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MARPE INCREASES THE VOLUME AND CROSS-SECTIONAL AREA OF THE NASAL CAVITY

Rapid maxillary expansion is considered gold standard when correction of transverse maxillary deficiency is required. The gains from the expansion go far beyond just correcting dental transverse problems. Improvements in maxillary positioning, increased respiration, and even altered speech have already been scientifically proven. However, in order to obtain such results, this procedure should be performed before the adult phase of the patient, since over the years the suture will calcify, making its opening difficult, and often preventing it. With the advent of skeletal anchoring devices, especially mini-implants, a new modality of expansion arises in adults, which would be the use of an expander associated with mini-implants. In this scenario, questions arise: would it be possible to obtain the skeletal and respiratory results in the adult with the use of these devices? In the search for answers to this question, Korean researchers developed a clinical study[1] with 14 patients (Fig 1). The results obtained with this study demonstrated that the volume and cross-sectional area of the nasal cavity increased after MARPE and were maintained after 1 year of expansion. Thus, the authors concluded that MARPE may be useful in the expansion of the nasal airway.

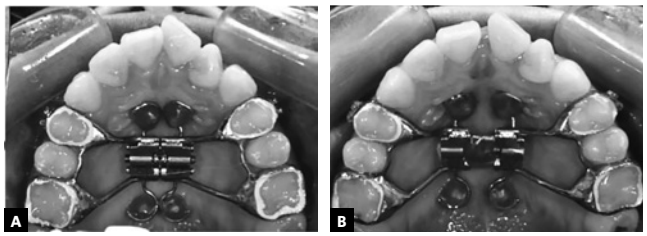

Figure 1 - Maxillary expander associated with mini-implants before (**A**) and immediately after expansion (**B**). Source: Kim et al,[1] 2018.

EN-MASSE AND TWO-STEP RETRACTION ARE EFFECTIVE WAYS OF CLOSING POST-EXTRACTION SPACES

The need to extract teeth when there are cephalometric or dental discrepancies (or both) is already well described and established in the literature. After the extractions have been performed, it is necessary to close the spaces. The space closure phase requires attention, since biomechanical principles must be respected in order to achieve predictable results with minimal side effects. Basically, the mechanics of space closure can be done in two ways: all of the anterior teeth are simultaneously moved backwards (en-masse retraction), or it is performed in two steps, i.e., first retraction of the canines in order to retract the incisors later. If we conduct a survey among orthodontists questioning which retraction technique to choose, possibly many will not know. But: is there a difference? In order to answer these and other questions, Scottish researchers developed a systematic review followed by meta-analysis.[2] The results achieved with this study revealed that both retraction methods (en-masse and two-step retraction) are effective during the space closure phase. The authors also found that the combination of en-masse retraction associated with mini-implants is superior to the combination of two steps, in relation to anchorage preservation and the amount of retraction.

REMINDING OUR PATIENTS ABOUT THE NEED TO SANITIZE THEIR TEETH HELPS IN THE CONTROL OF DENTAL PLAQUE

The installation of an orthodontic appliance is linked to many expectations of the patient and many concerns of the professional. Given that, as already well publicized around the world, the orthodontic treatment reverberates not only on the dental aesthetic question but also on the individual as a whole. Improvements in self-esteem, breathing, quality of life, among others is no longer a surprise to us. However, in order to achieve complete success at the end of a treatment, the patient's collaboration becomes a fundamental part. Among the responsibilities

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delegated to the patient, the maintenance of the correct hygiene is without doubt paramount, since with the presence of the orthodontic accessories the cleaning difficulty increases, causing plaque accumulation and the formation of white spot lesions. Given this situation, what could we do? Would it be effective to remind patients of their hygiene obligations? In the search for answers to this questions, Brazilian researchers developed a systematic review with meta-analysis[3] in which they evaluated scientific evidence on the influence of reminder therapy on plaque index, gingival index and white spots in patients submitted to orthodontic treatment. The authors concluded from this study that reminder therapy is an important strategy in order to control plaque index as well as to reduce the occurrence of white spots in orthodontic patients.

OZONATED WATER REDUCES GINGIVAL INFLAMMATION IN PATIENTS UNDER ORTHODONTIC TREATMENT

As already discussed in the previous summary, the correct sanitization of teeth during orthodontic therapy is an arduous task. Researchers around the world are worried about finding an alternative that can reduce the deleterious effects caused by the buildup of plaque adhered to the surface of the teeth. The presence of plaque leads to gingivitis, a very common situation in orthodontic patients. Except for chlorhexidine digluconate, few products are available to avoid such a situation. From this perspective, Indian researchers set out to assess whether ozonated water would also have this capability. In the search for these answers, they proposed a clinical study[4] with twenty-eight orthodontic patients (Fig 2). The results from this study showed that irrigation with ozonated water promoted significant improvements in gingival inflammation in patients using fixed orthodontic appliance. The authors of the study further point out that this device appears to be a valuable tool in the control of gingival inflammation in orthodontic patients.

THE USE OF EXTRA-ORAL APPLIANCE AFFECTS THE PATH OF ERUPTION OF THE CANINES

The gold standard for treatment of Class II malocclusions with maxillary excess is the use of extraoral appliances. External forces promote a redirection in bone growth by correcting these malocclusions. When applying orthopedic forces, it is necessary to use high magnitude forces in order to achieve orthopedic effect with little or no dental effect. However it is utopian to think that the teeth will not move when orthopedic forces are applied. Based on this assumption, studies have been carried out aiming to evaluate which are the dental movements after application of orthopedic force. Recently, a study[5] was conducted at the University of Tromso in which the canine eruption pathway was evaluated in patients using an extraoral appliance in arches with and without space. The results obtained with this study revealed that the treatment with an extraoral appliance in Angle Class II malocclusion in children affects the eruption of maxillary canines, leaving them to a more vertical direction. The authors point out that this change seems to be related to space conditions in the maxillary arch, especially in the intercanine region, with a greater effect in children with dental arches with space left over than in the presence of crowding.

Figure 2 - Ozone irrigation in split-mouth format. Source: Jose et al,[4] 2017.

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