CASE REPORT

Hypercementosis: a rare finding in a patient with systemic lupus erythematosus

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SUMMARY

Hypercementosis is excessive deposition of non-neoplastic cementum over normal root cementum, which alters root morphology. This cementum may be either hypocellular or cellular in nature. The aetiopathogenesis of hypercementosis is ambiguous. Although most of the cases are idiopathic, several local and systemic factors are also linked to this condition, such as Paget's disease, acromegaly, vitamin A deficiency, etc. We report two rare cases of hypercementosis associated with systemic lupus erythematosus, not previously described in the literature, and also discuss the possible aetiopathogenesis.

BACKGROUND

Hypercementosis is a non-neoplastic condition characterised by excessive deposition of cementum on the roots of teeth.¹ It may affect a single tooth or multiple teeth. The condition is asymptomatic and is detected on radiographic examination. Although most cases are idiopathic, several local and systemic factors are linked to this condition.² We report two diagnosed cases of systemic lupus erythematosus (SLE) on corticosteroid therapy who demonstrated hypercementosis of the roots of their teeth.

CASE PRESENTATION

Case 1

A 33-year-old woman, diagnosed with SLE, on corticosteroid and immunosuppressive therapy over the past 3 years, was admitted to the hospital for lupus nephritis. The patient had a medical history of joint pains, rashes over her skin and fever. She was referred for consultation to the Department of Oral Medicine and Radiology for pain in the right maxillary second premolar, which was extensively decayed. An intra-oral periapical radiograph (IOPA) taken to evaluate the periapical status of the tooth incidentally showed thickening of the roots of an adjacent molar. A panoramic radiograph was taken to evaluate the roots of other teeth. Most of them showed increased thickness of roots due to excessive deposition of cementum depicting a generalised thickening and mild interdental bone loss (figure 1).

Case 2

A 29-year-old woman diagnosed with SLE 11 years earlier, who was on corticosteroid and immunosuppressant therapy, presented to our department with upper and lower posterior teeth missing for 1 year. She reported that her teeth had been extracted due to decay. Medical history revealed joint pains,

Figure 1 Panoramic radiograph (case 1) showing generalised hypercementosis.

fatigue, weight loss and rashes over her skin. On intraoral examination, she was partially edentulous with multiple decayed teeth. She also had asymptomatic erosions involving palatal mucosa and mucosa along the residual alveolar ridge with respect to missing left upper premolars. IOPA's of first and third quadrants and a panoramic radiograph were advised to evaluate the status of the remaining teeth. Incidentally, these radiographs showed increased thickness of roots with respect to 15, 17, 27, 34 and 35, with mild periodontal bone loss (figures 2A,B and 3).

INVESTIGATIONS

Serum calcium, phosphorus, alkaline phosphatase levels and thyroid function tests were within normal limits for both the patients.

DISCUSSION

Remodelling of cementum occurs throughout life as part of the physiological process of secondary eruption. According to Dewey KW, hypercementosis is characterised by formation of cementum beyond the physiologic limits of the tooth.² However, there is no quantitative limit to differentiate between the physiological and pathological forms of cementum deposition.³

Hypercementosis is a common finding in the Indian population, usually seen in association with one or more local or systemic causes. The incidence of hypercementosis by race or population group has not yet been established. The most frequently affected teeth are mandibular molar, followed by mandibular and maxillary second premolars and mandibular first premolars.⁴ However, some authors have found premolars to be the most commonly affected teeth.^{1 2}

The aetiopathogenesis of hypercementosis is ambiguous. This condition is idiopathic in most cases, but may also be associated with several local or systemic factors. Based on their findings,

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Figure 2 Intra-oral periapical radiograph (case 2) of the first quadrant (A) and third quadrant (B) showing hypercementosis with respect to 15, 16 and 34, 35.

Humerfelt and Reita² and Azaz *et al*⁵ suggested that apposition of cementum is a phenomenon caused by age. However, cases have been reported in young individuals as well.^{2–6} There are reports of familial cases making hypercementosis an inheritable condition.²

The local factors implicated to cause hypercementosis are occlusal trauma,⁷ inflammation secondary to pulpal or periodontal disease, tooth mobility,² repair of root fracture and transplantation of teeth.⁸ Systemic conditions associated with hypercementosis are acromegaly, goitre, arthritis, rheumatic fever, calcinosis, Gardner's syndrome, Paget's disease and vitamin A deficiency. Most of these conditions show a weak association except for Paget's disease, which is strongly linked to this condition.²

The common systemic factors in both cases were SLE and long-term steroid therapy. Other systemic factors associated with hypercementosis can be ruled out in patients presenting with specific history and clinical findings. Encountering two cases of SLE with hypercementosis raised our curiosity regarding the possibility of an association between these two conditions. However, a thorough electronic search of the English language literature through PubMed using the key words 'hypercementosis', 'increase thickness of roots', 'SLE', and 'steroid therapy' revealed no reported association between hypercementosis and SLE and/or steroid therapy. Local factors present in both cases were periodontitis, deep carious teeth and possible occlusal trauma due to missing teeth. However, the local factors associated with hypercementosis appear to be more significant in case number 2 in comparison to case number 1.

Hypercementosis generally requires no active treatment. However, any interventional dental therapy, be it extraction of teeth, endodontic therapy⁹ or orthodontic therapy,⁵ will require considerable precautionary measures to avoid complications owing to this condition. The abovementioned local and systemic

factors act as a guide to predict the presence of hypercementosis and to help take appropriate measures in order to plan dental treatment and implement it to ensure successful therapeutic outcomes.

Even though hypercementosis has been linked with immune associated conditions such as rheumatic fever and arthritis, no such association has been reported in cases of SLE. In the present cases, it is difficult to find a correlation, as several factors are involved. It cannot be established in these cases whether it is the steroid therapy for autoimmune disorders that caused hypercementosis or the disease itself. Also, it could be attributed to local factors, or be a coincidental idiopathic occurrence. It should also be noted that in patients with SLE, dry mouth or severe systemic disease¹⁰ may predispose to periodontitis or dental caries, which in turn may lead to hypercementosis. These cases have emphasised on a possible correlation between hypercementosis and SLE. In future, it would be helpful for clinicians to explore these findings and open up more avenues on treatment and therapeutic options. It may also enhance our understanding of the aetiopathogenesis or possible relationship between SLE and hypercementosis.

Learning points

- ▶ Hypercementosis can have a possible association in patients with systemic lupus erythematosus.
- ▶ All other local and systemic factors should be ruled before making a diagnosis.
- ▶ No active treatment is required in such cases.

Contributors HS made the diagnosis in case 1 and drafted the paper. NS made the diagnosis in case 2 and drafted the case 2 portion. SM gave his expert opinion in both the cases. KMP assessed both the cases and edited the final draft.

Competing interests None.

Patient consent Obtained.

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Figure 3 Panoramic radiograph (case 2) showing hypercementosis with respect to 17, 15, 27, 34 and 35.

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