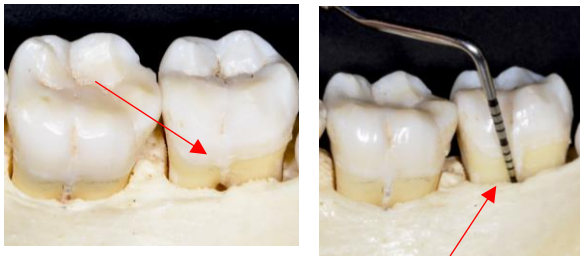


Developmental Anomalies and Periodontal Health:
Enamel Pearls and Cervical Enamel Projections

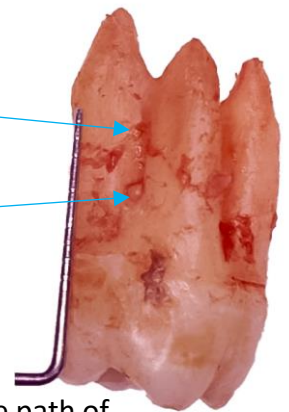
Tooth formation typically follows a predictable and orderly biologic path. Occasionally, the normal process is disrupted, creating anomalies in tooth form. Enamel pearls (**EP**) and Cervical Enamel Projections (**CEP**) are two such examples. Initially reported in the clinical literature in 1841, they have also been found in ancient human fossils and are known by several names such as cementicles. The incidence varies depending on the studied population and methodology. Although EP and CEP can occur on any tooth, they are most frequently found on molars. When they occur in the furcation area, they can cause significant diagnostic and clinical challenges.



As illustrated in the skull model, the periodontal attachment can form apical to the crest of bone, facilitating the introduction of bacteria, eventually leading to periodontal destruction.

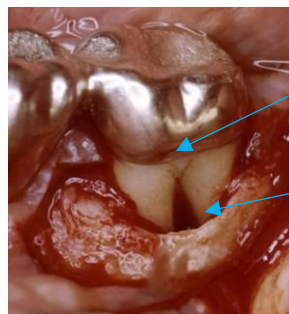
Periodontal attachment loss is considerably apical to the other attachment loss

Enamel Pearl



An enamel pearl accentuates the path of periodontal destruction.

Case Report #1



Cervical Enamel Projection

Extensive furcation bone loss

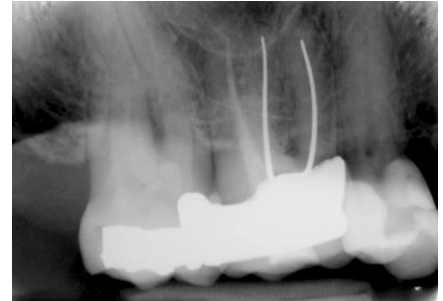
Patient presents with an isolated, deep probing depth on the facial of tooth #18 which serves as the distal abutment for a three-unit bridge.

Upon flap reflection, a CEP discovered. Because there is no attachment to the enamel portion, the attachment is located apical to the bone crest. In effect, there was a furcation defect present after tooth development which eventually created a path for bacterial invasion and accentuated the level of bone destruction. The CRP was removed and the furcation received a bone graft.

Case Report #2



Patient originally presented in 2003 for implants in the maxillary anterior segment. At the time, the area around #2 appeared to be periodontally stable. The patient returned in 2010 with advanced, isolated, deep probing depths and extensive furcation bone loss.



Flap reflection revealed the presence of an enamel pearl which facilitated bacterial entry into the furcation. The area was surgically debrided, the enamel pearl was removed, but the tooth was subsequently extracted.

The anomaly can be difficult to identify radiographically. In this case, it appears as a subtle circular area that can be easily overlooked on routine examination. This highlights the importance of diligent probing at each maintenance visit.



Conclusions

Developmental anomalies such as EP and CEP can appear in 5% of teeth. In the healthy periodontal patient with good oral hygiene, surgical intervention is not necessarily required. However, it is important to understand that these anomalies are a significant predisposing factor for advanced attachment loss. It is important to identify and flag these areas for particular scrutiny in follow-up visits. Also, patient education is key. When a problem is identified, the patient should be advised and promptly referred to avoid extensive bone loss and subsequent tooth loss. In particular, isolated deep probing depths should be looked at with suspicion.

If you have any questions or specific patient concerns, please do not hesitate to reach out to either doctor.

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