

Case Report

Definitive prosthesis on deciduous dentition in an Unclassified Syndrome with multiple impacted teeth

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Abstract: Multiple impacted permanent teeth are uncommon and were rarely reported in the literature till date. This clinical report describes a multidisciplinary approach for the oral rehabilitation of a young adult patient with an undiagnosed syndrome presenting multiple impacted permanent teeth, retained deciduous teeth and false gingival enlargement. The specific objectives of this treatment were to enhance esthetics and restore the masticatory function while importing a positive psychological impact to the patient. One of the most demanding aspects essential to long-term success of such cases involves the regular monitoring of the patients, while simultaneously fulfilling aesthetic and functional parameters.

Keywords: Impaction, gingival enlargement, full mouth rehabilitation, fixed partial denture, definitive prosthesis.

INTRODUCTION

Failure of permanent teeth to erupt without any known cause is a seldom occurring phenomenon with reports of the same in literature. It may occur due to an impaction, primary retention, or secondary retention [1]. Dental impaction has been reported to affect as much as 25% to 50% of the population [2]. Potential factors related to impaction include crowding, maxillary transverse deficiency, missing incisors, and physical impediments such as odontomas, or supernumerary teeth [3-5]. Certain syndromes demonstrate a higher incidence of impacted teeth [6, 7]. The most common syndrome is cleidocranial dysplasia [7]. Gardner syndrome, Down syndrome, Aarskog syndrome, Zimmerman-Laband syndrome, Noonan's syndrome, GAPO syndrome, Osteoglophonic dysplasia, Osteopathia striata, Osteopetrosis, Progeria, Singleton-Merten syndrome, Yunis-Varon syndrome, Nonhereditary pathoses such as endocrine disorders are found to be associated with multiple impacted teeth. However, in the present case the clinical features do not correlate to any of the above said conditions and thus is left unclassified.

CASE REPORT

A 19 year old female patient reported with the chief complaint of missing teeth. According to her dental history, few lower teeth were intentionally extracted 4years earlier in an attempt to enable the

eruption of the permanent teeth. Her medical history and physical examination revealed no suggestive abnormalities to any systemic disease or condition. During the clinical examination, height, weight of patient, circumference of the head, clavicles, vertebral skeleton, skull and chest were examined and were found to be normal.

Ophthalmological and neurological examination of the patient revealed no pathological symptoms. Intelligence was subjectively normal.



Fig-1: Intraoral photograph showing bulbous gingival overgrowth and retained primary dentition

Intra oral examination showed remarkable gingival inflammation with bulbous gingiva (figure 1). Bone sounding and examination of the dimensions of the gingiva revealed no abnormal actual increase in the

size of the gingiva thus was classified as false enlargement which was caused due to underlying bulbous appearance of bone as a result presence of multiple impacted teeth i.e, false enlargement. 6 deciduous teeth were retained in the maxillary arch (figure 2) and 3 in the mandible (figure 3). Other than the maxillary central incisors none of the permanent teeth were found to be erupted. Panoramic radiographs and full mouth series of intra-oral periapical radiographs were advised and revealed the presence of 23 impacted teeth in the maxilla and mandible. No other family members were found to have similar abnormalities. The preoperative planning was conducted with a diagnostic wax up to have an idea of the treatment objective and the end result, harmonious with biological and functional aspects.



Fig-2: Maxillary arch with 8 retained deciduous teeth



Fig-3: Mandibular arch with 3 retained deciduous teeth



Fig-4: Panoramic radiograph showing multiple impacted permanent teeth in the maxilla and mandible

Treatment procedure

As a first step of treatment in consideration of the patient's periodontal status and gingival inflammation, full mouth subgingival scaling and root planning in two divided appointments was performed which showed complete reduction in the gingival inflammation and improved health of the supporting tissues. A biopsy of the bone was done to determine if there was any bony pathosis underlying the cessation of eruption but the results of the biopsy showed no abnormal pathological changes.

In the mandibular arch, radiographic evaluation revealed the presence of permanent successor molars in the right path of eruption and partial root resorption of the deciduous molars. Therefore in anticipation of successful eruption of permanent molars an interim prosthesis was planned in this region, which would improve both the esthetics and masticatory function of the patient for a period of 6 months. However during this period as there was no observable change in the position of the permanent teeth. Considering the crown root ratio and the periodontal condition of the retained teeth a final removable partial denture was planned and fabricated (figure 5).



Fig-5: Restored mandibular arch with removable partial denture

As none of the maxillary permanent successors were in close proximity or in the path of eruption and also considering the age of the patient, a definitive treatment including root canal treatment for permanent central incisors as well as deciduous teeth and fixed crowns and bridges was planned. Root canal treatment of all the retained maxillary deciduous teeth was done using pre-curved hand instruments, keeping in view the thickness of the dentin in deciduous dentition. Root canal treatment for both the maxillary central incisors was planned to improve the prognosis, as they are not in line with each other. Later, the final metal ceramic prosthesis was constructed (figure 6). The patient was satisfied with the prosthesis and reported a significant improvement in the masticatory function (Figure 7). Supportive periodontal care was advised and recall appointments were scheduled for every 3 months during the first year and every 6 months thereafter.



Fig-7: Fabricated maxillary prosthesis



Fig-7: Extra-oral photograph of the patient after rehabilitation

DISCUSSION

The impacted or mal-erupted tooth and its associated pathosis provide a great diagnostic and technical challenge to the dentist. Multiple impacted teeth by itself are a rare condition and are often found in association with syndromes. In some cases, however, impaction of multiple teeth is not accompanied by a fixed complex of symptoms and thus remains unclassified. Till date only a few cases of non syndrome multiple impacted teeth have been reported in literature [8-10]. Yusof and Awang [10] in 1990 has done a systematic review and reported that there is a predilection of non-syndrome multiple supernumerary teeth in the mandible. In the previous reports, many idiopathic multiple impacted supernumerary teeth or a combination of permanent and supernumerary teeth were reported. In our case, the complete set of permanent teeth other than maxillary central incisors were impacted, which is a rare condition and had not been reported till date. In the previously reported cases orthodontic and surgical corrections were done as only a few number of teeth are impacted. However in this case as multiple number of teeth are missing, orthodontic management becomes a very complex scenario and also the patients unwillingness for such a procedure restricted the treatment options,.

In the present condition the false gingival enlargement was also of significant importance, as it poses a diagnostic problem to any dental professional. Treatment of this type of condition by resective osseous surgical procedures can improve the esthetics of the patient. However, it was not advised as it can significantly reduce the periodontal support to the remaining primary teeth.

Considering the patient's age and the dental condition, replacement of the missing teeth requires meticulous treatment planning. Definitive replacement of the primary dentition should be planned in consideration of the possible eruption of the successor permanent teeth. In the lower arch neither implants nor could fixed partial denture be opted due to the presence of impacted teeth in close proximity and lack of periodontal support for the abutment teeth. However, in the maxillary arch, none of the successor impacted permanent teeth are in proper physiologic position or in the line of eruption. Therefore, definitive replacement with fixed prosthesis was planned and showed successful occlusal rehabilitation along with patient satisfaction even after a maintenance period of 2 yrs.

CONCLUSION

The objectives of a multidisciplinary team should be to provide improved esthetics, function, and occlusal stability. The development of different treatment options, which take into account growth and development of the dentition, the eruption pattern along with compliance of the patient, can lead to a treatment plan that can produce acceptable interim results, which do not compromise any future definitive care.

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