

DENSE BONE ISLAND' OF THE MANDIBLE – A CASE REPORT**¹*Dr. Kirti Chawla, ²Dr. Ashu Bhardwaj, ³Dr. Madhuri Alankar Sawai, ⁴Dr. Zeba Jafri**^{1,3,4}B.D.S., M.D.S., Professor, Department of Periodontology, Faculty of Dentistry, Jamia Milia Islamia, New Delhi.²B.D.S., M.D.S., Professor and Incharge, Department of Periodontology, Faculty of Dentistry, Jamia Milia Islamia, New Delhi.

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Milia Islamia, New Delhi.<https://doi.org/10.5281/zenodo.19337071>**How to cite this Article:** ¹Dr. Kirti Chawla, ²Dr. Ashu Bhardwaj, ³Dr. Madhuri Alankar Sawai, ⁴Dr. Zeba Jafri. (2026). Dense Bone Island' of The Mandible - A Case Report. International Journal of Modern Pharmaceutical Research, 10(4), 01-03.**ABSTRACT**

Dense Bone Island also known as focal idiopathic osteosclerosis is seen as a localized radiopaque dense lesion on the radiograph either round, oval elliptical or irregular in shape. It is asymptomatic with no known etiology. Most of the lesions are non-expansile. They are of usually no clinical significance and do not require any treatment. This paper aims to describe one such case of dense bone island occurring in mandibular first premolar area.

KEYWORDS: Dense Bone Island, Focal Idiopathic Osteosclerosis, bone scar, focal periapical osteopetrosis, enostosis.**INTRODUCTION**

'Dense Bone Island' (DBI) also called as Focal Idiopathic Osteosclerosis is a focus of increased bone density.^[1] It is known by various names like 'bone scar', 'focal periapical osteopetrosis' or 'enostosis'.^[2] It could be elliptical, round or irregular in shape.^[1] It refers to a benign focal growth of compact bone with increased bone density without cortical expansion within the cortical bone.^[3]

These are regarded as developmental intraosseous anatomic variations. They do not result from any inflammatory or systemic disease. These are asymptomatic lesions usually discovered as incidental findings.^[4] 90% of the focal idiopathic osteosclerosis lesions are found in the mandibular first molar area. They may be present either periapically or remote to the teeth with normal periodontal space and lamina dura.^[3,5] Very few cases of focal idiopathic osteosclerosis have been reported in the literature. The aim of this article is to report a case of 'Dense Bone Island' in the mandibular premolar area.

CASE REPORT

A 32-year female patient reported to the outpatient department of Periodontics with a chief complaint of pain in upper left tooth region and missing lower left teeth. The patient was systemically healthy.

On intraoral examination, mild plaque and calculus were present. #36 was missing. An OPG was advised for replacement of the missing tooth with dental implant. A dense radiopaque mass oval in shape with well defined borders was discovered incidentally on the OPG (Figure 1). The dense mass was abutting the roots of lower right first premolar. Further examination, revealed that the lower right first premolar was asymptomatic and negative to tender on percussion. No bone(cortical) expansion was seen intraorally (Figure 2). Other findings included the presence of root canal treated #16 with a fixed prosthesis. IOPA (Figure 3) confirmed the presence of radiopaque dense mass tear shaped abutting the roots of lower right first premolar (#44). There was no external resorption of the root of first premolar. No Interdental bone loss was seen.

The diagnosis was based on clinical features. No histological examination was done as patient was

asymptomatic. Radiological findings correlated with the characteristic features of idiopathic focal osteosclerosis.

Figures

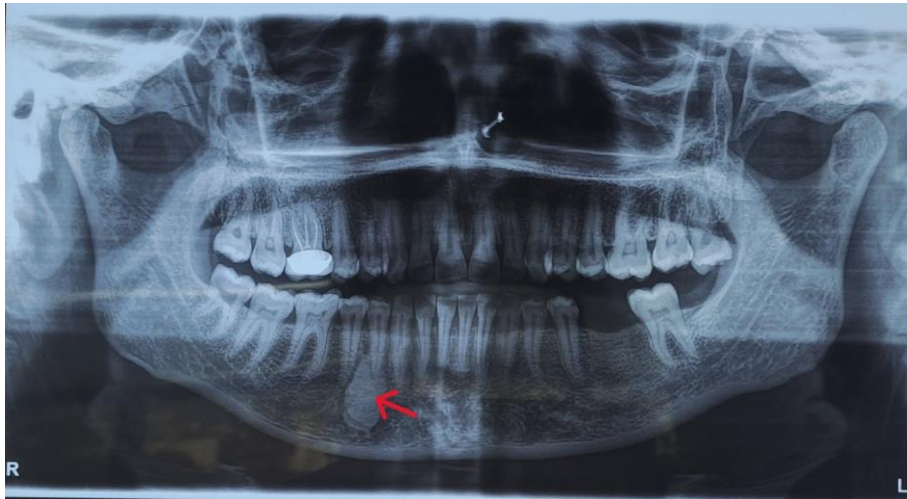


Figure 1: OPG showing dense radiopaque mass in relation to mandibular right first premolar.



Figure 2: Intra-oral view showing no cortical expansion.



Figure 3: IOPA showing radiopaque dense bone island abutting the root of right mandibular first premolar.

DISCUSSION

'Dense Bone Island' or 'Idiopathic Focal Osteosclerosis' is an asymptomatic intramaxillary lesion, with a prevalence ranging from 2.3% to 9.7%. Sisman *et al*^[6] reported the prevalence of idiopathic osteosclerosis as 6.1%. It is found more in Blacks and Asian population than in the Caucasian population. The jaws are the bones of the skull most frequently affected. DBI is most commonly seen in mandibular first premolars (44%) and first molars (43%) and least common in mandibular canines. The mean size ranges from 1.5mm to 15.6mm.^[7] Mariani *et al*^[8] reported a case of dense bone island in a 26 year old patient in left lower first molar. Perez *et al* (2023) reported a case of idiopathic mandibular osteosclerosis in a 17-year old female patient at the apex of #44 similar to our case report.^[9] Mishra *et al* (2024)^[10] reported 2 cases of idiopathic osteosclerosis in orthodontic patients. In Case 1, the dense bone island was seen in the maxillary premolar-molar region in a 19-year old female patient. In case 2, the focal osteosclerosis was seen in the mandibular first molar region. Oshima *et al* (2010)^[11] described a case of idiopathic osteosclerosis in the mandible associated with abnormal tooth root formation. In a longitudinal study by Wang *et al* (2022)^[12], 68 patients (11.3%) out of 571 patients had 78 idiopathic osteosclerosis lesions in the mandible with premolar/ molar preference and no sex predilection. Lopez and Rodriguez^[13] reported that focal idiopathic osteosclerosis can be diagnosed by digital panoramic radiography and some cases may be diagnosed using cone beam computed tomography (CBCT). This case report described a case similar to the cases reported in the literature showing a dense radiopaque mass in the first premolar region.

CONCLUSION

Dense bone island or idiopathic focal osteosclerosis has no definitive etiology and asymptomatic periodic follow-up and monitoring are suggested.

REFERENCES

- Petrikowski CG, Peters E. Longitudinal radiographic assessment of dense bone island of the jaws. *Oral Surgery Oral Med Oral Pathol Oral Radiol and Endod*, 1997; 83: v627-634. doi: 10.1016/s1079-2104(97)90131-1.
- Kawai T, Muratami S. Gigantic dense bone island of the jaw. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod*, 1996; 82: 108-115. doi: 10.1016/s1079-2104(96)80387-8.
- Gamba T, Maciel N, Rados P, da Silveira H, Arús N, Flores I. The Imaging Role for Diagnosis of Idiopathic Osteosclerosis: A Retrospective Approach Based on Records of 33,550 Cases. *Clin Oral Investig*, 2021; 25: 1755-1765. doi:10.1007/s00784-020-03477-0
- Bsoul SA, Alborz S, Terezhalmay GT, Moore WS. Idiopathic osteosclerosis (enostosis, dense bone islands, focal periapical osteopetrosis) *Quintessence Int.*, 2004; 35: 590-591.
- Moshfeghi M, Azimi F, Anvari M. Radiologic Assessment and Frequency of Idiopathic Osteosclerosis of Jawbones: An Interpopulation Comparison. *Acta Radiol*, 2014; 55: 1239-1244. doi:10.1177/0284185113515210
- Sisman Y, Ertas ET, Ertas H, Sekerci AE. The frequency and distribution of idiopathic osteosclerosis of the jaw *Eur J Dent*, 2011; 5: 409-414.
- Zayet MK, Hassan AA. Assessment of idiopathic osteosclerosis in the jaws of the Egyptian population using cone beam computed tomography. *Egypt Dent J.*, 2019; 65: 1397-1401.
- Mariani GC, Favaretti F, Lamazza L, DE Biase A. Dense Bone Island of the jaw: a case report. *Oral Implantol (Rome)*, 2008; 1: 87-90.
- Perez A, Mamane A, Lombardi T. Idiopathic mandibular osteosclerosis: A case of complex diagnosis. *Oral*, 2023; 3: 572-579.
- Mishra G, RB, Bhogte SA, Chitra P. Idiopathic osteosclerosis in orthodontic patients: A report of two cases. *Cureus*, 2024; 16: e53426.
- Oshima S, Suzuki J, Yawaka Y. Idiopathic osteosclerosis in the mandible associated with abnormal tooth root formation. *Pediatric Dent J.*, 2010; 20: 91-94.
- Wang S, Xu L, Cai C, Liu Z, Zhang L, Wang C, Xu J. Longitudinal investigation of idiopathic osteosclerosis lesions of the jaws in a group of Chinese orthodontically treated patients using digital panoramic radiography *Journal of Dental Sciences*, 2022; 17: 113-121.
- Nahuincopa P, Romero L. An updated review of idiopathic osteosclerosis in the jaws. *Rev Cient Odontol (Lima)*, 2021; 9: e050.

