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LEP-S/B x 3rd. Slow Sagittal Bilateral Expansion by Veltri for the Correction of the 3rd Classes in Definitive Dentition “Controlled Maxillary Distraction”

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Summary

The correction of III skeletal and dental classes by hypoplastic maxilla during the growing period can be achieved in a good way using 3 types of strengths with a A-P direction to improve the forward growing of the maxilla and to control the growing of the mandible.

Introduction

A lot of clinical studies, among all there's Delaire's studies (1971)(1), report orthopedical results about forward growing of the maxilla (Di Malta 1977, Nanda 1980, Tanaka 1993)(2, 3, 4). The sagittal deficit of the maxilla is present in 50% of the III class patient, but just in a half of them it is responsible for the skeltal deformities. To the maxilla-deficit it is associated a more or less light mandibular prognatism that is necessary to contrast till the stop of patient growing.(5)

Materials and Methods

It was selected a sample of young patients with a middle skeletal age of 9 years and half in females, 10 years and half in males.

The skeletal age was determined by studying the carpal index.

The patients were 34 in all, in particular 24 females and 14 males; all of them were III skeletal class. All the subjects showed a third skeletal class (ANB e SNA).

The patients were studied collecting an orthognatic check up by tele Rx in A-P and L-L projection, OPT and the carpal index.

The cephalometric study was completed by photos to compare the aesthetic changes of the soft tissues after the terapy.

In the appropriate cases it was applied a transverse expansion of the maxilla at the same time of the beginning of the sagittal strengths.

Two strengths of these are in a forward direction to improve the growing of the maxilla anteriorly, one, otherwise, is in the opposite direction to controll the vertical length and the mandibular prognatism.

It was applied:

1) Delaire face mask anchored on an arch by multiple bands on the following teeth : 16, 26, 13, 23. Then it was applied a forward protraction strength for 20 hours per day with an inferior direction, 30 degree, under the occlusal plane.

The protraction strength is produced by 21 NiTi coil springs generating a constant and programmable power of about 900 gr.(6, 7)

These coils are our own make and they are still not present on trade.

2) Sagittal expensor, by Veltri, to obtain a bone distraction with bone neoapposition in the site of application of the strength.

The neoapposition is well recorded by Rx film.

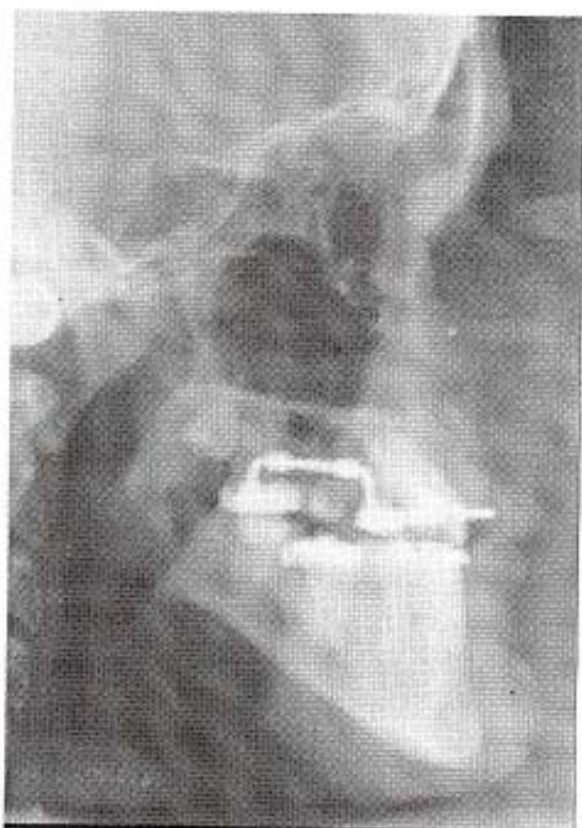


Photo n.1: Tele L.L. Controlled Maxillary Distraction

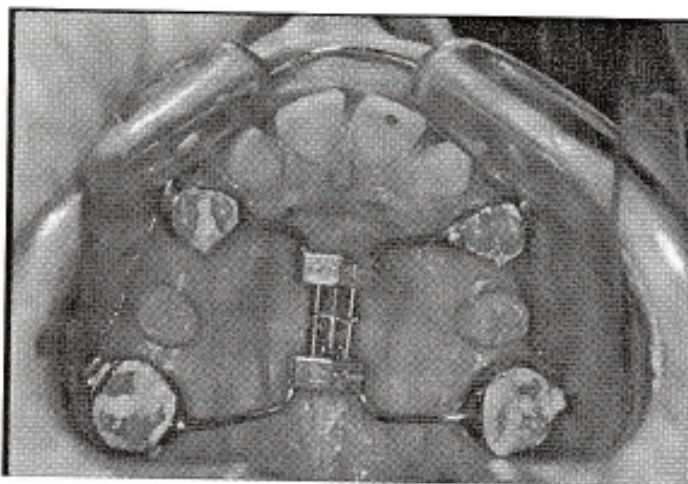


Photo n.2: Palatal view Controlled Maxillary Distraction

The sagittal expander by Veltri (LeoneA0629-08\11) is characterized by 4 bands on teeth 17, 16, 26, 27 or on 15, 16, 25, 26, according to the different molar classes, and linked to a central frame, including an expansion screw, by 4 iron arms.

The activation of the expander is $\frac{1}{4}$ lap 2 time a day (0,20 per 2 = 0,40). It was possible to demonstrate the distalization of the VI° and VII° teeth with a little loosening of anterior anchorage, clinically not influent. By 4 months it was evident a bone apposition in the distraction area.

3) After completing the teeth bandage were applied intermaxillary elastics of third class type.

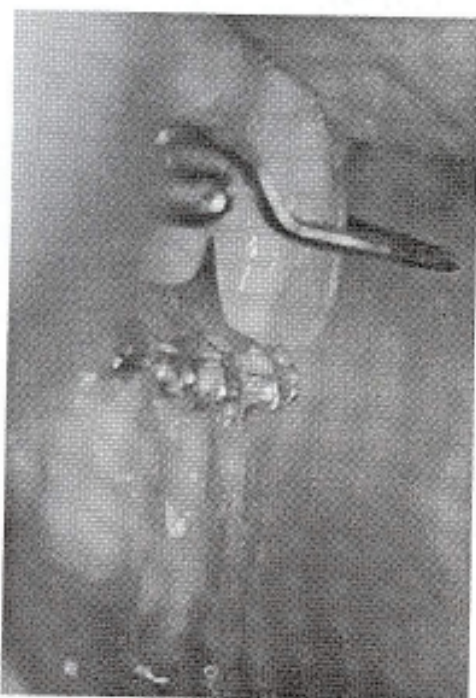


Photo n.3: Sagittal view Controlled Maxillary Distraction

Results and Conclusions

The outcome results are very good. The cephalometric study shows a normal range of ANB and SNA values with a good control of anterior vertical length. The OPT shows bone neoapposition in the site of distraction with an improve of the soft tissues profile of the lower face.

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