

# CONTINUING EDUCATION

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## Learning Objectives

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

1. Use standard aligner software to design stents for mini-implant insertion.
2. Describe a hemisection technique for controlled orthodontic space closure in cases with missing second premolars.
3. Contrast various methods of treatment for Class II patients with steep mandibular planes and retrusive mandibles.
4. Make an additional bend in the base archwire to avoid interference when piggyback mechanics are used.

## Article 1

Cousley, R.R.J.: *Orthodontic Aligner Software for the Design of Mini-Implant Guidance Stents* (pp. 212-219)

1. Virtual planning of a guidance stent for insertion of a temporary anchorage device (TAD) involves the integration of a digital model with:
  - a) a lateral cephalogram
  - b) a panoramic radiograph
  - c) cone-beam computed tomography (CBCT)
  - d) either a or c
2. The first step in the author's digital workflow is to:
  - a) fabricate a radiographic stent with metallic markers
  - b) import a three-dimensional stereolithographic (STL) image of an abutment
  - c) acquire an intraoral scan
  - d) design an aligner attachment in dental-

attachment mode

3. Besides the guidance stent, the 3D-printed model can also be used to fabricate an anchorage appliance or a:
  - a) Twin Block appliance
  - b) removable retainer
  - c) stent for delivery of local anesthesia
  - d) cylindrical TAD screwdriver
4. Integration of CBCT data has the primary benefit of:
  - a) allowing 3D visualization of the anatomy
  - b) enabling fabrication of a boneborne appliance
  - c) streamlining design and fabrication
  - d) all of the above

## Article 2

Ludwig, B.; Mura, R.; Di Leonardo, B.; Contardo, L.; and Glockengiesser, J.: *Controlled Slicing for Space Closure in Cases with Congenitally Missing Second Premolars* (pp. 220-231)

5. Treatment options for managing aplasia of a permanent second premolar include all of the following except:
  - a) autotransplantation
  - b) orthodontic space opening
  - c) prosthetic replacement
  - d) retention of the second deciduous molar
6. Mesial migration of the first permanent molar after extraction of the second deciduous molar has been attributed mainly to:
  - a) controlled bodily movement
  - b) mesial migration of the third molar
  - c) dental tipping
  - d) extrusion of the opposing teeth

7. The controlled-slicing technique begins with:
  - a) a slice of about 2mm on the distal aspect of the second deciduous molar
  - b) removal of the distal half of the second deciduous molar
  - c) extirpation of the second deciduous molar's pulp tissue
  - d) extraction of the second deciduous molar's mesial portion
8. Once the entire deciduous molar is removed, it is important to:
  - a) reduce the residual alveolar ridge
  - b) promote reciprocal space closure
  - c) reinforce anterior anchorage
  - d) all of the above

#### Article 3

Venugopal, A.; Manzano, P.; Ludwig, B.; and Vaid, N.R.: *Nonsurgical Management of a Severe Atypical Class II Using Miniscrew Anchorage, Transpalatal Arch, and Intrusion Arch* (pp. 237-247)

9. A skeletal Class II malocclusion with a high mandibular-plane angle and a retrusive mandible is often the result of:
  - a) clockwise mandibular rotation
  - b) improper buccal-segment development
  - c) positional dental anomalies
  - d) either a or b
10. The first stage of treatment in this case report involved:
  - a) incisor intrusion and correction of the gummy smile
  - b) upper-molar intrusion, retraction, and space closure
  - c) removal of bony exostoses and contouring of the gingival margins
  - d) leveling, alignment, and correction of the scissor bite
11. The third stage of treatment involved:
  - a) incisor intrusion and correction of the gummy smile
  - b) upper-molar intrusion, retraction, and space

closure

- c) removal of bony exostoses and contouring of the gingival margins
  - d) leveling, alignment, and correction of the scissor bite
12. Treatment of patients with excessive anterior vertical dimensions who elect not to have surgery should involve:
  - a) clockwise rotation of the mandible
  - b) positioning of the mandibular incisors above basal bone
  - c) extrusion of the posterior teeth
  - d) inhibition of tongue pressure

#### Article 4

Mumtaz, B.: *Lingual Step-In Bend for Use with Piggyback Mechanics* (p. 248)

13. During orthodontic eruption of an impacted canine, piggyback mechanics are often used to:
  - a) alter the archform
  - b) avoid unwanted reactionary forces
  - c) promote mandibular rotation
  - d) avoid contact with the opposing teeth
14. If the rigid base archwire is straight, it will:
  - a) interfere with the canine's eruption path
  - b) create a rollercoaster effect
  - c) interfere with the opposing teeth
  - d) both a and c
15. If the impacted canine is in the lower arch and a vertical bend is made in the base archwire, the bend will:
  - a) interfere with the canine's eruption path
  - b) create a rollercoaster effect
  - c) interfere with the opposing teeth
  - d) induce proclination of the neighboring teeth
16. The additional bend in the base archwire recommended by the author is:
  - a) 90° vertical
  - b) 90° horizontal
  - c) 45° apical
  - d) 45° lingual