

An unusual presentation of peripheral buttressing bone in anterior maxilla: Case report and management

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Abstract

The phenomenon of buttressing bone formation is relatively uncommon in the alveolar bone, more so in the anterior maxilla. In our case, peripheral buttressing bone formation presented as an isolated hard gingival swelling with relation to 21 in a 14-year-old girl. Radiographic presentation was normal with no evidence of bone loss or altered bone density. Therefore explorative surgery was planned. Buttressing bone formation could be appreciated, which also was the cause for swelling clinically. Osteoplasty was done and bone graft placed in the defect. On a subsequent recall visit gingivoplasty was done to reduce gingival thickness to improve esthetics. We report the case for its unusual presentation, its management with follow-up.

Keywords: Buttressing bone, gingivoplasty, osteoplasty

Case Report

A 14-year-old female reported to our clinic with the chief complaint of painless, hard swelling in the gums in relation to the upper front teeth. The swelling was present for 4 years. The patient had consulted a general dental practitioner 2 years back. Details of the treatment availed were not available. But the patient did not notice any improvement after treatment.

On clinical examination, a 1 × 1 cm. swelling was noticed in the marginal and attached gingiva in relation to 21. The tooth was slightly lingually placed. Gingiva over the swelling appeared normal and was clinically devoid of inflammation [Figure 1]. The swelling was bony hard in consistency. Mobility was absent. Probing depth of 10 mm was observed near the distolabial line angle of 21. Intraoral periapical radiograph in relation to 21 and 11 was normal [Figure 2]. Orthopantomograph showed haziness between

21 and 22. Since the clinical and radiographical pictures were inconclusive, it was decided to surgically explore the site.

Blood profile was taken prior to surgery. All the values were within normal limits. Patient was free of systemic illnesses. After obtaining written consent for explorative surgery from the patient, a mucoperiosteal flap was elevated in relation to 11, 21 and 22. We noticed excessive thickening of the labial cortex in relation to 21 extending from the mesial to the distal aspect of the tooth. The thickened labial bone was elevated from the tooth surface, but the height of alveolar bone labially was not reduced. The thickened and elevated labial cortex enclosed an intrabony defect which measured 10 mm on the William's periodontal probe [Figure 3a]. The inner surface of the flap contained thick fibrous granulation tissue and that made the gingival over the swelling appear thick. Histopathological examination of the soft tissue and hard tissue was done and was reported as granulation tissue and as normal bone, respectively. Therefore the clinical picture was suggestive of buttressing bone formation.

Treatment involved osteoplasty in relation to 21 to reduce the thickened labial cortical bone. Cortical demineralised bone graft (Osseo +, Imtec Corp.) was placed in the bony defect [Figure 3b]. Prior to suturing, thick fibrous granulation tissue on the inner side of the flap was dissected and removed and the flap was sutured. Patient was recalled after 10 days and sutures were removed. The swelling had reduced but the gingiva still appeared thick over that region. Gingivectomy and gingivoplasty was done subsequently after about a month to enhance the aesthetics in relation to 21. Frenectomy was also done to correct the gingival pull. The follow-up after 3 months and 1 year showed satisfactory esthetics and no evidence of any recurrence [Figure 4].

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Figure 1: Gingival swelling in relation to 21



Figure 2: IOPA showing normal bone level. Interdental spacing present between 21 and 22

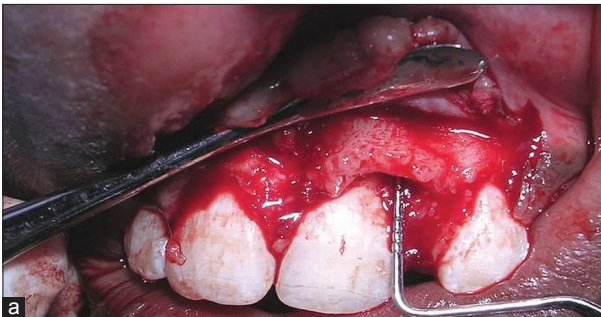


Figure 3: (a) Thickened labial cortex elevated from tooth surface, enclosing a bony defect, (b) Thinned labial cortex with bone graft in place



Figure 4: Three month post-op showing normal size and contour of gingiva in relation to 11,21 and 22

Discussion

Inflammation in bone triggers a positive and a negative response in the form of bone formation and resorption simultaneously.^[1] In periodontitis, both these processes occur at the same time, but most often bone loss results due to predominance of bone destruction over

formation.^[2] Occasionally in periodontitis, bone formation can be robust and in an attempt to buttress bony trabeculae weakened by resorption, peripheral buttressing bone is formed. This causes bulging of bone contour also termed lipping and may sometimes be accompanied by bony defects.^[3]

In our patient, a similar inflammation due to local factors or foreign body must have triggered bone resorption in 21 resulting in the intrabony defect. Considering the young age of the patient, a robust host response might have triggered exuberant bone formation on the labial cortex resulting in buttressing bone formation that clinically presented as a gingival swelling.

Literature search for reports of buttressing bone formation in periodontium and its management yielded few animal studies, an *in vitro* study analysing the prevalence and characteristics of bony exostoses using skull specimens by Horning *et al.*,^[4] and a report by Glickman and Smulow in 1962.^[5] Hence, we would like to present this as a case report along with its management.

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