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Cementoblastoma - A Review

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ABSTRACT:

Cementoblastoma is a rare benign lesion that represents less than 1% of all odontogenic tumours. It's characterized by proliferation of cementum-like tissue and in almost all cases tends to be associated with an erupted permanent tooth, most often the first molar. Cementoblastoma is a rare odontogenic tumor, it should be considered in the differential diagnosis of periapical radio-opacities. The diagnosis is established by its attachment to the root of tooth and radiographic halo surrounding the radio-opaque mass. The treatment of choice is complete removal of the lesion with the extraction of the associated tooth. Complete excision of the tumor mass reduces the chances of recurrence.

Key Words: *Cementoblastoma, Odontogeneic tumors, Osteoma, Osteomylitis*.

INTRODUCTION:

Cementoblastoma is as of now positioned by the World Health Organization as an odontogenic mesenchyme or ectomesenchyme tumor, with or without involvement of the odontogenic epithelium [1]. It is a benign tumor that is described by [11]multiplication cementum-like tissue that is appended to the root of teeth [2-6]. A cementoblastoma lesion is generally found in the mandible, most commonly in the pre-molar and molar region [7,8]. Its prevalence is higher in youthful male grown-ups who are under 30 years old [9]. Cementoblastomas are moderate growing lesion [9,10] and are typically asymptomatic; pain, and swelling may happen.

CLINICAL FEATURES:

A cementoblastoma lesion is usually found in the mandible, most commonly in the pre-molar and molar region [7,8]. Its prevalence is higher in young male adults who are under 30 years of age [9]. Cementoblastomas are slow growing lesions [8-10] and are usually asymptomatic; however pain, and swelling may occur. Patients may be completely asymptomatic, however, bone expansion and pain can occur. Trismus, dental displacement, and increased mobility of adjacent teeth may eventually be observed[7-15]

RADIOLOGICAL FINDINGS:

Radiographically, the lesion presents as an well defined radiopaque mass, encircled by a radiolucent halo related with the base of the tooth or teeth. Depending upon the formative phase of the lesion, the radiological appearance and clinical presentation can change, prompting an incorrect finding of osteoma or osteoblastoma. Different highlights that can in the long run be seen on radiographs incorporate root resorption, destruction of the periodontal tendon space [2,7], and attack of the root waterways. [3]

HISTOLOGICAL FEATURES:

Histologically, cementoblastoma is characterized by tissue layers that are similar to cement [3,13] and, consist of poorly mineralized cellular material with prominent basophilic reversal lines organized in a fibrovascular stroma.

Prominent cementoblasts [12], irregular lacunae [3,8,15], increased activity of cementoblasts and cementoclasts [2], and trabeculae of uncalcified matrix perpendicular to the surface are typical characteristics of this lesion.[16-18]

DIFFERENTIAL DIAGNOSIS:

The most troublesome challenge in the differential determination of cementoblastoma is osteoblastoma. These two tumors may display the equivalent histomorphology [18], yet they vary in their origin [2]. A few authors shield the odontogenic origin as a premise to separating cementoblastoma from osteoblastoma. This is because in cementoblastoma, the lesion is essential for the root structure of the elaborate tooth brought about by neoplastic cementoblasts that produce mineralized material that wires with a tooth root structure [7,17,18]. Affirming this, Cundiff [7] introduced a case in which the development of a cementoblastoma was radiographically followed for over four years. He portrayed uncommon discoveries, for example, a slight development of the periodontal tendon space, until the total expulsion of the tumor when it was 3 cm in breadth. Osteoblastomas are tippically isolated from the nearby tooth by a hindrance that is framed by the periodontal ligament [18]. Segments of tissue that are like nonmineralized cementum that are situated on the fringe of the mass likewise uphold the presence of a cementoblastoma [14]. Both cementoblastomas and osteoblastomas may cause root resorption [18]. Notwithstanding osteoblastoma, the differential conclusion of cementoblastoma should likewise incorporate osteosarcoma [1], osteoma [8], central sclerosing osteomyelitis, osteoesclerosis, and fibrous dysplasia [12,13].

MANAGEMENT:

The recommended treatment of cementoblastomas consists of the surgical removal of the lesion along with the tooth/teeth and/or structures that are affected, followed by complete curettage of the area or the peripheral osteotomy of the entire region [14]. When an early diagnosis is made, the treatment may involve the complete excision of the lesion with preservation of the involved tooth, thorough endodontic treatment [17] and, in some cases, apicoectomy [15]. For those cases in which a late diagnosis is made and the tumor has already achieved major proportions, as in this report, the complete removal of the lesion and associated structures is recommended due to the unlimited growth potential [8,17] and eventual recurrence. In these cases, the surgical procedure must be performed under general anesthesia [12], which ensures a less stressful intraoperative time for the patient and for the surgical team. As we observed in the present case, the initial surgery under local anesthesia resulted in surgical failure because the surgeon was not able to achieve the final objective of the complete removal of the lesion. In addition, the patient was exposed to an unnecessary psychological trauma.

RECURRENCE RATE:

Recurrences are rare if complete tumor enucleation is performed. Brannon et al. [2], stated that recurrence is more common when curettage is performed without the extraction of the involved tooth or teeth. Mandibular expansion and perforation of the cortex are clinical signs of recurrence [2,9]. Studies indicate recurrence between 6 months and 1 year after the initial surgery [14].

CONCLUSION:

Cementoblastoma is a benign tumor with a low recurrence rate but unlimited growth potential. Appropriate treatment consists of the surgical removal, and early diagnosis favors a more conservative surgery with the possibility of preservation of the involved teeth. In cases in which the tumor is detected in advanced stages of development, the teeth should be removed along with the tumor to decrease the possibility of recurrence.

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