**Introduction**

A “Dense Bone Island” (DBI) is a localized, well-defined, radiopaque mass in the jaw with a round, elliptical or irregular shape and a variable size. Most of these lesions are asymptomatic, and represented casual finds in routine X-rays. Although DBI has been reported with a variety of names including enostosis, bone scar, focal osteosclerosis, idiopathic osteosclerosis and periapical osteopetrosis, their cause and classification are controversial.

On radiographic evaluation, they are well separated from the surrounding normal bone, and smooth or irregular in outline. Histopathologically, DBIs are composed of dense calcified tissue without marrow spaces and generally no inflammatory cell infiltration. Most of the DBIs described in literature are smaller than 2 cm; this leads to hypothesize that they may not reach the sufficient size to cause jaw expansion.

**Case report**

Twenty-six-year-old female patient, negative anamnesis for systemic diseases, showed no rele-
vant alterations at the intra-oral examination. The radiographic examinations (Orthopantomography, CT Dentascan), showed a 1cm osteocondensing lesion, localized under the left first lower molar (Figg. 1, 2).

The patient had radiographic examinations that showed the evolution of the lesion since its onset (Figg. 3, 4, 5).

In consideration of its remarkable increase in the last 10 years, and of an intermittent painful symptomatology, was decided to perform a surgical enucleation of the lesion.

Surgical treatment was performed under general anesthesia using ultrasonic device. DBI was removed preserving surrounding bone tissue and alveolar nerve (Figg. 6, 7). Notwithstanding the lack of cleavage plane between lesion and sur-

rounding bone, precision and selective cut of ultrasound device allowed a conservative excision (Fig. 8). Microscopic examination showed cortical lamellar bone tissue partly sclerotized in the site of previous reworking, locally in continuity with porous bone whose medulla spaces were occupied by vascularized loose fibrous tissue (Fig. 9).
The diagnosis made, in consideration of both the histological and radiographic examination of the lesion, was of solitary enostosis, known as “bone island”.
No recurrence was showed in one year follow-up radiograph (Fig. 10).

**Discussion**

DBI are generally modest in size and do not change overtime (5). Mirra (6), presented the case
of a 5-year-old child with a lesion of 1.1 × 1.7 cm in the distal portion femur, initially considered as a DBI, whereas 6 months later the lesion had reached the size of 4.2 × 3.0 cm, and a biopsy showed evidence of osteosarcoma. The author suggests to perform an open surgery biopsy of DBI when the size of the lesion increases by 25% in 6 months or by 50% in one year.

DBI may be differentiated from more aggressive or malignant bone lesions by one of the following: absence of a primitive tumor, slow growth over a period of years, a clearly demarcated margin with thorny radiation from the sclerotic lesion and the absence of pain.

Petrikowski and Peters (1) noted that, for practical purpose, the calcifying encondroma, medullary bone infarct, healing non-ossifying fibroma, osteosarcoma and osteoid osteoma can be eliminated from the differential diagnosis of DBI.

Always according to Petrikowski and Peters (1), the age in which a DBI is found ranges between 9.4 and 14.0 years, whereas according to other studies, DBI seems to be more frequent in the third decade of life (7, 8).

Various therapeutic choices apply. If the lesion is an isolated radiopaque area without any connection with the teeth, and no painful symptomatology occurs, it is preferable not to surgically intervene.

When, the thick radiopaque area is associated to a secondary infection, through the element involved, the surgical procedures must be carefully carried out in order not to cause lesions to the surrounding areas.

References


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