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Learning Objectives

After completion of this exercise, the participant will be able to:

1. Compare clear aligners with other modalities for the treatment of moderate lower anterior crowding by lower molar distalization.
2. Describe the use of the Gelb 4/7 grid in evaluating condylar position.
3. Discuss a two-stage approach for soft- and hard-tissue modification to establish periodontal health before orthodontic treatment of compromised adult patients.
4. Utilize mandibular extra-alveolar mini-implants to avoid the need for compensatory orthodontic strategies in skeletal Class III treatment.

Article 1

Orloff, C. and Shiikha, Y.: *Distalization of Lower Molars to Alleviate Lower Anterior Crowding with the Invisalign System* (pp. 517-535)

1. In the five cases shown here, interproximal reduction was used for:
 - a) eliminating black triangles
 - b) addressing tooth-size discrepancies
 - c) cosmetic recontouring
 - d) all of the above
2. Extractions were needed to provide space in:
 - a) none of the cases
 - b) one case
 - c) three cases
 - d) all five cases
3. The space created distal to the lower second premolars using clear aligners ranged from 1.59mm to:
 - a) 1.71mm

- b) 1.87mm
- c) 1.92mm
- d) 2.25mm

4. Initial analysis indicated that the dental effect of the sequential aligner treatment involved about:
 - a) 80% molar distalization and 20% bite opening
 - b) 50% molar distalization and 50% incisor proclination or protrusion
 - c) 50% molar distalization and 50% bodily incisor movement
 - d) 20% molar distalization and 80% vertical compensation

Article 2

Verulkar, A.A.; Bajaj, T.D.; Kamble, R.; Shrivastav, S.; and Potode, N.B.: *A New Approach to the Diagnosis and Treatment of TMD in Growing Patients* (pp. 536-542)

5. The Gelb 4/7 position is:
 - a) the physiologic normal position of the condyle in the fossa
 - b) equal to 4/7 of the distance from the articular disc to the fossa
 - c) the active position used in myofunctional exercises
 - d) the best seated position of the lateral pterygoid muscle
6. The condyle is ideally seated:
 - a) between boxes 1 and 2 of the Gelb 4/7 grid
 - b) at 4/7 of the distance from the articular disc to the fossa
 - c) slightly forward of a concentric position against the articular eminence
 - d) above and behind the articular disc

7. To confirm that the condyles are being repositioned in accordance with the Gelb 4/7 position, the authors take a sectional TMJ view with:

- a) a Twin Block appliance in the mouth
- b) a construction bite in the mouth
- c) a Gelb 4/7 grid in the mouth
- d) the mandible in protrusive position

8. The ideal centered position of the condyle:

- a) repositions the mandible in harmony with the neck, back, and feet
- b) decompresses the auriculotemporal nerve and TMJ
- c) avoids clicking, locking, and shearing forces
- d) all of the above

Article 3

Matsumoto, K.; Tanna, N.; and Boucher, N.: *A Two-Stage Approach for Phenotype Modification with Connective Tissue and Bone Grafts in Periodontally Compromised Class II, Division 2 Patients* (pp. 543-557)

9. The soft-tissue graft used in the authors' approach is a:

- a) partial corticotomy with bone grafting
- b) subepithelial connective tissue graft
- c) free gingival autograft
- d) periosteal pedicle graft

10. In a systematic review, the amount of maxillary molar distalization that could be achieved with Class II appliances supported by temporary anchorage devices (TADs) ranged from 1.8mm to:

- a) 1.92mm
- b) 2.25mm
- c) 5.4mm
- d) 6.4mm

11. If Class II elastics are used without TADs, they may create side effects including any of the following except:

- a) loss of mandibular anchorage
- b) proclination of mandibular incisors
- c) retroclination of maxillary incisors
- d) unfavorable smile esthetics

12. Simultaneous soft- and hard-tissue grafts are less successful than the authors' two-stage approach when extreme proclination or protrusion is planned because the:

- a) space needed for the connective tissue graft reduces the volume of the bone graft
- b) long-term stability will be less predictable
- c) patient will have insufficient recovery time before tooth movement is initiated
- d) likelihood of gingival recession during tooth movement will be increased

Article 4

Do Rego, M.V.N.N. and Ruellas, A.C.O.: *Retreatment of a Skeletal Class III Malocclusion Using Mandibular Extra-Alveolar Mini-Implants* (pp. 561-570)

13. The mandibular buccal shelf is the preferred site for mandibular extra-alveolar mini-implants because it:

- a) allows a full range of orthodontic tooth movements
- b) offers an abundance of mandibular bone
- c) presents little risk of interference with dental roots
- d) all of the above

14. Mini-implants should be inserted in the mucogingival regions of the mandibular buccal shelf at an angulation of:

- a) 40-60° to the external oblique line
- b) 70-90° to the mandibular occlusal plane
- c) 70-90° to the maxillary occlusal plane
- d) 90-105° to Frankfort horizontal

15. To avoid compromising mini-implant stability, the applied force should be no more than:

- a) 250g
- b) 200-300g
- c) 300-450g
- d) 500g

16. When two miniscrews in the mandibular buccal shelf are used for anchorage, a retraction force applied to the entire mandibular arch generates:

- a) an intrusive force on the molars and an extrusive force on the incisors
- b) an extrusive force on the molars and an intrusive force on the incisors
- c) an intrusive force on both the molars and incisors
- d) an extrusive force on both the molars and incisors