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### MINI-MAXILLARY PROTRACTOR APPLIANCE: A NEW OPTION FOR CLASS III TREATMENT

The search for an esthetic appliance to treat Class III malocclusion has intrigued researchers for years. More recently, emphasis has been laid on the early correction of this malocclusion with the use of skeletal anchorage, associated with intermaxillary elastics with Class III orientation. Although this technique has revolutionized Orthodontics, there is still a need for surgical intervention. Some patients have accepted this proposal well, and others have not. Therefore, the initial problem goes back to “square one”, raising a new question. How to treat this malocclusion without surgical intervention, but at the same time, without the appliance being anti-esthetic? In seeking improvement in the esthetics of protractor appliances, an infinite number of new designs have appeared, among these the mini maxillary protractor appliance (Fig 1). But would this appliance with reduced dimensions be effective in protracting the maxilla? Searching an answer to this question, Turkish<sup>1</sup> researchers conducted a clinical study, in which they verified the effectiveness of this appliance, in comparison with a control group. The results obtained were encouraging, seeing that this device with reduced dimensions was capable of applying traction to the maxilla, leading to dental and facial skeletal changes. Therefore, this device has become another option for the orthodontist in the early treatment of Class III malocclusion. It is worth pointing out that long term studies must be conducted due to the great potential for relapse of this type of malocclusion.

### MINI-IMPLANT REMOVAL IS A SAFE PROCEDURE AND DOES NOT CAUSE SYSTEMIC BACTEREMIA

In contemporary times we come across patients in a wide variety of age-ranges, malocclusions and health conditions. Years ago, the prevalence was for only young patients with all their teeth present, and in good health. This reality has changed, since adult patients have invaded

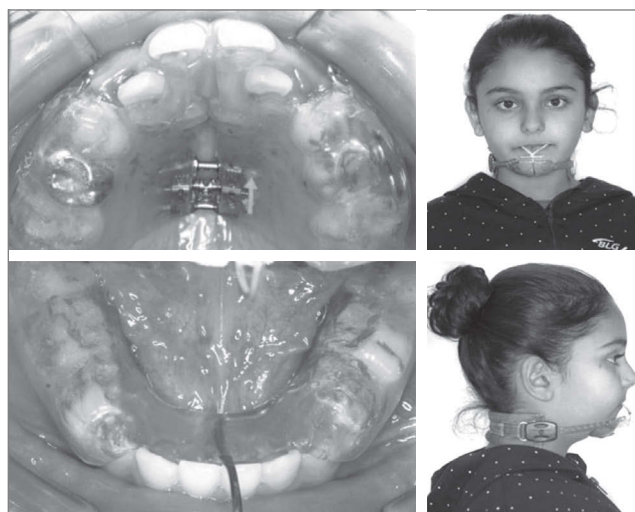


Figure 1 - Intra and extraoral photographs of the mini maxillary protractor appliance used in the study (Source: Celikoglu M, Oktay H<sup>9</sup>).

dental offices, and with them, the most diverse types of local and systemic problems. With these patients, special care must be taken, since systemic problems may be aggravated by intraoral interventions. In this context, special mention is made on patients with cardiac compromise, with whom special care must be taken, particularly with regard to contamination — the so-called transitory bacteremia — while performing dental procedures. The literature has established that in these individuals, when performing more invasive procedures, the use of prophylactic antibiotic therapy is imperative. When we think of Dentistry, it immediately brings to mind that the insertion and removal of mini-implants, undoubtedly is the most common and crucial procedure. But would this procedure be capable of causing bacteremia in the patient, leading to a risk of systemic compromise? In an endeavor to elucidate this question, Greek, Swedish and Dutch<sup>2</sup> joined to conduct a multicentre clinical study, in which they evaluated bacteremia occurring with the removal of mini-implants. The results found in this study demonstrated that the removal of mini-implants does not lead to bacteremia. This result brings us a certain

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measure of comfort, but one must not underestimate the potential of the procedure to cause bacteremia, and each case must be analyzed individually. It is worth pointing out that the authors evaluated only the removal of mini-implants, leaving a gap to be researched, which would be with respect to whether or not bacteremia occurs at the time of their insertion.

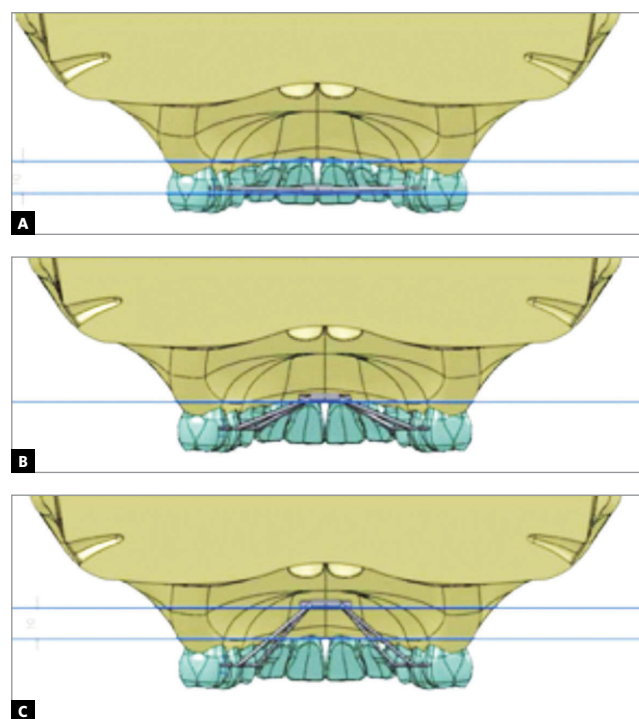
### DOES THE HEIGHT OF THE HYRAX EXPANDER SCREW INFLUENCE THE TYPE OF DENTAL MOVEMENT?

Palatal expansion is an established procedure in orthodontic literature. As we know, its most precise indication is for the correction of posterior crossbites caused by transverse maxillary deficiency. Among the expansion appliances used are the Hass and Hyrax types; the latter with the proposal of facilitating cleaning. However, many dentists attribute a greater dental tipping movement to the Hyrax type. Would it be possible to minimize this dental effect? Could the screw height influence the inclination? To evaluate these questions Brazilian<sup>3</sup> researchers developed a study using finite elements to evaluate the influence of the expander screw height on the dental movement achieved. The height evaluated was below, at the level, and above the center of resistance (Fig 2). The results obtained in this study demonstrated that dental movement is altered according to the expander screw height. The authors pointed out that when more extensive orthopedic results were necessary, the ideal position of the screw would be a little above the center of resistance of the maxillary first molars.

### SELF-LIGATING BRACKETS DO NOT PROMOTE LESS PAIN AND MAKE ORTHODONTIC TREATMENT FASTER

At present, we are experiencing a flood of commercial advertising that alleges the superiority of self-ligating brackets in comparison with conventional brackets. The superiority of these is attributed to a lower level of pain, chair time, and treatment time in general. Many of the advantages attributed to these devices have aroused the interest of orthodontists and patients all over the world. But is there scientific proof of all these advantages? In seeking a response to all these questions, Austrian<sup>4</sup> researchers conducted a systematic review of the literature to verify whether or not there is scientific proof of these parameters. The authors used exclusion

and inclusion criteria of the sample, giving priority to the most well designed studies. After an extensive literature search, they arrived at the conclusion that the superiority of self-ligating brackets to conventional ones could not be affirmed with respect to initial pain, chair time and final orthodontic treatment, because there are no strict scientific studies that support these affirmations. Therefore, it is always important to seek serious scientific references when one thinks about changing conducts in the dental practice.



**Figure 2** - Expansion appliance in: **A**) low position (positioned parallel to the occlusal plane that cuts the crown of the maxillary teeth in their middle portion); **B**) intermediate position (higher, between the plane of the first model and the palate), and **C**) the highest position (closer to the palate).

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