REVIEW ARTICLE

ORTHODONTIC EXTRACTION: AN UPDATE

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ABSTRACT :

Orthodontic extraction can be carried out in those patients where crowding is present. Treatment of a crowded arch requires space gaining. And this space gaining is achieved by the extraction of the one or more teeth. Treatment of malocclusion is achieved by to ways- Extraction or non-extraction modality.

KEYWORDS: Orthodontic extraction; malocclusion.

INTRODUCTION :

Extractions were reintroduced to orthodontics in 1930's and with the advent of Begg's technique reached its peak in 1960's. With the current soft tissue paradigm, the number of cases treated with extraction has reduced taking into consideration the profile of the patient. Different extraction protocols have been followed for successful orthodontic treatment[1]. Since the early days of orthodontics the need for tooth extractions in certain orthodontic situations has been discussed.

In the early twentieth century, Angle favored non extraction orthodontic treatment based on the concept of the occlusion line[2]. He believed it possible to correctly position all of the 32 teeth in the dental arches and, as a result, the adjacent tissues (tegument, bone and muscle) would adapt to this new position. Grounded in this belief, he taught his students and treated numerous cases[3].

Several papers in the literature have suggested first premolars as the major indication for extraction for orthodontic purposes. The choice of these teeth is justified because of their proximity to anterior and posterior teeth and because they occupy an intermediate position in the arch, which facilitates correction of crowding, dento-alveolar protrusion and midline deviations[4].

Fig No. 1- Pre-treatment photograph without extraction

Fig No. 2- Mid-treatment photograph with extraction

FACTORS AFFECTING THE DECISION TO TOOTH EXTRACT

It is important to consider the patient as a whole in treatment planning. Medical history, attitude to treatment, oral hygiene, caries rate and the quality of the teeth are important. Patients with cardiac anomalies are at risk of complications during orthodontic treatment and consultation with a cardiologist is important. If necessary, extractions should be covered with appropriate antibiotics and impacted teeth may be best removed rather than aligned as traction to unerupted teeth may pose an increased risk to these patients. Class I malocclusion

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is defined by the British Standard institute in year 1983 by its incisor relationship, which is the lower incisal edge that lies on or below the cingulum plateau of the palatal surface of the upper incisors. Its incidence among the Caucasian population was found to be the highest among other types of malocclusion with 60% according to Todd and Dodd, whereas in the Sudanese population it was found to be 49%5 which is still highest among the other malocclusions but less compared with Caucasians. Class II is defined by the British Standard Institute as the lower incisor edges lying posterior to the cingulum plateau of the upper incisors. In cases of class II division 1 malocclusion, there is increase in the overjet and the upper central incisors are usually proclined[6].

Class II division 1 is considered to affect approximately 15 to 20% of Caucasians, and around 38% of Sudanese population, while class II division 2 affects approximately 10% of the Caucasian and 3% of the Sudanese population[5].

Extraction of teeth for orthodontic treatment is just a tool, not necessarily good or bad. When used right they improve the stability and quality of the treatment, used wrong they can create devastating functional and esthetic results. Orthodontic tooth extraction should always be planned with consideration of the width and length of the face. Success of Orthodontic treatment will depend on detailed medical and dental history, extraoral / intraoral examination, diagnosis and treatment planning following a systematic way approach for treatment, looking at the oral hygiene, carious activity, periodontal involvement, prognosis of impacted teeth, supernumeraries, and Hypodontia[7].

Although Calvin Case was opposed to Angle's ideas and proposed treatment with extractions in the early twentieth century, its indications were still far fewer than those observed nowadays. In his study, extractions were hardly ever indicated in cases of Class III malocclusion, whereas in the present study, extractions in Class III patients occurred in 47% of cases. In addition, in these patients, maxillary first premolars were the most frequently indicated teeth to be extracted (31.3%). This finding can most likely be explained by the consolidation of surgical techniques for treatment of Class III malocclusion[8]. In order to assay the extraction-nonextraction dilemma in orthodontics fully we need to put this decision in the context of the important diagnostic decisions in clinical orthodontics. In my view and experience, there are 4 critical sequential questions in orthodontic treatment planning:

1. Is orthodontic treatment necessary?
2. Is jaw surgery necessary?
3. Are tooth extractions necessary?
4. Is fixed retention necessary?

The first question, acknowledging the elective nature of most contemporary orthodontic treatment, may be elusive to business-minded practitioners who treat nearly all who visit their offices. There is a fashion trend today that celebrates dental spacing and smile irregularity as a desired sign of natural and wild beauty in youth culture. Gap-toothed women abound among American and European fashion models. Thus, some adolescents today would prefer to keep their imperfect and individualistic smiles, rather than undergo orthodontic corrections. Furthermore, in some cultures, the esthetic preference favors what orthodontists would call malocclusion[9].

CONCLUSION :

Orthodontic extractions play a major role in the treatment of malocclusion in those cases where tooth material is more than the jaw material. Proper knowledge of case analysis of these things is very important for better results.

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