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Learning Objectives

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

1. Describe the application of the Insignia system in adult patients.
2. Prescribe an Invisalign solution for cases requiring the extraction of first premolars.
3. Discuss the potential advantages involved in delaying extraction of a first molar's mesial root.
4. Compare the Carriere Motion Appliance with other options for Phase I treatment of a skeletal Class II malocclusion.

Article 1

Balut, N.; Popnikolov, P.; and Ades, A.: *Digital Smile Design and Orthodontic Finishing with the Insignia System* (pp. 449-457)

1. In the Insignia system, the virtual setup is:
   a) created by technicians
   b) modified by the orthodontist
   c) approved by the orthodontist
   d) all of the above
2. Modifications to the recommended virtual setup should begin with:
   a) microesthetic factors
   b) macroesthetic factors
   c) the shape and width of the arches
   d) the smile plane
3. Comparing the Insignia system with self-ligating brackets, Brown and colleagues reported:
   a) no difference in treatment time
   b) three months' shorter treatment time
   c) nine months' shorter treatment time
   d) inconclusive results
4. To minimize treatment time in the case shown here, the authors combined Insignia with:
   a) micro-osteoperforation
   b) piezosurgery
   c) a vibrational device
   d) accelerated osteogenesis

Article 2

Zhu, Y.; Li, X.; and Lai, W.: *Treatment of Severe Anterior Crowding with the Invisalign G6 First-Premolar Extraction Solution* (pp. 459-469)

5. Issues involved in the decision to extract first premolars include all of the following except:
   a) the difficulty of creating space for anterior retraction
   b) undesirable alteration of the facial profile
   c) uncontrolled molar tipping and rotation
   d) the need for posterior anchorage
6. In the Invisalign G6 solution, SmartForce features are designed:
   a) to expand the maxillary archform during space closure
   b) to ensure root parallelism of the canines during retraction
   c) to maximize posterior anchorage during space closure
   d) both b and c
7. In a retrospective study of patients who underwent extraction of four first premolars, facial profiles improved or were satisfactorily controlled in:
   a) none of the cases
   b) 40-50% of the cases
   c) 80-90% of the cases
   d) all of the cases

8. To prevent lingual overinclination of the lower anterior teeth during the initial treatment phase, the clinician should:
a) place a lower lingual holding arch
b) carefully assess the interincisal angle in ClinCheck treatment planning
c) stage movement of the posterior teeth in ClinCheck treatment planning
d) all of the above

Article 3

Lee, J.H. and Park, H.S.: *Delayed Extraction of the Mesial First-Molar Root as a Means of Accelerating Space Closure* (pp. 470-478)

9. Protracting lower molars can lead to any of the following problems except:
a) gingival clefting
b) gingival recession
c) osteoporosis
d) root resorption

10. To avoid tipping during molar protraction, the orthodontic force must:
a) pass through the center of resistance of the protracted tooth
b) be parallel to the occlusal plane
c) be supplemented by intermaxillary elastics
d) move the protracted tooth out of occlusion

11. To avoid causing occlusal trauma during molar protraction:
a) supplemental anchorage should be used
b) a slight intrusion force should be added
c) a guided bone regeneration procedure should be considered
d) all of the above

12. Delaying extraction of the mesial first-molar root can:
a) maintain bone volume in the mesial half of the extraction site
b) stimulate an additional regional acceleratory phenomenon
c) allow faster protraction of the second molar into immature bone
d) all of the above

Article 4

Rodríguez, H.L.: *Long-Term Stability of Two-Phase Class II Treatment with the Carriere Motion Appliance* (pp. 481-487)

13. In a Class II case, the Carriere Motion Appliance is designed to:
a) work in conjunction with conventional fixed appliances
b) work in conjunction with skeletal anchorage
c) establish a Class I platform for subsequent treatment
d) avoid the need for subsequent treatment

14. In the case presented here, lower anchorage was supplied by:
a) a Carriere Motion Appliance
b) a lower lingual arch
c) a transpalatal arch
d) two posterior miniscrews

15. The Carriere Motion Appliance facilitates Class II correction by:
a) generating a distal rotational movement around the upper first molars' palatal roots
b) allowing the mandible to advance forward as the upper first molars are derotated
c) promoting a change in the occlusal plane to reduce the overjet
d) all of the above

16. Two-phase Class II treatment allows sagittal correction to be accomplished in Phase I, so that Phase II can be used to address:
a) dental discrepancies
b) skeletal discrepancies
c) vertical discrepancies
d) growth discrepancies