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Case Report

The Vertical Maxillary Excess with orthodontic Camouflage and Plastic Periodontal Surgery to Achieve a Pleasant Smile, A Two Year Follow up Case Report

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Received date: June 15, 2023; Accepted date: June 23, 2023; Published date: June 30, 2023

Citation: Siddharth Sonwane, Shweta RK (2023), The Vertical Maxillary Excess with orthodontic Camouflage and Plastic Periodontal Surgery to Achieve a Pleasant Smile, A Two Year Follow up Case Report, *J New Medical Innovations and Research*, 4(3); **DOI:10.31579/2767-7370/045**

Abstract:

Background

The most difficult task for an orthodontist is to develop a harmonious smile, particularly in "gummy smile" or "vertical maxillary excess" instances. Intrusion or orthognathic surgery is used to address these types of problems. An intrusion is the most suitable approach, which is associated with buccal cortical bone thickening and decreases clinical crown length. The primary goal of this case report is to compare the effects of plastic periodontal therapy following an incursion.

A Case Report

A 35-year-old female presented with the primary complaint of forward-placed teeth and excessive gummy presentation. The interdisciplinary with a bimaxillary dentoalveolar protrusion and excessive gingival display ("gummy smile") or vertical maxillary excess is described by intraoral, cephalometric, and model analytic studies.To correct excessive gingival show caused by high vertical maxillary, the standard therapeutic technique in these situations entails extraction of the first premolars and intrusion of a maxillary anterior segment. The anterior intrusion is associated with higher buccal cortical bone thickness and a shorter clinical crown length.

Conclusion

Orthodontic intrusion and retraction alone do not alleviate the problem of a gummy grin, which necessitates cortical shaving and crown lengthening via cosmetic periodontal surgery.

Keywords: euglycemic dka; sglt-2 inhibitors; gastroparesis; ketones; ketoacidosis

Introduction

Gingival show during a grin can improve facial aesthetics if it is less than 3mm from the margin up to the upper lip line; if it is more than 3mm from the margin up to the upper lip line, it is referred to as a 'gummy smile'. [1-3] (Allen, 1988; Garber and Salama, 1996). The most common causes, according to several researchers, are labial hyperactivity, gingival overgrowth, delayed passive eruption (DPE), vertical maxillary excess (VME), or a combination of these (Robbins, 1999; Monaco, 2004). Schendel 1976 was divided into dentogingival, dental, and skeletal forms based on etiological variables. Furthermore, excessive gummy exposure and short clinical crowns are caused by hyperactivity of the elevator muscle of the upper lip in the dentogingival type; protrusion of the upper anterior dentoalveolar complex in the dentoalveolar type; and vertical maxillary excess or maxillary protrusion in the skeletal type [1-6]. According to the Pek 1992 epidemiological study,7% of young adult males and 14% of adult females aged have gummy smiles [1-8]. Garber and Salam (1996) proposed that orthognathic surgery was a traditional strategy to improving the cosmetic smile in cases of vertical maxillary excess. However, according to Redlich and Ataoglu (1999), maxillary intrusion is the optimum technique to orthognathic surgery. Flower (1999) proposed that simply introducing orthodontics into the mouth worsens the situation of excessive gingival by shortening clinical crown lengths [1-10]. We would like to propose basic ways of managing excessive gingival display with soft tissue management to establish clinical crown length and smile line in this research.

Case study

An etiology and History

A 35-year-old female presented with the primary complaint of forward-placed teeth and excessive gummy presentation. Extraoral examination revealed that the lips were inadequate, with a hyperactive mentalis (Fig. 1). A significant bimaxillary protrusion, a gummy smile, lip incompetence, and short clinical crowns were discovered during an intra-oral examination. The lower dentition had mild crowding.

Diagnosis

Skeletally, there is a maxillary protrusion and a retrusive mandible (see table 1). Dental: Class I molar component relationship; midlines were coincident. When smiling, the face has a convex profile with protruding lips and an exaggerated maxillary gingival show.

Aims of treatment

Skeletal components: Retraction and intrusion of an antero-posterior and vertical component of the maxilla and mandible, respectively, are required to preserve the transverse plane. Retraction and intrusion of maxillary anterior teeth while retaining class I molar relationship are dental components.

Treatment Strategy

The case must be set for orthognathic surgery based on the obtained cephalometric values (table 1).

However, due to the patients' refusal, all first premolar extractions and the.022 X.028 Roath (dentos bracket) bracket systems have been planned for camouflage. Anchorage preparation for intrusion using a transpalatel arch and palatal button (three-piece intrusion mechanics) Osteoplasty and periodontal plastic surgery were planned to provide an attractive smile.

Progression of treatment

Following extraction of all first premolars, the.022 X.028 Roath (dentos bracket) bracket system was bonded on maxillary and mandibular teeth with a molar tube from the first molars to the opposite side of the first molars, and a 014" NiTi wire was used in both archways along with lace back and cinch back distal to the first molars. Every month, in a sequence of 014", the wire changing routine was followed. Upper and lower arches are NiTi, 016" NiTi, and 018" NiTi. Bown's triangle was used to create the individual arch form. In the fifth month after starting treatment. After obtaining levelling with 019x.025" NITI wire, and.019x.025" SS were used to express torque, walking off canine and segmental retraction were employed to check levelling and alignment. After obtaining the class I canine connection through distalization, space was produced distal to the laterals and used for anterior intrusion using three-piece intrusion mechanics (TMA.019X25 wire). Intrusion and retraction were achieved with brief clinical crowns and gummy exposure in the 18th month; however, as the cortical thickness progressed, clinically increasing gummy thickness and greater gum exposure were observed (Figure. 2). A case was set up for both osteotomy and crown lengthening (periodontal plastic surgery) to reduce gum thickness and enhance

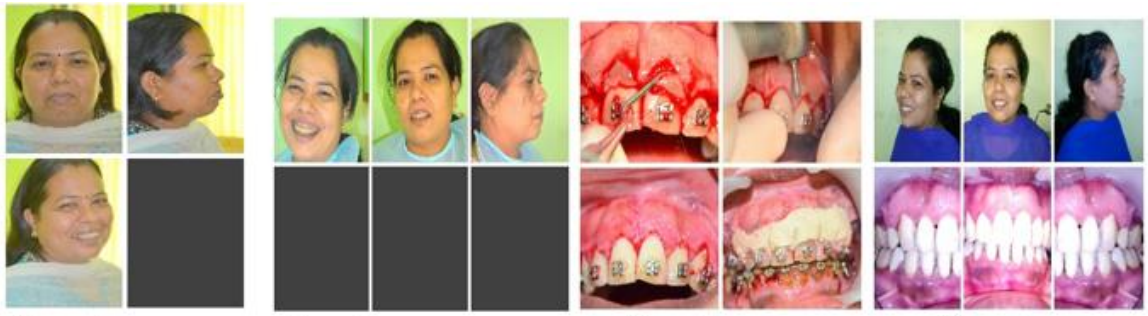

Figure.1 figure.2 figure.3 figure.4

figure.5 figure.6 figure.7

In the twenty-first month, lateral cephalograms were obtained, software tracings were performed, and hand superimpositions were performed. The permanent retainer was bonded and debonded with ultrasonic tips, and a residual composite was removed (Figure. 5, comparing pre- and post-treatment).

Discussion

Vertical maxillary excess, orthognathic surgery (Lefort I), and anterior intrusion are the two procedures for treating gummy smiles. The anteriors' intrusion triggers buccal cortical bone deposition, and clinical crown shortening can exacerbate gummy exposure. Orthognathic surgeries are difficult treatments, and patients are hesitant to accept them. [11-13]. Extrusions of molars are the best approach proposed in the management of gummy smiles in adults (Engel 1984); nonetheless, they are the most difficult and least stable (McDewel 1991). As a result, in our case, we chose anterior intrusion for stability, followed by molar extrusion. Several researchers (Ricketts RM, Bench RW 1979) have proposed that molar extrusion is the best surgical treatment for a gummy smile with the least stable outcome and the most difficult to achieve. As a result, Proffit WR and Fields HW 2000 proposed that anterior intrusion is easier to perform, and gingival countering facilitates the formation of its attractive smile augmentation [13-14]. The fundamental disadvantage of conventional

intrusion mechanics (the three-piece arch approach) is the extrusion of molars or anchorage teeth (Burstone CR 1977). Extrusion of maxillary molars causes mandibular rotation and chin retrusion (Melsen B, Agerbaek N, Markenstam G et al., 1989; Burstone CR et al., 1981) [14-15]. In our situation, we consolidated the lateral segment until the canine and palatal buttons were incorporated and a standard intrusion technique, such as the optimum force of Burstone CR et al. (1977), was created. To overcome the associated disadvantage, 80 gm of intrusion force was used on 4 upper incisors, and 3 mm of true intrusion (Gianelly AA, Goldman HM et al. 1971, Melsen B, Agerbaek N, Markenstam G. et al. 1989) was obtained without significant root resorption or vitality problems during the active treatment period. Buttress bone development principles demonstrate that reinforcing bone production occurs in a buccal alveolar bone as a result of strong occlusal stresses (Glickman, Smulow et al., 1965). The majority of investigations have suggested that such bone growth happens to reinforce bone trabeculae (Matthews GP et al., 1933). Furthermore, mechanical stimulus has a substantial effect on bone remodelling; when higher mechanical loads (0.25-0.40%) occur, bone hypertrophy with increased lamellar bone develops (Marx RE, Garg AK. et al., 1998), [14-16]. Buttress bone production occurred in our case as a result of an intrusion mechanism, resulting in a short clinical crown, and enhanced gingival display could be attributable to gingival hyperplasia. Thus, both periodontal plastic surgery (genioplasty) and anterior osteoplasty were performed to achieve a beautiful smile and occlusion (Figures. 6 and 7).

Conclusion

Finally, the buttress bone development and short clinical crown were the linked, infrequent side consequences of anterior teeth orthodontic intrusion. To develop a beautiful smile, a specified surgical protocol must be followed in order to raise the clinical crown and eliminate excessive gingival exposure. Furthermore, an anterior intrusion results in the upper lip falling without tension, indicating that the approach offered is a viable resource for aesthetic changes in patients with gummy smiles.

Acknowledgement

we would like express our soul hearted gratitude to our chairman, Mr Gaurav tiwari sir, mansarovar dental college Bhopal

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DOI:10.31579/2767-7370/045