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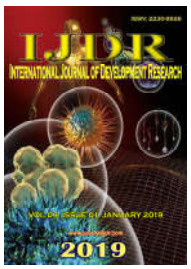

ORIGINAL RESEARCH ARTICLE OPEN ACCESS

SUPERNUMERARY TEETH CASE TREATED WITH ATYPICAL EXTRACTION

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ABSTRACT

This report describes the treatment of a 23-year-old man presented with bimaxillary dental protrusion, severe crowding complicated by the presence of two supernumerary teeth and class II division 1 subdivision right malocclusion. The patient had gingival recession in maxillary central incisor, and the option of extraction this tooth followed by space closure, with the substituting of the central incisor by the supernumerary tooth, was chosen.

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INTRODUCTION

Presence of one or more supernumerary teeth is one of the common findings in orthodontics patients since supernumerary teeth can cause a tooth size arch length discrepancy, crowding and other problems related to malocclusion. Extraction of supernumerary teeth is the treatment of choice in most of cases. But it is to be noted that supernumerary teeth can be used beneficially in some patients where indicated. Decisions about the direction of treatment usually are based on several factors: periodontal biotype, type of malocclusion, space conditions, supernumerary teeth width and root length, and shape (Janardhann Kumaresan and Tamizharasi Senthilkumar, 2014). The present case, extraction of the right maxillary central incisor presented a gingival recession and substituted for the supernumerary tooth was a solution. From an orthodontic perspective, the extraction of second supernumerary tooth can provide the space and opportunity to alleviate the dental protrusion without extracting other teeth. However, this approach requires the supernumerary tooth to assume the functional and esthetic role of central incisor. Therefore, the objective of this article was to demonstrate this situation with a clinical patient and discuss the advantages and disadvantages of this approach (Guilherme Janson *et al.,* 2010).

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Diagnosis and Etiology: A 23-year-old man was brought to the Department of Orthodontics at Monastir dental clinic (Tunisia). His chief complaint was esthetics because of protrusion and crowding. Facial photographs showed a convex profile with lip incompetence resulting from bimaxillary dental protrusion (Fig. 1). He had a Class II Division 1 subdivision right malocclusion with a palatally blocked-out maxillary supernumerary tooth, the right maxillary central incisor presented gingival recession, with a higher gingival level than the adjacent teeth. He had 10 mm of maxillary crowding and 6 mm of mandibular crowding, with a maxillary midline deviation (Fig. 2). The panoramic radiograph showed generalized horizontal bone loss in the maxillary anterior region, four wisedom teeth were avulsed (Fig.3). Cephalometric analysis showed a skeletal Class I malocclusion with an ANB angle of 3°. The patient also exhibited a vertical dysplasia with a GoGnSN angle of 40° with extremely protrusive maxillary and mandibular incisors ((I/F:120°, IMPA:100°) (Fig. 4).

Treatment objectives: The primary objectives were to resolve the patient's crowding and excessive lip protrusion and to improve his facial appearance. The maxillary anterior gingival margins would need to be leveled, and the maxillary right central incisor gingival recession would need to be addressed, to establish acceptable anterior dental esthetics.

Treatment alternatives: Based on the objectives, 3 treatment options were proposed.

Figure1. Pretreatment extraoral photographs

Figure 2. Pretreatment intraoral photographs

Figure3. Panoramic radiograph

Figure 4. Lateral cephalometric radiograph

Figure.5. Space closure

Figure.6. Progress intraoral photographs

The first one consisted of extracting the 4 first premolars to relieve the crowding and dentoalveolar protrusion followed by extraction of supernumerary teeth. A disadvantage of this option was that it would commit this patient to have poor periodontal status in the maxillary anterior region, gingival contour, and margins are critical and not always easy to control. The second option consisted of extracting of supernumerary teeth; however, this extraction would have allowed only minimal reduction of protrusion. Also the anterior periodontal health result would be another problem (Robert *et al.,* 2002). The third option consisted of extracting the right maxillary central incisor which substituted for the supernumerary tooth followed by extraction of the second supernumerary teeth and interproximal reduction in lower arch (Robert *et al.,* 2002). The space gained from the extractions must be used to alleviate the crowding rather than for incisor retraction and midline correction. This option seemed to be the most plausible, because the palatal supernumerary tooth was large mesiodistally, and they could easily be contoured as central incisor. It would be moved into the central incisor position, and composite buildup would transform the the palatal supernumerary tooth into central incisor. The patient preferred this option, because fewer teeth would be extracted, and the overall esthetics would be easier to manage (Kyu-RhimChung *et al.,* 2011).

Treatment progress: After completing the initial preorthodontic procedures, extraction of the maxillary central incisor was requested. The extraction of supernumerary tooth was reported. When the central incisor was extracted, the labial bone was lost as expected, and a significant vertical and buccolingual appeared. The first molars were banded, and pre-adjusted 0.022 × 0.028 in brackets were placed on all remaining teeth. Prosthetic maxillary central incisor was fixed to the arch wire at the extraction site. The palatal supernumerary tooth was moved into the central incisor position. After that the hail supernumerary tooth was chosen to be extracted. Space closure was accomplished with rectangular 0.019 × 0.025-in stainless steel arch wires and intramaxillary elastic chains (Fig.5). The anterior extraction spaces were partially closed, leaving well distributed interproximal spaces to be filled by composite restoration of the supernumerary tooth and the maxillary lateral incisors (Fig.6). The bone defect was filled progressively, while the supernumerary tooth were moved into the central incisor extraction site. Class II correction was accomplished using Class II elastics coupled with rectangular stainless steel wires. Crowding and protrusion in lower arch was alleviated by interproximal enamel reduction. At the end of orthodontic treatment, gingivectomy and direct composite buildup of the maxillary lateral incisors and supernumerary tooth transformed them into central incisor.

RESULTS

The patient shows a broad symmetric smile with his lips closed at rest, and his midlines are aligned with each other and his face. Favorable facial changes were observed with reduction of the biprotrusion and attainment of passive lip seal. Intraorally, there was dramatic improvement in dental esthetics. The arch length deficiency was eliminated in both arches, satisfactory tooth alignment was obtained, and overbite and overjet were improved and a class I relationship was obtained. The posttreatment panoramic radiograph shows minimal horizontal or vertical bone loss, slight root blunting, despite the extensive tooth movement and lengthy treatment time (Fig 8). The patient was pleased with the final results.

Figure 7. Posttreatment facial photographs

Figure 8. Posttreatment intraoral photographs

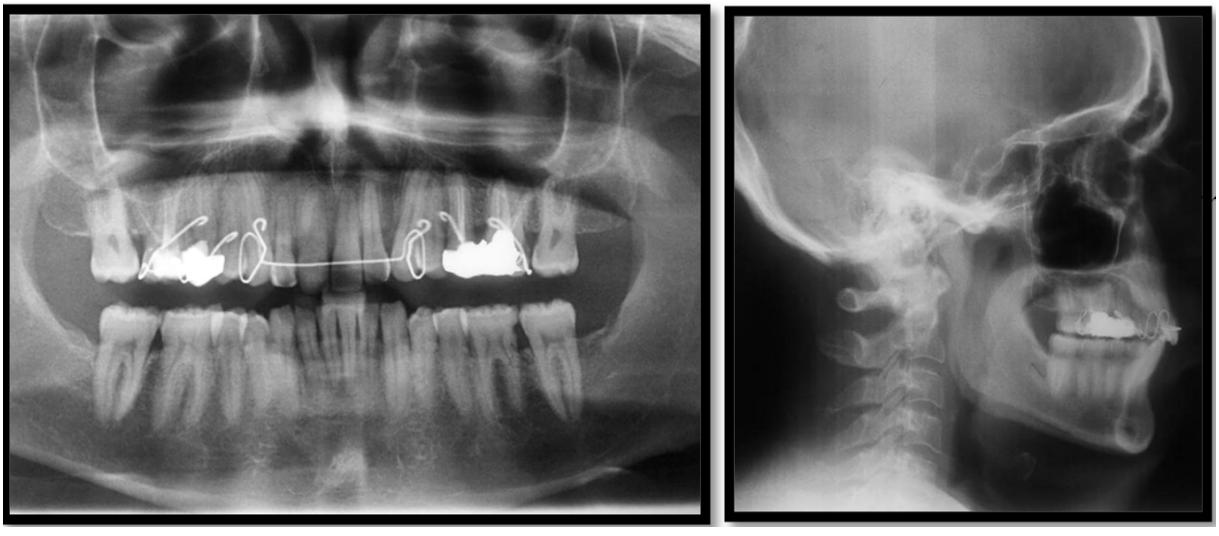

Figure 9.Posttreatment radiograph

DISCUSSION

Bimaxillary dental protrusion has traditionally been treated with premolar extractions. However, this patient also had severe crowding and midline discrepancy combined with presence of supernumerary teeth and advanced periodontal loss in the maxillary anterior region. It is difficult to address this combination of problems with conventional orthodontic extraction. Additionally, the patient had a wide Supernumerary tooth, measuring 9 mm. These characteristics and the concern about anterior esthetics suggested the option of extracting the maxillary central incisor and closing the spaces by substituting the supernumerary tooth for the central incisor. Supernumerary teeth in most of the cases are indicated for extraction. However in this case it was used to replace a maxillary central incisor with severe periodontal disease (Robert *et al.,* 2002). So treatment planning in orthodontics is based up on variety of parameters. Treatment planning in any case depends on the individualized problems and not discussed in general for all patients. Extraction of teeth in orthodontics is based up on a number of factors like dental variables, cephalometric variables, and facial variable. Supernumerary teeth are not beneficial to the patient most of the times because when retained they could cause an increase in tooth material, crowding and loss of space for alignment in orthodontics patient. But there are some conditions where a supernumerary tooth could be used beneficially for orthodontic patient (Ofer Sarne *et al.,* 2018). An atypical extraction combination was suggested: extracting the maxillary central incisor, and supernumerary tooth. This solution seemed feasible because it produced the space necessary to alleviate crowding, retract the protrusive incisors, correct the midline discrepancy, and achieve a Class I canine and molar occlusion (Hua *et al.,* 2008). In addition to the unorthodox extraction pattern, maximum anchorage mechanics were necessary to alleviate the crowding while maintaining a significant amount of extraction space to retract the anterior teeth. Mechanics included a transpalatal arch. The anterior teeth were retracted more than 5 mm. Overall, the results were favorable to all concerned. His teeth were aligned in a Class I occlusion. The anterior teeth were retracted, producing a more esthetically pleasing profile with a decrease in lip incompetency and protrusion, and an increase in chin contour. A slight amount of anterior root resorption was observed along with a similar amount of horizontal bone loss; however, the patient's periodontium remains healthy. It was believed that this treatment plan, although more ambitious than others, would eliminate the crowding and reduce the protrusion, thereby effecting a major facial change (Yijia *et al.,* 2017).

Conclusion

Extraction of the maxillary central incisors is not a usual treatment protocol in orthodontics. However, in some patients with advanced periodontal loss of the maxillary central incisors, this might be a good alternative to preserve tooth structure and avoid permanent prostheses as long as the patient's diagnostic (GuilhermeJanson *et al.,* 2010). Presence of supernumerary tooth in an orthodontic patient can be treated either by extraction or beneficial utilization of the same depending up on the demands of the treatment plan. One should not miss the benefits of having a supernumerary tooth whenever it is possible to utilize them in a favorable way (5).

REFERENCES

Janardhann Kumaresan, Tamizharasi Senthilkumar, 2014 Supernumeray teeth-to extract or to retain in orthodontics-two case reports, Jident Issue 2 VOLUME2.

GuilhermeJanson, Danilo PinelliValarelli, Fabrício Pinelli Valarelli, Marcos Robertode Freitas and Arnaldo Pinzan. Atypical extraction of maxillary central incisors. *American Journal of Orthodontics and Dentofacial Orthopedics***,** October 2010, Pages 510-517.

Robert I. Schacter, DDS, MS a and Warren M. Schacter, DDS, MSb. Treatment of an adult patient with severely crowded bimaxillary protrusive Class II malocclusion with atypical extractions

Am J Orthod Dentofacial Orthop 2002;122:317-22.

Kyu-RhimChung, HyeRanChoo, Jin-HwaLee, Seong-HunKim. 2011. Atypical orthodontic extraction pattern managed by differential en-masse retraction against a temporary skeletal anchorage device in the treatment of bimaxillary protrusion. *American Journal of Orthodontics and Dentofacial Orthopedics,* Pages 423-432.

Ofer Sarne, Yehoshua Shapira, Sigalit Blumer, Tamar Finkelstein, Shirley Schonberger, Naomi Bechor/ Nir Shpack .Supernumerary Teeth in the Maxillary Anterior Region: The Dilemma of Early Versus Late Surgical Intervention. *The Journal of Pedodontics,* 2018, Vol. 42, No. 1, pp. 55-61.

Hua Xi Kou Qiang Yi Xue Za Zhi. Atypical orthodontic treatment of severe Class II malocclusions in the adult. J Mass Dent Soc. 2008;57(2):26, 28-9.

Yijia X, Zhou H, Qing Z, Fuwei L^3, Yang Z, Xiaomei X, Lin Z, Pu Y. 2017. Comprehensive assessment of atypical-extraction orthodontic treatment. *West China Journal of Stomatology,* 35(2):176-182.

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