

The third lower molar in orthodontic therapy

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Abstract:

Introduction: The M₃ eruption is according with mandibula arch growing and facial typology. This teeth, especially M₃ lower created many problems in orthodontic field, because in most of cases isn't enough space on the arch. Some crowding cases are treating by extractions (Pm₁, Pm₂, and M₁) and there is a possibility to create a space for normal eruption of M₃. In other cases the extractions are good solutions for crowding but are necessary to have a germectomy at third lower molar.

Aim: The authors were tried to analyze the role of the lower third molar in crowding cases at hipodivergent cases treated by SWT method.

Material and method: The study comprised 50 subjects (28 girls and 22 boys) aged 17 – 19, having a sever crowding. The patients were clinical and radiological examined.

Results: During the life the long and the lenth of the arch decrease inspite of any orthodontic treatment even with extractions, and the pacients presented some crowding in lower incisive area. We recommande to make germectomy at M₃ lower to avoid a relapse.

Conclusions: The evolution of lower M₃ is difficult and the chances to remain on the arch are less, especial at patients with crowding. At the patients with extractions and hipodivergent typology is important to eruption guidance of the M₃.

Key words: M₃, extraction, crowding, eruption, deficiency

Introduction

The third molar's germ is situated at the beginning in ascendant ram of mandibula. This germ makes an angle about 40 – 50 ° with the occlusal plan (Fig.no.1).

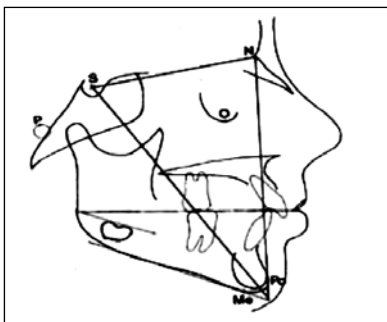


Fig. no. 1

In this period occur a forward movement of the germ and an anterior increasing of the mandible [2]. The result will be the progressive position of the third molar at the right level (Fig.no.2).

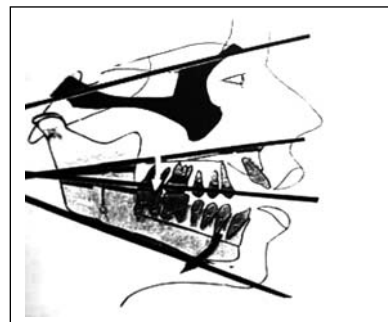


Fig. no. 2

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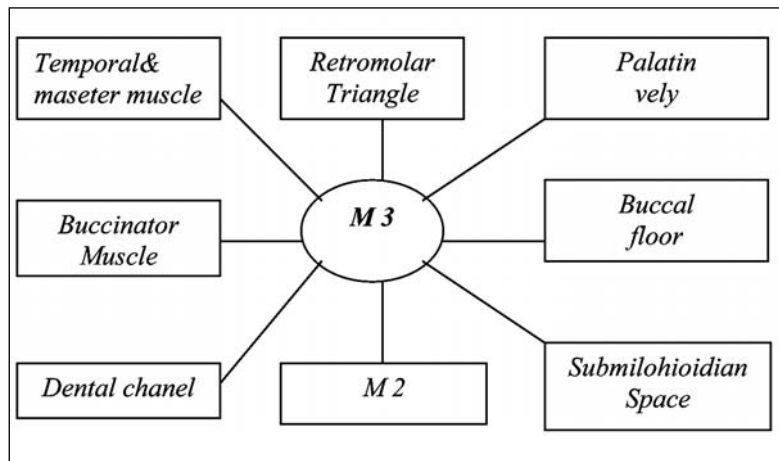


Fig. no. 3

The anatomical reports of the third molar were presented by Delibros and Bery and here they are (Figure no.3).

Starting from the superposition's method, Björk shows the interdependences between increasing of the bases, direction of the tooth eruption and crowding [1].

The third lower molar eruption is in direct relationship with the direction of condils growing, so with the mandibular typology. In the case of anterior rotation, lower incisors erupt through buccal and M₃ has also a mesial evolution [3]. In the case of posterior rotation, the lower incisors tend to move through oral, so M₃ has a vertical eruption (Figure no.4).



Fig. no. 4

When the dento – alveolar arch is in the inside of ramus 3.8 – 4.8, the lower third

molar will move possibilities of eruption [4]. In opposite, if the dento – alveolar arch is along of ramus, the lower third molar will be blocked (Figure no.5).

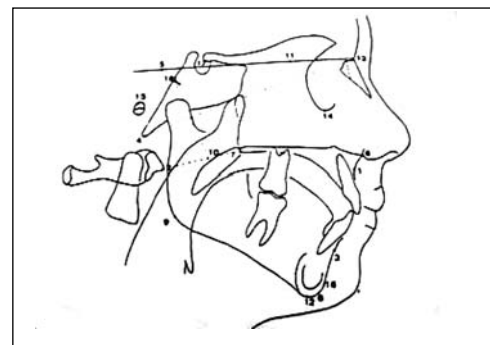


Fig. no. 5

The physiological mesial movement is caused by:

- abrasion of proximal and occlusal tooth' surfaces.
- occlusal forces with postero-anterior direction
- muscular forces

The therapeutically mesial movement caused by: Pm₁, Pm₂, M₁ and M₂ extraction when is not use the whole space for DDM treatment.

In these cases, each millimeter of mesialisation will increase with 10 % the chances that the third molar will erupt [5].

In 75 % from the DDM (crowding) treat-

ed by lower first premolar, M_3 have the possibilities to erupt and to be in normal occlusion [6].

In more extraction cases, the possibilities of the M_3 eruption are only 50 %.

In opposition with the extraction method, Viazis [6] observe that M_3 remain included in spite of any treatment.

Aim

The aim of this research was to investigate the possibility of lower M_3 eruption at

the patients with crowding DDM, treated by Straight – wire technique and extractions.

Material and method

The study comprised 50 subjects (28 girls and 22 boys) aged 17 – 19, having a sever crowding. The patients were clinical and radiological examined (Figure no.6 a,b, Figure no.7).

After some measurings: the upper and the lower arch perimeter, the inter premolar



Fig. no. 6 a, b

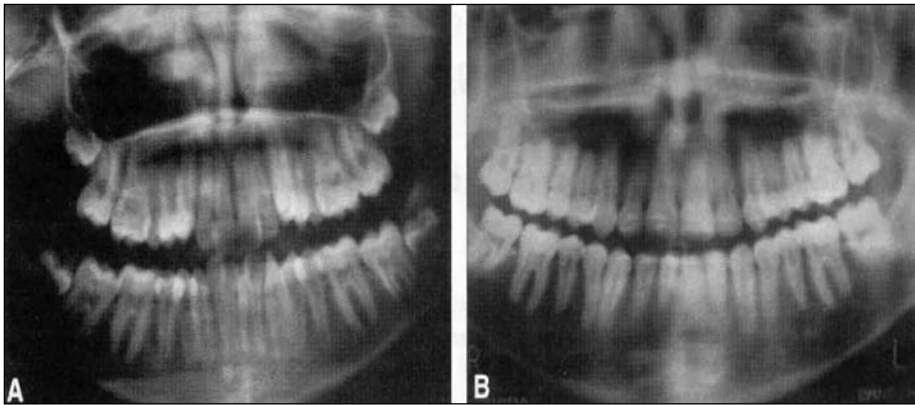


Fig. no.7

and inter-molar widths and Merrifield analyze, we decided the extractions.

The extractions were in according with the decay's problems or following the total space analyzed by Merrifield (Figure no.8, Figure no.9).

The extractions were:

- the lower first molars in 24 cases;
- the lower second premolars in 18 cases;
- the lower first premolars in 8 cases.

Results and discutions:

After two years of the end of treatment we evaluated the cases and we saw the results: at 13 cases with M_1 extraction the leveling is good and M_3 had erupted normal on the arch (Figure no.10).

At 4 cases with Pm_2 extraction we observed a small frontal crowding and we must practice M_3 germectomie (Figure no. 11).



Fig. no.8



Fig. no.9



Fig. no.10



Fig. no.11

At 5 cases with Pm1 extraction is presented a relapse and the eruption space for M3 is not enough.

Many studies had shown at during the life the long and the length of the arch decrease inspite of any orthodontic treatment even with extractions, and the patients presented some crowding in lower incisive area[7].

Conclusions

The evolution of lower M3 is difficult

References:

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and the chances to remain on the arch are less, especial at patients with crowding.

At the patients with extractions and hipo-divergent typology is important to eruption guidance of the M3.

The posterior discrepancy indicates some distal extractions (Pm2, M1) and these situations are favorable for M3 eruption.

In very difficult cases, with space deficiency more than 4 mm is indicated 4 extractions on the arch (Pm) and also M3.

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