After your doctorate in Araraquara, you began to apply the Segmented Arch Technique. How did that alter your orthodontic life, and what is the role of that philosophy within your practice today? Luiz G. Gandini Junior

I am very thankful to the faculty and friends who welcomed me at Unesp-Araraquara, which was essential to my scientific and personal ascent. Scientifically, I learned and discussed the segmented arch technique (SAT), which was valuable in the understanding I currently have of the biomechanics involved in orthodontics, so that I was able to understand and correct my mistakes. To understand the concept of statically determinate movement and the six geometries of statically indeterminate movement helped me determine the force and momentum produced on each tooth, which can generate desirable and undesirable effects in each activation of the appliance\(^7\). We should consider that much that happens in the use of continuous arches is linked to back-and-forth tooth movements. Thus, in the sequence of wire replacements, we end up fixing the problems we have previously caused, losing time and leading to cases of malpractice. That is eliminated when I apply the concepts and resources of SAT in tooth movement\(^3\). I have incorporated the routine use of a palatal arch and Nance appliance as parts of the two- and three-piece device, using a cantilever, retractions loops, intrusion arch, among other resources, prior to or concomitantly with the use of continuous arches (Fig. 3). The use of the cantilever allows for greater inter-bracket distance and greater activation amplitude using a rectangular loop. Consequently, the force is reduced and control over movement is increased, which quickly corrects the rotation of the canines, without sequelae. In short, after I gained extensive knowledge of SAT, I understand the Edgewise technique much better, and I have more resources to avoid or revert undesirable effects. On the personal side, I learned a lot about teamwork. The attentive manner in which I was treated as a student makes me believe it was a privilege for me to have done my doctorate work in Araraquara. I cannot forget how I was impacted by professor Joel Claudio da Rosa Martins, who gave the sample for my doctorate thesis, and from whom I draw inspiration when I try to be a better professional and when I need to rekindle my dedication and respect for orthodontics.

FIGURE 3 - A, B, C) Correction of rotation in tooth 16, with a palatal arch, using the entire maxillary arch as anchorage, optimizing the effect of biomechanics. D, E, F) Case of absence of lateral incisors: correction of rotation of canines using rectangular TMA wire in a cantilever with rectangular loop, simultaneous with the mesial movement of the crown and root. The use of these resources prevented the application of excessive and undesirable forces on the incisors.
Assembling an orthodontic appliance is a meticulous procedure that requires care. In your view, what are the most critical points of that stage and which can result in time delays and complications during the finishing phase? Roberto Rocha

Finishing is guided by a philosophical principle that should be within each orthodontist: a treatment should not be planned starting from a malocclusion, but rather with a clear for a perfect occlusion. Improving a malocclusion, straightening teeth, is not the true profession of an orthodontist; reaching an occlusion with adequate aesthetics, function and stability is. Therefore, finishing a treatment begins during planning and appliance assembly, and not in the last few months of orthodontic treatment. I believe that bonding is one the main determinants of a good finishing phase. Usually, an orthodontist has a formula for bonding with pre-set heights for each tooth, and uses instruments that use the cusp tip or incisal edges of teeth as parameters. It is as we normally learn: 3.5mm for molar, 4mm for premolars, and so on, varying the magnitude of the numbers depending on the instructor or professional. The use of height measurement instruments makes it much easier, but what truly happens is the establishment of a standard error. It is easy to understand how the error is recurrent, because the parameter is incorrect. What we want to achieve when assembling the appliance is not to level the cusp tips of posterior teeth, but rather to level the marginal crests and contact points. In the case of anterior teeth, in addition to the contact points, were wan to define the ideal overbite, incisal exposure and smile curve\textsuperscript{16,27}. Therefore, these should be the parameters to define bonding height, by combining tooth morphology with the ideal occlusion and best possible aesthetics. I have my own way of assembling the appliance, using an essential principle: individualization (Fig. 4). I regard the first molars as the anchor teeth, for their simple roots and crown, and because they are the first to be set with the bands, when I solder the accessories tangent to the occlusal edge of the band, at the same height as the opposite hemi-arch. I then go on to bonding the second premolars with the necessary height difference to level the marginal crests. For example, if I need to extrude these teeth by 1mm, that will be the height difference to the first molar. I can use any instrument to check, without being

FIGURE 4 - A, B, C Before, during and after evolution of the treatment for dental crowding, in which, although the cusp tips of 16 and 14 were leveled before treatment, there was need for extrusion of 14 to level the marginal crests. D, E) Smile, before and after. It can be noticed that the necessary extrusion of the right-side teeth was obtained, so that the smile curve could be corrected, obtaining interproximal contacts parallel to the sagittal plane. F) Frontal view of the final occlusion.
limited by fixed numbers, or I can use only my visual perception. Similarly, I use the second premolars as reference to bond the first premolars, based on the ideal contact point – which is the main objective of orthodontics – and not at the buccal cusps, as they are variable and non-crucial to the treatment. The bonding of anterior teeth defines the correction or maintenance of the exposure of these teeth at rest, phonation and during smiling. Therefore, it defines how the overbite should be corrected. At that stage, extra care is required, as the intrusion of anterior maxillary teeth tends to age the face. I work with a perception that defines the dominance of the central incisors in the smile, without forgetting that the smile curve should follow the outline of the lower lip. In cases where there is incisal wear or non-permanent prosthetic work, the gingival contour should be prioritized, with vertical tooth movements without periodontal fibrotomy, as explained in our article published in the Dental Press Journal of Aesthetics.

In cases where the maxillary lateral incisor is absent, what are your treatment options and suggestions to optimize the outcome? Roberto Rocha

First of all, it is necessary that the patient and guardians be completely informed of the treatment possibilities, as they perception and personal desires are determinant to define the therapeutic approach. Such information is followed by a suggestion, indicating of the three following strategies: implants, self-transplants, or canine mesialization, with defined parameters. In pre-adolescents, especially when there is a gingival smile, I try to discard the implant option, as there is still active vertical growth, and as facial growth continues after the stop of body growth, continuing up to age 23, we would be condemning the patient to spend his teenage and young adult life with edentulous gaps or temporary prosthetics, compromising aesthetics and retention. Moreover, there is the difficulty in determining the end of facial growth, as one millimeter is not much for a treatment, but is a lot for relapse.

I consider gap closure to be the best option, even if not the absent lateral incisor. I will explain. The option that pleases me the most is the tooth self-transplant. I have recently incorporated it into my clinical practice, based on what the Denmark group have shown, and on the works of professors João Batista Gagno Intra and Armelindo Roldi from the endodontics department at UFES, along with professor Consolaro at FOB-USP. It is actually not a new technique – it is 50 years old, compared to the 25 years osteointegrated implants have been in clinical use. In our specific case, we shall use the best from each conventional option: (a) the canine retains its form and function, in its natural position, as in the implant option; and (b), a tooth is used to construct, either with restorations or prosthetics, the crown of a lateral incisor, which will follow the vertical growth of the face, erupting naturally. It is a simple, although precise, surgical procedure, in which the site is opened using the same drill used for implants, with reduced speed, and whose diameter and depth should be guided by volumetric tomography (Fig. 5). Usually, premolars that have not yet erupted are chosen as donor teeth, with 2/3 or the root (or slightly more) – of those, I consider mandibular teeth to have a more adequate root form. The tooth should be splinted from adjacent teeth, with a low rigidity wire, for one or two months, and force can be applied starting in the fourth month, as recommended by Dr. Paulsen. In most cases, there is a progressive closure of the pulp chamber of the transplanted tooth, with no need for endodontic treatment. I believe that, with the use of the temporary anchorage devices, the closure of the posterior space of the transplanted tooth is much simpler that the mesialization of canines in the anterior area. Lastly, we remind that an implant requires bone, whereas a self-transplant creates bone.

Whenever the self-transplant is not possible, canine mesialization should be considered. In those
cases, appliance setting should be differentiated in order to optimize the outcome. Special consideration should be given to the gingival contour, and plan canine extrusion – preceded by incisal and palatal wear – and intrusion of the first premolars. Gingivectomy and bone recontouring may be necessary to improve aesthetics and remove accumulated tissue. When the canines have impactful shape and color, the resources of aesthetic dentistry can modify tooth elements in an almost non invasive manner. When canine mesialization is chosen, it is recommended that occlusal adjustment be made, so that there is group function. Thus, the stress is reduced on the maxillary first pre-molar, distributing the progressively lower forces in a posterior aspect, in lateral movements.11,13

I do not discard the option of opening spaces for implants – especially in adults, in order to abbreviate treatment – when there is little support for the upper lip or when the treatment simulations with canine mesialization do not please the patient. The selection of the professional who will perform the implant is decisive for the aesthetic success when that strategy is chosen, as a bone or gingival graft may be necessary in order to avoid the dark shadow of the screw and the risk of gingival recession.6

**Patients with vertical growth patterns always require a more careful planning, and are more critical with regards to stability. In your understanding, the use of skeletal anchorage devices can reduce the need for extractions in vertical excess cases?**

Roberto Rocha

I consider vertical problems, especially excess, to be the greatest challenges to an orthodontist, particularly when we consider treatment stability. Studies show a 35% prevalence of open bite relapse, which represents a disaster in clinical practice6. What happens most times with relapse is an extrusion of posterior teeth, especially maxillary teeth, reestablishing the occlusal vertical dimension (OVD), which had been changed by the treatment and is dictated by muscle tone. Indeed, the muscle factor is the determining and limiting factor for our success, and there is no safe evaluation that can indicate whether the dental or skeletal changes we have generated through treatment will be followed by the necessary muscular adaptations6. First of all, we must get rid of the illusory view that speech therapies could be effective in this type of muscular adaptation, as there is no scientific principle to support that dogma. Genetic and environmental factors can explain greater or lesser stability. The type of muscle fiber that prevails in the masseter muscle is directly related to an individual’s facial pattern: type I fibers prevail in dolichofacial individuals, whereas type II fibers prevail in brachyfacial ones.22 Among environmental factors, I find that two protocols have a proven effect: (a) the use of active tips, generating discomfort in the low or protruded tongue posture;6,9 and (b) use of Bite-block, which, somehow, tends to increase the tone of mandibular elevator muscles, while at the same time generating intrusion forces on posterior teeth1,4. In the clinical approach, the results that show the best efficiency and stability are the cases treated with extractions followed by some form of vertical control, precisely because they do not lead to significant changes in the patient’s OVD5.

From this evidence, I would not regard the temporary anchorage device (TAD) as eliminating the need for extractions, but rather as an important tool in two strategies: (a) the first, and most evident, is as a vertical control device associated with extractions, making the retraction of anterior teeth more effective, instead of head gear appliances; (b) the second indication is when the retraction of anterior teeth is not recommended, and TADs would work as active elements in the intrusion of posterior teeth. In this case, it should be noted that, the less change in the patient’s OVD, the better the prospects for long-term stability – in other words, the prognosis is always better in less extensive open bites (Fig. 6). It is important to highlight that the intrusion movement leads to
changes in the arrangement of periodontal ligament fibers, which need at least six months for turn-over. Therefore, the mini-implant should be kept for that period, attached to the dental arch, after correcting the open bite. Long-term follow-up studies of severe open bite cases treated only with TAD are not yet reliable to determine any greater or lesser risk for relapse, when compared to ortho-surgical treatment.

Do you believe very long canines compromise the smile? What is your advice, from appliance setting to finalization, with regard to this aspect? Telma Martins de Araujo

This question deserves careful attention. I have written and spoken quite a bit on occlusion and its determinants, and within that context I emphasize the importance of the function of the canines. On the other hand, this gnathologic as-

FIGURE 6 - Open bite A) before, B) during leveling, and C) after intrusion of maxillary molars using temporary anchorage devices. D, E) Biomechanics for the intrusion of posterior teeth with elastic band trespassing the occlusal of the first molars. F) Another biomechanics, using palatal mini-implants, after the loss of those placed buccally. G, H) Aesthetic evaluation of the exposure of maxillary incisors at rest and during speech, which is essential prior to appliance removal. In this case, for a 45-year-old woman, 3mm exposure of the maxillary incisors is more jovial and attractive. I, J, K, L) Final smile and occlusion.
pect cannot be an instance of “the more, the merrier”, because that is not justifiable. The function of the canine must establish a disocclusion of posterior teeth in mandibular movements, which can be minimal. The practice of extruding canines to obtain guides, without adding other parameters, has produced a few “vampires” by the end of orthodontic treatment. Therefore, from the time the appliance is assembled (ideally preceded by a setup), one should consider that canine shapes with prominent cusps create two problems: the first being a practical one, as the tip of the canine can interfere with the appliance, breaking the arch or blocking tooth movement; as the second being an aesthetic issue. When setting the appliance, along with leveling the contact points, the smile’s aesthetics should be considered according to priorities: the first one is the dominance of the central incisors, the second is the curvature of the smile following the curvature of the lower lip, and the third is the gingival contour of the central incisors and canines at the same height and the lateral incisor 0.5 to 1mm below. Therefore, in order to reach these objectives, it may be necessary to wear the canine cusp. This makes it possible to minimize the marked anatomy of that tooth and evidence the size and expression of the central incisors, as well as define the smile curvature. Far from neglecting the function of the canine, it is possible to combine its shape with improved aesthetics (Fig. 7).

Should cases finished in Class II or Class III molar relationships get a differentiated occlusal adjustment compared to cases finished in molar relationship? Jonas Capelli Junior

The main objectives are the same: equipotent simultaneous bilateral contacts and immediate disocclusion of posterior teeth in excursive movements, with effective anterior guides. A few considerations are necessary, which differentiate the finalization and occlusal adjustment when the final molar relationship is not molar relationship. For instance, in the finalization of a Class II malocclusion treated with camouflage (extraction of the maxillary first premolars), the disto-occlusal molar relationship defines that the maxillary first molar must occlude with the mandibular second premolar, which has a smaller vestibulo-lingual size. In that case, the mesial rotation of the maxillary first molar should be regarded as normal, so that there can be contact between the mesio-vestibular cusp of that tooth with the vestibular cusp of the mandibular premolar, thus establishing the desired “A” contact (Fig. 8). Even more complicated is the finalization of cases with Class II molar relationship, which is common in cases of absence of the mandibular second premolars, treated with anchorage loss (Fig. 8). In those cases, there will be intercuspatation of the maxillary second premolar between the cusps of the mandibular first molar, which implies the need for change in tooth anatomy, with selective wear, in order to match normally incompatible sizes and shapes, thereby avoiding occlusal trauma with tooth movement and risk of root resorption. Whenever there is contact between premolars and molars, it should be of a lesser magnitude than the contact established between molars (Fig. 9).

What are the requirements to consider in order to achieve excellence in final treatment results? Luiz G. Gandini Junior

I have 11 principles or requirements that I consider essential in order to obtain a good final result, always careful to use protocols based on clinical and scientific evidence.

- Principle 1 – a consistent diagnosis and planning protocol, with clear parameters and reproducible references: always handle the patient in centric relation before and after treatment, and consider the patient’s age in order to define the final incisor exposure at rest, speech, and smile (Fig. 6, 7).
- Principle 2 – analyze the Rectangular Archwire (Ideal or Straight) to personalize the case: avoid undesirable movements that tend to create premature contact, which delays treatment, opens
the bite and predisposes to root resorption through occlusal trauma.

- Principle 3 – know and control dental and periodontal response to torque movement, by increasing or limiting the root effect: avoid periodontal recessions in risk patients, with lesser periodontal thickness, and optimize the desirable response in the whole expanse of the buccal corridor.

- Principle 4 – verify the plausibility of vertical tooth movement and the risk of occlusal trauma, by checking with articulating paper: make tooth movement possible without causing side effects, and reduce the time of treatment and use of elastic bands (Fig. 15).

- Principle 5 – consider that compensatory treatment (with extractions) requires some adaptations in tooth positions, admitting variations from the ideal: obtain the best intercuspatation, and with that, the stability in correcting Angle Classes II and II, and use limits of aesthetic perception by professionals and laypersons (Fig. 8, 9).

- Principle 6 – regard the gingival contour as
FIGURE 8 - A, B, C) Class II division 1 malocclusion, 7mm, with maxillary protrusion. D, E, F) Camouflage treatment with extraction of the maxillary first premolars. Notice the need for rotation of the maxillary first molars, as they were intercusp wed with the smaller mandibular second premolars. G, H, I) Final aesthetics of the case.

FIGURE 9 - Young female patient with agenesia of element 45: before (A), during (B) and after (C) orthodontics. Gap closure was chosen, achieving a mesio-occlusion molar relationship (Class III). The intercuspation of the maxillary second premolar with the mandibular first molar was possible only with selective grinding. D, E, F) Evaluation of the final occlusion and contact adjustment.
a priority in mutilated patients or those with dental wear, defining the amplitude of movement and periodontal procedures: achieve excellence in periodontal aesthetics, using the appliance to achieve specific results, expanding the resources of Periodontics. Principle 7 – consider the adequate incisal contour, by relating: (a) dental form and ratios; (b) smile curve; and (c) the height of interproximal contacts. All with the objective of achieving excellence in smile aesthetics, with dominance of the maxillary central incisors, using the appliance and incisal wear with clear objectives, including speech dynamics. Principle 8 – consider the standards of excellence in the facial height-width ratio and its correlation with tooth sizes: work together with other specialties, incorporating parameters and enriching the aesthetic result, in addition to establishing limits to interdental wear. Principle 9 – consider smile amplitude and buccal corridor as aesthetic parameters and markers of tooth positioning in the basal bone: position teeth in the basal bone, giving priority to maxillary disjunction as tool to improve aesthetics and increase stability, and respect the limits of the muscles. Principle 10 – establish axial, bilateral, simultaneous and equipotent forces, without horizontal results. With the objective of reducing treatment relapse, eliminate periodontal risk and meet the expectations of colleagues who send us patients. Principle 11 – face new technologies and practices by considering three factors: plausibility, effi-

FIGURE 11 - A, B, C) Patient featuring a lack of space in the maxillary arch and posterior crossbite. D, E, F) Evolution of the correction of the maxillary transverse gap. G, H, I) Immediate result of orthodontics, where the occlusion and smile curve were given priority, always considering dental integrity. J, K, L) After six months, with the definition of occlusal contacts and the effect of the gingivoplasty on tooth 21, establishing improved stability and aesthetics. M, N, O) Before-and-after smile comparison, in which the following aesthetic determinants can be observed: central incisors crown width equal to 80% of their height; contact points height equal to 50% of central incisor clinical crown height, reducing to 10% posterior; lateral incisors height equal to 80% of the central incisors and canines height, with gingival level 1mm below; smile curvature following lower lip contour, with dominance of the central incisors.
FIGURE 12 - A, B, C) Evolution of treatment to open spaces in order to achieve a mesio-distal increase in the incisors, followed by restorations. D, E, F) Final result, after orthodontics and porcelain veneers. G, H) Before-and-after smile comparison, evidencing dental proportions. I) Final dental proportions and forms. J, K) Before-and-after facial comparison, considering that teeth were increased based on facial proportions, as it was the only available parameter, due to pre-treatment destruction of teeth.
ciency and stability. This is in order not to overvalue what is new, under the risk of forsaking proven studies and practices, and consider that the parameters of success are built on scientific evidence, not words.

I plan to detail these principles in an article soon.

**At what times during corrective orthodontic therapy do you recommend selective grinding procedures for occlusal adjustment?** Paulo César Rodrigues Conti

As previously described in the article “Occlusal adjustment in Orthodontics: why, when and how?”, published by the Dental Press Journal of Orthodontics and Facial Orthopedics, there are three moments in which occlusal adjustment should be considered. The first is prior to setting the appliance, as there are malocclusions, such as functional crossbites, that can be solved with selective grinding, if there is no associated maxillary atresia. The second moment is during orthodontic treatment, in this case associated particularly with vertical tooth movements. We recommend that, prior to performing bends for dental extrusion, especially when associated with intermaxillary elastics, a verification be made using articulating paper (Accufilm®) of the risk of incorporating an occlusal trauma, as it would make movement impractical, in addition to create side effects such as roots resorption and iatrogenic open bites. In those cases, when the need is detected for selective occlusal grinding, the objective is to provide improve quality of dental intercuspation and reduce treatment time, as they make tooth movement biomechanically feasible (Fig. 15). The last opportunity for occlusal adjustment by grinding or addition should be considered six months after fixed appliance have been removed and prior to discontinue the use of the retainer. We should wait until that time to allow natural accommodation by function. Grinding is a refinement of occlusal contacts, which should be simultaneous and equipotent, with A and B or B and C contacts, with stop and balance in each tooth. Normally, it is a procedure that lasts only 10 to 20 minutes, as the greater and best occlusal adjustment has already been made through the precise movements during corrective orthodontic treatment. Effective anterior guides, with immediate disocclusion in excursive movements, are normally established during the orthodontic phase. The occlusal adjustment should not be seen as the silver bullet for problematic orthodontic treatments, but rather as a way to achieve excellence, with the objective of attaining occlusal balance, and therefore contribute to dental stabilization (Fig. 13). Normally, cases with gaps and undesirable tooth movements after the removal of retainers are related to the lack of occlusal balance and the presence of parafunction.

**In your opinion, should small discrepancies (up to 1.5mm) between the centric relation (CR) and habitual maximum intercuspation (HMI) positions be correcting through occlusal adjustment during finalization?** Paulo César Rodrigues Conti

There are two different situations that should be observed. First of all, in the population without occlusal pathologies, there is the prevalence of a small difference between CR and HMI positions, approximately 1.5mm, which is considered natural and physiological. Likewise, I do not believe that the CR position is the only acceptable one to finish an orthodontic treatment. On the other hand, the orthodontist needs a parameter for diagnosis and a reference during treatment. For the diagnosis, manipulating the patient in CR may mean the difference between a more or less complex treatment. For instance, a patient with severe Angle Class II malocclusion in HMI, after being manipulated in CR may prove to be a simpler case, avoiding orthognathic surgery to treat it (Fig. 14). Another situation that evidences the importance of patient manipulation in CR is during orthodontic treatment. At each activation of the appliance, the professional creates the occlusal contacts and interferences, which can shift the mandibular posi-
tion, establishing a new HMI. In other words, it is a new malocclusion at every monthly consultation, leaving the orthodontist lost during treatment. The only reproducible position is CR, and therefore it should be used as guidance for each activation of the appliance. CR is a reference for the orthodontist, and not an obsession\textsuperscript{18,23}.

Therefore, I believe there can be, at the end of treatment, a small discrepancy of up to 1.5mm between CR and HMI, as long as this mandibular shift does not create excessive anterior contact, whose horizontal component would lead to tooth migration. This is an important evaluation prior to removing the retainers, as the check should be made by manipulating the patient in CR and asking him to clench his teeth, while the professional places a fingertip on the crown of maxillary teeth. If vibration (fremitus) occurs, it is a sign of excessive effort on those teeth, and the contacts should be checked using articulating paper (Accufilm\textsuperscript{®}). In the cases where the anterior deviation of CR to HMI results in excessive horizontal force, even with a deviation lower than 1.5mm, occlusal adjustment in CR should be considered the best path to avoid opening anterior spaces and periodontal recession, as excessive horizontal forces on anterior superior teeth lead to tipping. In the absence of anterior retention, in muscurally competent patients, this strong anterior contact could explain the relapse of mandibular dental crowding. In the cases with small CR-HMI deviations, where there is not a strong anterior contact in HMI, the final adjust-

\textbf{FIGURE 13 -} \textbf{A} Initial malocclusion, with dental crowding. \textbf{B, C} Result obtained after orthodontics. \textbf{D, E} Occlusal contacts six months after removal of appliances. \textbf{F, G} Occlusal balance achieved through selective grinding; maxillary retainer use is allowed after this stage.
ment should be made in the latter position, which is the more common situation².

Considering there is an increase in the amount of occlusal contacts after the removal of the orthodontic appliance, how do you see the ever more common use of thermoplastic retainers (acetate plates) as devices for post-treatment maxillary retention? Jonas Capelli Junior

Thermoplastic retainers are plates that cover all teeth, including their occlusal surface. Because they are transparent, patients like them. Orthodontists who use them believe in the need to retain vertical tooth movement, avoiding post-treatment accommodation. What seems an advantage is in fact disastrous when we observe what happens in the six months following appliance removal, as the acetate plate obstructs a significant increase
in the number of occlusal contacts\(^8,20\). Physiologic dental movement at the moment of eruption is natural, desirable and necessary, increasing the number of occlusal contacts after the active orthodontic treatment – so that later these contact can be distributed qualitatively, through occlusal adjustment by grinding. In fact, no matter how good the professional and his care during finalization, there will always be room for the normal muscular function to complement dental occlusion in the most physiological and stable manner. We cannot forego this help from nature, which establishes a potential continuous eruption of teeth, improving an element’s contact with its antagonist. That is the great advantage of using retaining appliances that have no material interposed between the two dental arches. Of course, we are discussing minor post-treatment accommodations, and not an anterior open bite due to lack of finalization. Our choice is usually the wraparound appliance, which has a continuous clip passing distally from the last teeth of the maxillary arch,

FIGURE 15 - A) Patient with Class I malocclusion with crowding. B, C) At the beginning of the finalization phase, there is the need for step-bends to improve intercuspation. D, E, F) The efficiency of biomechanics was only possible because the premature contact was previously detected, resulting in selective grinding of the distal marginal crest of tooth 22 in order to allow vertical movement. G, H, I) Final result, obtained after 26 months of orthodontics, with no time loss and without sequelae.
combined with the arch bonded to the lower canines (Fig. 16). When tooth eruption is stopped with the use of thermoplastic appliances, the need and number of additions increases, through restorations, in an attempt to achieve the necessary contacts for occlusal balance. Therefore, scientific evidence and clinical excellence counter-indicate the use of thermoplastic appliances as retainers after orthodontic treatment, and point to the need to wait for six months using retainers with appliances that do not cause occlusal interference, in order to perform adjustments through grinding, aiming for the best possible occlusal balance².

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