After completing this course, the participant will have:

1. An appreciation for the need to observe orthodontic radiographic images for the presence of a posterior arch defect of the atlas (C1).
2. An awareness of the effects of a fixed functional appliance on upper airway volume.
3. Familiarity with the result of botulinum toxin injections for treating a gummy smile.
4. Knowledge concerning the most effective caries risk assessment method in orthodontic patients.

**Article 1: Incident findings of posterior arch defects of the atlas in orthodontic patients: A case series, by Niranzena Panneer Selvam et al**

1. The purpose of the article was to present a series of 7 cases of posterior arch defect of the atlas that were detected during routine radiographic examination. The clinical significance of the defect was emphasized.
   - TRUE
   - FALSE

2. Two of the patients were symptomatic and had a history of trauma to the neck.
   - TRUE
   - FALSE

3. Posterior arch C1 congenital anomalies have been classified into 5 distinct types (A-E) of defects. The most common type of defect seen in 4 of these cases was a type C defect.
   - TRUE
   - FALSE

4. The authors suggested that when this posterior arch C1 congenital anomaly is observed, even though the patient is likely to be asymptomatic, the patient should be referred to a physician as well as educated about potential complications.
   - TRUE
   - FALSE

**Article 2: Effects of a fixed functional appliance on upper airway volume: A 3-dimensional cone-beam computed tomography study, by Yousef Abdalla et al**

5. This study aimed to use lateral cephalogram analysis to determine the effects on upper airway volume and minimum cross-sectional area and to identify pretreatment markers for airway changes when a functional appliance is used for orthodontic treatment.
   - TRUE
   - FALSE

6. The study’s control group comprised 73 Angle molar Class II patients who had undergone nonextraction, fixed appliance treatment.
   - TRUE
   - FALSE

7. The authors reported results indicating that a fixed functional appliance may have a positive effect on the upper airway if the treatment is started at a younger skeletal age and in a patient with a large ANB angle and a small mandibular inclination.
   - TRUE
   - FALSE

8. The authors concluded that the fixed functional appliance is associated with an unpredictable change in upper airway volume and minimum cross-sectional area when used in children.
   - TRUE
   - FALSE
Article 3: Efficacy of botulinum toxin for treating a gummy smile, by Ahmet Fatih Cengiz et al

9. This retrospective study aimed to evaluate the efficacy of botulinum toxin applied to the different muscles of patients who had excessive gingival display and to evaluate the return to baseline gingival exposure value.
   TRUE
   FALSE

10. The subjects were divided into groups on the basis of injection site: group 1—levator labii superioris alaeque nasi, levator labii superioris, zygomaticus minor, and zygomaticus major, and group 2—the risorius muscles and those associated with the lower lip and inserting into the lower portion of the orbicularis oris muscle.
   TRUE
   FALSE

11. The authors reported that on the basis of the frontal smile photograph analysis, it was observed that both study groups had a relapse by the second month.
   TRUE
   FALSE

12. The authors concluded that for gummy smile correction, botulinum toxin injection is thought to be an alternative method of treatment because it is effective and conservative and has high patient satisfaction.
   TRUE
   FALSE

Article 4: Validation of caries risk assessment methods in orthodontic patients, by Hanna Enerbäck et al

13. The purpose of this study was to evaluate the validity of 5 caries risk assessment methods for predicting caries outcome during orthodontic treatment.
   TRUE
   FALSE

14. This study evaluated the validities of 3 different caries risk assessment programs (Cariogram, CAMBRA, and R2) and 2 caries prevalence indexes (decayed and filled, and decayed, initial filled surfaces) for predicting caries during orthodontic treatment.
   TRUE
   FALSE

15. The authors reported that decayed and filled was a more reliable method for predicting both manifest caries and initial caries during orthodontic treatment than decayed, initial filled surfaces.
   TRUE
   FALSE

16. The authors recommended that the Cariogram caries risk assessment program could effectively predict manifest caries and initial caries during orthodontic treatment.
   TRUE
   FALSE