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Review Article

A CLINICOPATHOLOGIC REVIEW WITH SPECIAL EMPHASIS ON HYPERCEMENTOSIS VS CEMENTOBLASTOMA

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ABSTRACT

Increased cementum thickness on periodontal ligament leads to hypercementosis. It is an abnormal macroscopic thickening of periodontal ligament on the root surface above and beyond the extent necessary for its normal function. The neoplasm is an rare entity originates from ectomesenchyme of odontoblasts. Clinically found on entire root surface or only on part of root without any signs and symtoms.

Keywords: Hypercementosis, Odontogenic Tumour, Multirooted Teeth, Neoplasm, Cell, Radiographs.

INTRODUCTION

Hypercementosis is an adaptive change in the periodontal ligament characterized by increased cementum thickness on the root surface above and beyond the extent necessary to fulfill its normal functions, resulting in abnormal thickening with macroscopic changes in shape[1]. Hypercementosis is defined as an idiopathic, non-neoplastic condition characterized by excessive buildup of normal cementum (calcified tissue) on the roots of one or more teeth[2].

Benign cementoblastoma is a rare odontogenic neoplasm of mesenchymal origin. The World Health Organization has classified benign cementoblastoma and cementifying fibroma as the only true cemental neoplasms[3].

INCIDENCE

The cementoblastoma, or “true” cementoma, a neoplasm of odontogenic ectomesenchyme, is a relatively rare lesion comprising1% to 6.2% of all odontogenic tumors[4]. Its estimated incidence is less than 1 case per million populations per year[5]. This neoplasm of functional cementoblasts forms a large mass of cementum or cementum-like tissue on the tooth root.

CLINICOPATHOLOGICAL FEATURES

Hypercementosis is a non-neoplastic condition in which excessive cementum is deposited in continuation with the normal radicular cementum[6,7]. It is widely accepted as an age-related phenomenon. Hypercementosis may be evident on the entire root or only parts of a root. In multirooted teeth, it may be confined to one root or may be present on more than one[6,7] . It presents with no clinical signs or symptoms.

Apart from the idiopathic nature of hypercementosis, this condition is associated with several local factors, more commonly periapical pathosis and systemic factors in which a generalized pattern of the condition is seen[7,9].

Cementoblastomas are large bulbous mass of cementum or cementum like tissue on roots of teeth. The cell of origin is cementoblast. Clinically it causes bony expansion. The commonest site is the posterior region of the mandible The lesion is slowly growing, starting at the apex of the tooth, it is usually painless and the associated tooth is vital, and as it matures it obliterates the outline of the root on the x-ray where there is always a radiolucent margin surrounding it. it occurs more commonly under the age of 20 years. The mandible is 3 times likely to be affected as the maxilla and the most frequently affected tooth is the first molar[10].

RADIOGRAPHIC ANALYSIS

Radiographically, hypercementosis presents with an altered root structure caused by the excessive build up of cementum around all or part of the root is evident. The affected teeth demonstrate a thickening of the root surrounded by a radiolucent periodontal ligament space with an adjacent intact lamina dura[7]. Radiographically, hypercementosis is an occasional finding. The radiolucent shadow of the periodontal membrane and the radiopaque lamina dura are always seen on the outer border of hypercementosis, enveloping it as seen in normal cementum[6].

Cementomas are an occasional finding on the dental x-ray, they pose a challenge for the dental practitioner in their diagnosis and management. In their early stages (osteolytic phase) they present as a radioluscent area in relation to the apices of teeth. Radiographically, most cementoblastomas exhibit a central opacity surrounded by a radiolucent halo, but they rarely may be purely radiolucent. This could be mistakenly diagnosed as periapical pathology. They could also render dental extraction an unpleasant experience if not planned properly.

DISCUSSION

Hypercementosis has an idiopathic nature, this condition could be associated with several local factors, more commonly periapical pathosis. Hypercementosis is a non-neoplastic condition in which excessive cementum is deposited in continuation with the normal radicular cementum[6,7].

True cementoma is a slow growing odontogenic tumor that arises from the mesenchymal tissue, exactly from cementoblasts. It is a rare lesion, first described in 1930 by Norberg[12] Patient usually present with pain and swelling in the involved area; more than 50% of patient are aged under 20 (75% aged < 30) and the lesion is located in mandibula in more than the 70% of cases (with a predominant location at first molar and second premolar). The pathognomonic rX appearance of true cementoma is very useful to make a differential diagnosis with other periapical radiopacity like cementoblastoma, ostoblastoma, odontoma, periapical cemental dysplasia, condensing osteitis and hypercementosis[13].

Many of the cases have exhibited signs of local aggressiveness and destruction, including bony expansion; erosion of cortical plates; displacement of adjacent teeth; maxillary sinus involvement; invasion of pulp chamber and root canals; and extension to and incorporation of adjacent teeth[13].

Cementoblastoma and hypercementosis are lesions associated with tooth roots that may in some circumstances challenge the clinician on their diagnosis. Although hypercementosis and cementoblastoma are typical conditions with distinct clinical evolution, atypical cases may present diagnostic difficulties. Because cementoblastoma is a neoplasm with unlimited growth potential, the usual treatment is complete surgical removal[9,12] while a conservative treatment is recommended for hypercementosis.

CONCLUSION

We have discussed the overlapping clinicopathological & radiographic features which helps us to distinguish between cementoblastoma and severe hypercementosis of the jaws which helps the clinicians in arriving at proper diagnosis & treatment.

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