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Controlled bilateral or monolateral distalization with Veltri's type sagittal expander for the correction of IInd Angle's classes

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SUMMARY

Upper molar teeth distalizing need in sagittal way - bilateral right or left monolateral right or left rotatory - with controlled strength has brought to design (international patented) and realize by doctor Veltri an expansive screw series.

The new method with the application of "**Veltri's type screw**" follows a precise clinical therapeutical protocol to correct clinical IInd class both bilateral and (or) right or left monolateral malocclusion with planned body shift of dental elements and remodelling dento-parodontal complex.

INTRODUCTION

In the IInd skeletal and dental classes the main target is to key in the Ist Angle's Class the upper 6 and 3 consequently distalizing the maxillary (1-2-3-4-5-6-7).

The presented method offers the possibility to *program distalization* both in sagittal bilateral and right or left monolateral and right or left rotatory way.

MATERIALS AND METHODS

The "Veltri screw" present the possibility to build sagittal expensor according to different clinical needs which are now examined:

1 a) Bilateral IInd class in mixed dentition (8-9-10):

It is necessary to distalize 16 and 26.

The sagittal expensor is built with "Veltri screw" soldered on four bands on 16, 26, 55, 65; a vestibular arch is soldered on 55 and 65 with loops in the area of canine for traction with IInd class anchoring elastics.

A lingual arch on 36 and 46 or 75 and 85 and vestibular hooks for traction with IInd class elastics are built in the lower arch.

1 b) Bilateral IInd class in definitive dentition (8-9-10):

It is necessary to distalize 16 and 26.

The sagittal expensor is built with "Veltri screw" soldered on four bands on 16-26, 17-27 or on 14-24, 16-26.

All upper arch is banded in order to apply IInd class anchoring elastics.

2 a) Right or left monolateral IInd class in mixed dentition (11-12):

It is necessary to distalize the element only in the IInd class key (right or left).

The monolateral expensor is built with "monolateral Veltri screw" soldered on four bands put on 16, 26, 55, 65 three of which stationary (anchorage) and one movable (to be distalized) in addition to vestibular arch with loops for traction with IInd class elastics.

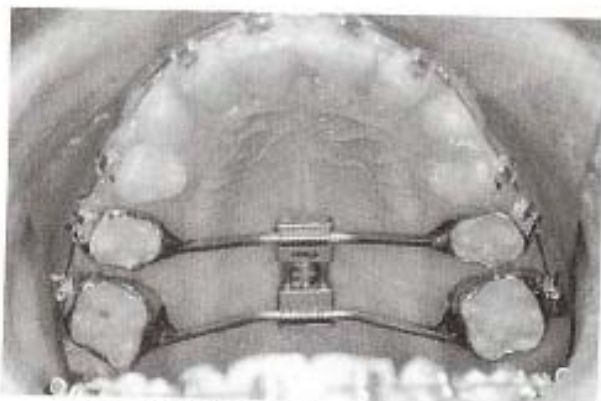
2 b) Right or left monolateral IInd class in definitive dentition (11-12):

It is necessary to distalize only the element in the IInd class key (right or left).

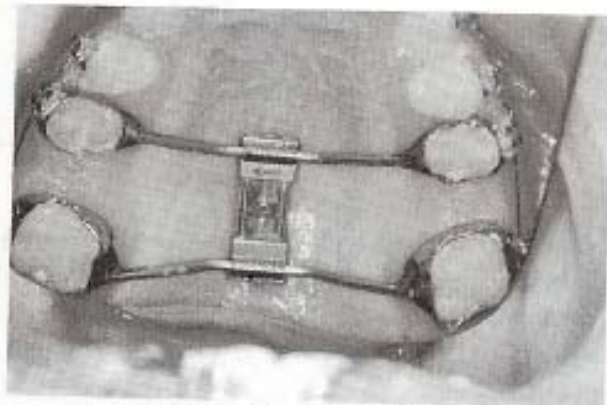
The monolateral expensor is built with "monolateral Veltri screw" soldered on four bands put on four teeth three of which stationary (anchorage) and one movable (to be distalized) in addition to banding with brackets of the two arches for traction with IInd class elastics.

3) Deviation of middle line in definitive dentition because of upper maxillary rotation (12):

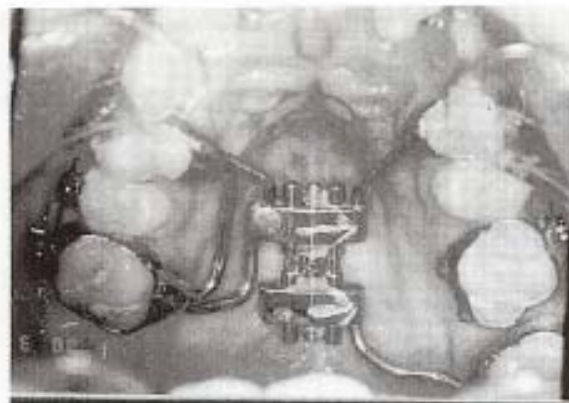
It is necessary to distalize a dental element and to rotate the arch in order to center the middle line.



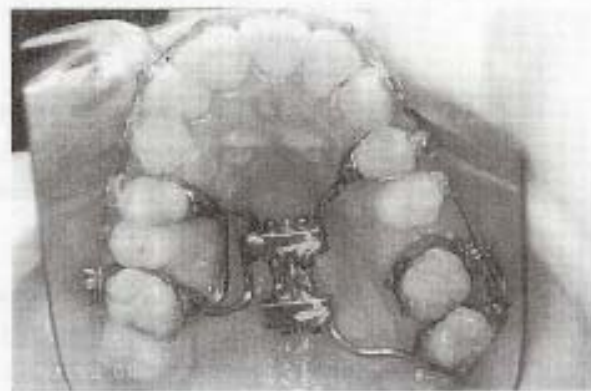
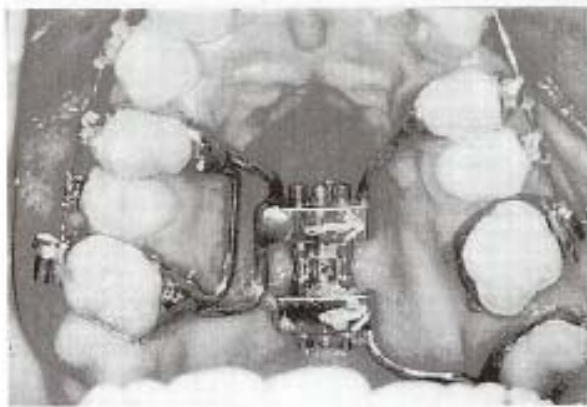
BEGINNING OF EXPANSION



THE END OF EXPANSION



PHASE OF EXPANSION



THE END OF EXPANSION

2) SAGITTAL MONOLATERAL EXPANSION SX

The expander is built with "rotatory Veltri screw" soldered on four bands put on four teeth; in addition to banding of the two arches for traction with IInd class elastics.

4) Monolateral cross:

In case of having monolateral cross (for example 16/46 or 26/36) "the Veltri screw" is applied with bands on three elements which act as anchorage whereas the free arm of the screw is applied on the band and activated on dental element which must overcome the cross.

The activation of these expanders consists in applying 1/4 turn a week that is 0,20 mm or 2/4 turn a week that is 0,40 mm.

Such strenght determines a controlled body shift of upper molar teeth. The body shift of molar tooth is presented by a higher centroid given by screw and their arms characteristics. Over a month a 0.8mm ($0.20 \times 4 = 0.8\text{mm}$) or 1.6mm ($0.40 \times 4 = 1.6\text{mm}$) controlled distalization is applied.

The sagittal expander has been applied on 39 patients (20 females, 19 males) when the permutation is over or in mixed dentition.

We present two clinical cases.

RESULTS AND CONCLUSIONS

The sagittal expander with "Veltri type screw" international patented in its several applications offers a simple and precise method which permits the body

shift of dental element with remodelling of dento-alveolar complex both in bilateral way and direction and in monolateral and rotatory way.

The use of expanders with "Veltri type screw" offers *planned tridimensional expansion of maxillary in the three space directions.*

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