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Case Report

Managing a case of crowding with associated severe periodontitis

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Introduction

The etiology of crowding is the disproportion between tooth material and jaw size. It may be either due to increased mesiodistal widths of teeth or smaller jaws or their combination. Whenever there is insufficient space for the teeth to fit in the jaws, they may be displaced or rotated.[1,2] The insufficient space for teeth can be gained by extraction, expansion or proximal stripping. The management of crowding is not always a cook book approach. It may be associated with certain factors which complicate the treatment progress like periodontitis, impacted teeth, medically compromised patients, decayed teeth, uncooperative patient etc. The treatment plan and biomechanics have to be modified depending upon the complicating factor. For periodontally compromised teeth, the force applied should be minimum, light and constant.[3,4] The center of resistance of a periodontally compromised tooth shifts apically and produces more pressure and moments (rotational tendency), which complicate the biomechanics.[5,6] Apical shift of center of resistance of a tooth and the moments generated due to a force are directly proportional to the amount of alveolar bone loss. Self-drilling implants have been recommended to be a preferred choice for providing anchorage in periodontally compromised dentitions.

Case report

A 34-year-old patient reported with a chief complaint of long, irregular, front positioning of teeth with speech difficulties. He had a history of generalized aggressive periodontitis that had been treated over an 8-month period with subgingival scaling and root planning, followed by regular periodontal maintenance. Maxillary left first molar (26) was extracted due to periodontal involvement. Maxillary central incisors (11, 21)

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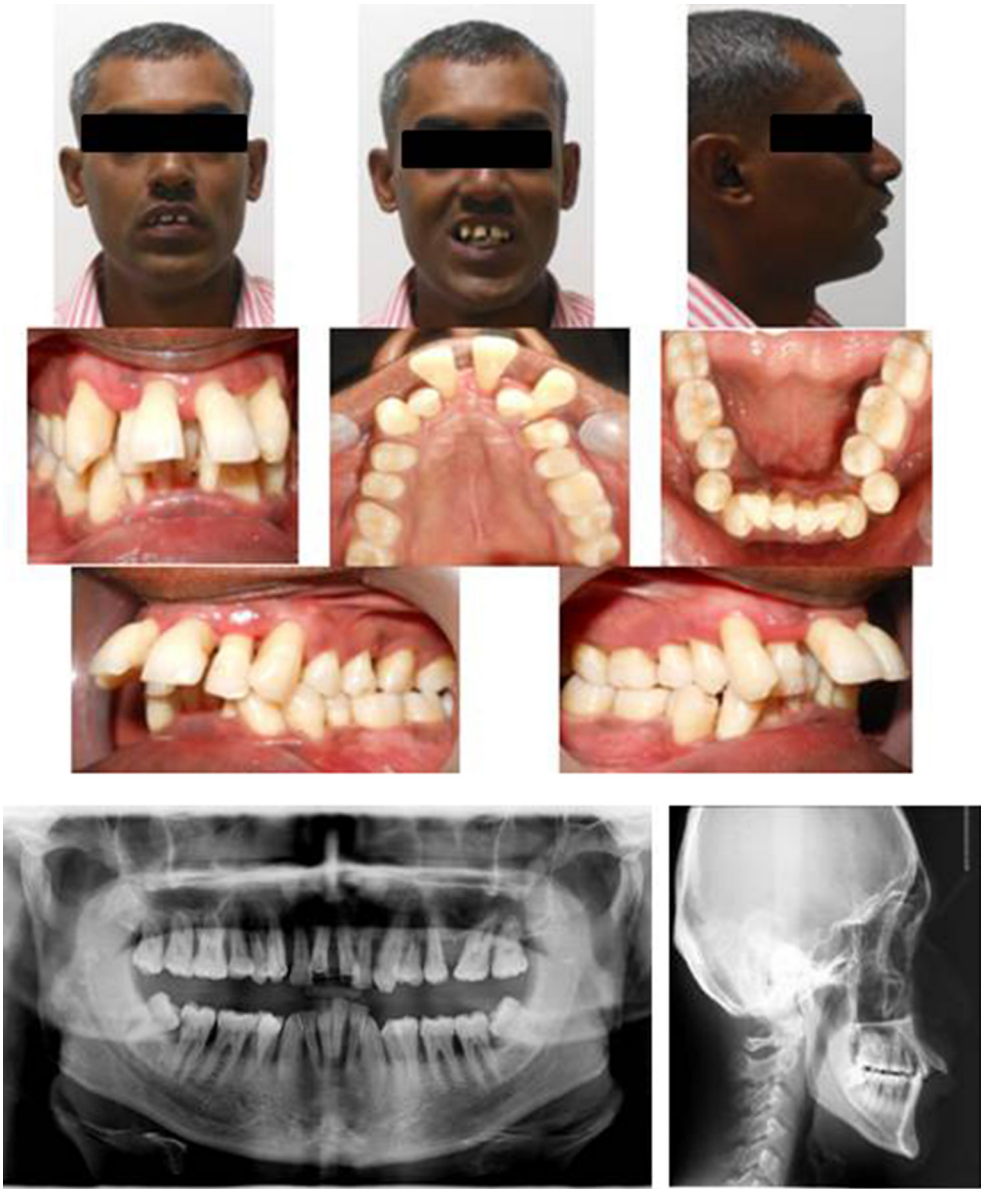

Fig. 1 – Pretreatment photographs, OPG and lateral cephalogram.

were excessively extruded and proclined with grade 2 mobility. He had severe generalized bone loss and gingival recession, but the condition was stable and non-progressive, when he reported for orthodontic treatment. He had difficulty in maintaining oral hygiene due to severe crowding and was also psychologically depressed due to poor facial esthetics (Fig. 1).

Diagnosis

Calculus deposits, gingival inflammation, severe gingival recession, severe bone loss, stable and non-progressive generalized periodontitis, history of extraction of 26, cariously exposed mandibular right second molar (47),, convex profile, lip incompetence, lower lip trap, increased upper incisor visibility, upper midline diastema, U/L severe crowding, maxillary arch constriction, crossbite of maxillary left second and third molar (27, 28), increased overjet (15 mm), upper proclined incisors, molar relation (class I on right side and non-specific on left side), mesial shifting of 27, deep curve of spee, deep bite, average growth pattern.

Treatment objectives

To maintain good oral hygiene, improve facial profile, leveling and alignment, to reduce overjet, to level curve of spee, to achieve acceptable occlusion, intrusion, and retraction of anterior teeth.

Treatment plan

- Necessary blood investigations – NAD
- Consent form was signed by the patient

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