosis (idiopathic osteosclerosis not related to teeth) during the seventh decade, which they attributed to the automatic replacement of periapical enostosis by solitary enostosis.

Studies reveal that IO had a higher prevalence among women than among men.

Conclusion
Idiopathic osteosclerosis lesions are radiopaque without any obvious etiological agent. Theses lesions are more common in the mandible, appear in round, elliptical or irregular shapes and are found in a routine radiographic examination. They are usually asymptomatic and does not cause bone expansion. As the lesion was found in a 60 year old edentulous patient which was asymptomatic & was found on routine radiographic examination in our case, the final diagnosis of idiopathic osteosclerosis not related to teeth (solitary enostosis) was made.
Author Affiliations
1. Dr. Deepti Garg Jindal, Senior Lecturer, Department of Oral and Maxillofacial Pathology, B.R.S. Dental College and Hospital, Sultanpur, Panchkula, Haryana, 2. Dr. Varun Jindal, Senior Lecturer, Department of Conservative Dentistry and Endodontics, Bhojia Dental College and Hospital, Baddi, Himachal Pradesh, India.

Acknowledgement
We would like to thank the staff members of the oral pathology department for their support & cooperation.

References

Corresponding Author
Dr. Deepti Garg Jindal
# 636, Sector-10, Panchkula, Haryana, India.
Mobile No: +91-9872605676
Email id: drdeeptigarg08@gmail.com

Source of Support: Nil, Conflict of Interest: None Declared.