MANAGEMENT OF CLASS II MALOCCLUSION - ORTHODONTIC CAMOUFLAGE TREATMENT: CASE REPORT

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ABSTRACT
In Class II malocclusion, a variety of treatment modalities have been presented in the literature. The camouflage orthodontic is a treatment alternative, involving extraction of premolars. In the absence of an important mandibular crowding, the interdental relations can be obtained by numerical reduction in the upper arch, resulting in a Class II molar and a Class I canine relationship. It is important to choose ideal maxillary incisor position over Class I posterior occlusion. This case report presents one such case of a 15 year old female, having a skeletal Class II malocclusion with labial ectopic upper canines. The selective extraction of maxillary first premolar was considered an acceptable compromised.

Following treatment, great improvement in the aspect of profile and smile were achieved and there was an increase in the patient’s confidence and quality of life.

Key words: therapeutic class II occlusion, camouflage treatment.

INTRODUCTION
Class II malocclusions represent a great percentage of skeletal discrepancies. The prevalence reported in literature varies: Emrich and Brodie - 14% among children who are between 12 and 14 years of age [1]. The treatment of these disorders depends on diagnostic, age (growing or non-growing patients), the skeletal pattern and patient compliance [2].

Increasing number of adult patients has become aware of their orthodontic problem and is demanding quality treatment, in the shortest possible time with increased efficiency and reduced costs [3].

The main possible approaches to treat a skeletal Class II malocclusion are: modification of growth, camouflage (displacing the teeth to obtain proper functional occlusion despite the skeletal discrepancy) treatment and surgical repositioning of the jaws [4]. The methods for correcting class II malocclusion include: extraoral appliances, functional appliances and fixed appliances associated with class II mechanics [5].

The camouflage treatment in class II malocclusion includes extractions of 2 maxillary premolars or 2 maxillary and 2 mandibular premolars, depending on the dento-alveolar characteristics [6, 7].

CASE REPORT
A 15 year old female reported to the Orthodontic Clinic with the chief complaint of ectopic maxillary canines. No relevant medical history was reported.
The extra-oral examination (Fig.1) revealed an oval shape of the figure, a mesocephalic head shape, a mesoprosopic asymmetrical face, a mild convex profile, an acute naso-labial angle. The smile was unaesthetic. The patient showed a good range of mandibular movements and no temporo-mandibular-joint symptoms.

The intraoral examination revealed that the patient had a Class II molar relationship (half cusp on the left and full cusp on the right), an increased overbite and labial displacement of the maxillary canine.

The space for the canine alignment was decreased. Both upper and lower arches were asymmetric. The discrepancy in the upper arch was 6 mm and in the lower arch was 4 mm.

Radiological examination revealed a sagittal discrepancy (ANB = 5°), with a retrognatic mandible (SNB = 77°) and the proclination of lower incisors (IMPA = 100°).

The soft tissue cephalometric analysis (Arnett method) indicated: soft tissue A-TVL = 0 mm, upper lip anterior-TVL = 3 mm, lower lip anterior- TVL = 1 mm, soft tissue B- TVL = -8 mm, soft tissue Pog-TVL = -5 mm and MX1-TVL = 9 mm (Fig. 3).

Treatment goals were: obtaining good
facial balance, obtaining optimal static and functional occlusion and stability. The treatment objectives which would lead to an overall improvement of the hard- and soft-tissue profile and the facial aesthetics were: to correct the canine displacement, to correct the upper incisors long axis, to achieve an ideal overjet and overbite, to achieve a flat occlusal plane, to achieve an adequate functional occlusal intercuspidation with a Class II molar and a Class I canine relationship.

Treatment plan:
- Extraction of maxillary first premolars
- Alignment and leveling of the arches
- Closing the extraction space by retraction of the maxillary canines followed by the incisors
- Levelling the curve of Spee
- Settling the occlusion
- Retention

For anchorage control it was used a transpalatal bar with Nance plate in the upper arch and in the lower arch first molars were banded. Both arches, from second premolar to second premolar were bonded with a Roth slot .022x .028 inch preadjusted fixed appliance.

DISCUSSIONS

Treatment of a Class II patient requires careful diagnosis and a treatment involving aesthetic, occlusal and functional considerations [8]. When comparing the alternative treatment plans, it also is important to evaluate treatment efficiency, determined by whether and to what extent the treatment goals were met by improving dental relationship and dento-facial aesthetics [9]. One of the camouflage options available is the extraction of the maxillary premolars, correcting the canine to a normal class I relationship, leaving the molars in a class II relationship [10].

In the absence of an important mandibular crowding, the interdental relations can be obtained by numerical reduction in the upper arch. When correcting Class II malocclusion in the permanent dentition, close attention should be paid to three aspects: the A-P horizontal relationship of the maxillary incisor, the transverse midline relationship of the maxillary incisor, the vertical position of the maxillary incisor. The A-P horizontal relationship of the maxillary incisor is advocated by Arnett (1999) in the soft tissue cephalometric analysis (STCA) [11]. The position of maxillary incisor should be at 9 mm (female) and 12 mm (male) reported to the true vertical line (TVL) in order to obtain a proper facial aesthetic profile. Regarding transverse midline relationship of the maxillary incisor (Kokich 1999), a small midline deviation (1-2mm) can be acceptable as long as the midline is vertical and a canted midline is unacceptable even if coincident with the facial midline [12].

In the case being reported it was decided to hide the mild skeletal discrepancy by extracting the maxillary first premolars and retracting the anterior teeth to improve the profile of the patient and to obtain proper functional occlusion. When taking the decision to extract the following aspects were evaluated: the current position of the maxillary incisor 9mm from TVL, maxillary crowding: 6mm.

The predicted movement in order to align and level the upper arch was 3mm forward resulting in a predicted maxillary incisor position of 6mm from TVL which was considered unacceptable. Because of the facts mentioned before and because of the mild crowding in the lower arch the decision was to extract only the first two upper premolars. The changes with the treatment developed where achieved just a result of dental and accompanying soft tissue profile changes and there was no skeletal change (Fig. 4, Fig. 5, Fig. 6).

The problem to discus in the cases with extraction is the stability of the treatment
result. G Janson (2004) reports that treatment with two maxillary premolar extractions gives a better occlusal result than treatment with four premolars extractions [10].

A number of studies undertaken in recent years have led to the common conclusion that the extractions of premolars in any sequence, if undertaken after a thorough individual diagnosis, are unlikely to lead to negative profile effect [13, 14, 15, 16].

CONCLUSIONS
1. Orthodontic treatment goals usually include obtaining good facial balance, optimal static and functional occlusion and stability of the treatment results.
2. Extraction of premolars, if undertaken after a complete diagnosis, leads to good profile changes and an overall satisfactory facial aesthetics.
3. It is very important to evaluate the aesthetic of the soft tissues and to choose ideal maxillary incisor position over Class I posterior occlusion.
REFERENCES