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Learning Objectives

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

1. Describe a simple surgical-orthodontic procedure for eruption of a deeply impacted molar.
2. Prescribe and place a keyless rapid maxillary expander.
3. Discuss the Biocreative Strategy for treatment of Class III patients.
4. Apply CAD/CAM technology for bracket positioning and indirect bonding.

Article 1

Lorente, C.; Lorente, P.; Perez-Vela, M.; Esquinas, C.; and Lorente, T.: *Management of Deeply Impacted Molars with the Miniscrew-Supported Pole Technique* (pp. 589-597)

1. The most common type of molar impaction is:
 - a) mesial inclination
 - b) distal inclination
 - c) horizontal impaction
 - d) vertical impaction
2. Predictors of ectopic molar eruption include all of the following except:
 - a) family history of unerupted molars
 - b) oversize dental follicle
 - c) anomalous angulation
 - d) arch-length discrepancy
3. In the authors' pole technique, if the embedded molar is in a vertical position, the pole length should be:
 - a) 3mm greater than the distance from the surgical attachment to the miniscrew
 - b) equal to the distance from the attachment to

the miniscrew

- c) 3mm shorter than the distance from the attachment to the miniscrew
 - d) equal to the distance from the center of rotation to the miniscrew
4. The erupting force of 150-200g on the impacted molar should be activated:
 - a) only once, at the time of surgery
 - b) only once, two weeks after surgery
 - c) at the time of surgery and every two weeks until the molar has erupted
 - d) at the time of surgery and then as needed, depending on the angulation of the molar

Article 2

Keles, A.; Lin, C.H.; Keles, E.; and Darendeliler, M.A.: *Rapid Palatal Expansion with the Keles Keyless Expander* (pp. 598-603)

5. Maxillary transverse deficiency is usually accompanied by:
 - a) anterior crossbite
 - b) posterior crossbite
 - c) anterior open bite
 - d) posterior open bite
6. Disadvantages of conventional jackscrew palatal expanders include:
 - a) difficulty accessing the keyhole
 - b) failure to expose the next hole as a result of an incomplete turn
 - c) potential risk of injury from inserting or swallowing the key
 - d) all of the above
7. For a patient in the permanent dentition, the authors recommend using the Keles Keyless

Expander (KKE) with:

- a) bonded acrylic
- b) two support arms
- c) four support arms
- d) miniscrew anchorage

8. The second-generation KKE was reduced in size to enable its use in:

- a) the mixed dentition
- b) the permanent dentition
- c) patients with narrow palatal vaults
- d) both a and c

Article 3

Chung, K.R.; Kim, Y.J.; Jeon, H.H.; Kim, S.H.; and Nelson, G.: *The Biocreative Strategy, Part 6* (pp. 604-620)

9. The I-shaped C-tube microplate is fabricated from:

- a) stainless steel
- b) nickel titanium
- c) grade II titanium
- d) metal mesh

10. The lower second molar is distalized by elastomeric chain from the C-tube plate to:

- a) a stainless steel sliding jig
- b) a bonded mesh tube
- c) an extension wire hook
- d) a bent omega loop

11. The lower first molar can be distalized simultaneously by adding:

- a) a stainless steel sliding jig
- b) a bonded mesh tube
- c) an extension wire hook
- d) a bent omega loop

12. To maintain lower arch width during molar distalization, the authors recommend placing:

- a) a lingual arch between the first molars
- b) a lingual arch between the first premolars
- c) closed-coil springs between the first molars and first premolars
- d) a lip bumper

Article 4

Spitz, A.; Gribel, B.F.; and Marassi, C.: *CAD/CAM Technology for Digital Indirect Bonding* (pp. 621-628)

13. Computer-aided design/computer-aided manufacturing (CAD/CAM) technology has been used in orthodontics for all of the following except:

- a) treatment planning
- b) cephalometric analysis
- c) bracket positioning
- d) fabrication of clear aligners

14. In the OrthoAnalyzer software, after segmenting the virtual maxillary and mandibular models, the next step is to:

- a) overlay the transfer trays
- b) position the brackets in the vertical and horizontal dimensions
- c) define the occlusal and standard planes
- d) define the facial axis point for each tooth

15. Transfer trays are fabricated by using:

- a) hard and soft vacuum-formed sheets
- b) a transfer jig
- c) a three-dimensional printer
- d) a virtual impression

16. To ensure post-treatment root parallelism, the digital intraoral scan should be aligned with:

- a) a cone-beam computed tomography image
- b) the lateral cephalogram
- c) the bite registration
- d) a panoramic radiograph