

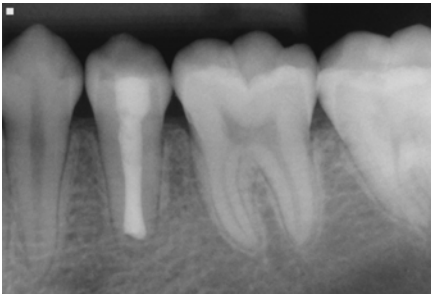
### The MTA Apical Barrier

Teeth with no restorations or history of trauma may develop pulpal necrosis related to anatomical anomalies such as Dens Invaginatus (left image). The central evaginated pulp horn can become exposed from normal occlusal wear leading to pulpal necrosis. Hertwig's Epithelial Root Sheath is destroyed with incomplete root development. Obturation of an apical area with a wide-open apical area is a challenge.

**#20 NON-VITAL PULP CAUSED BY DENS EVAGINATUS RESULTING IN INCOMPLETE ROOT DEVELOPMENT**



Open root apices can be managed with either apexification or placement of a barrier material. Using calcium hydroxide for apexification requires multiple visits, patient compliance, and long time periods to complete formation of the apical barrier. Placement of a biocompatible material such as Mineral Trioxide Aggregate (MTA) provides an immediate barrier for condensation of obturation materials. MTA is a medical grade version of Portland Cement. In the case shown, endodontic access was accomplished and calcium hydroxide (UltraCal) was used as a brief intracanal medication. In this technique,  $\text{Ca}(\text{OH})_2$  was placed for one week to disinfect the canal space and create the appropriate pH for healing. The  $\text{Ca}(\text{OH})_2$  can be seen tracking through the drainage site (middle image). The right image shows the completed treatment. The distal sinus tract was closed at the time of obturation. Full coverage restoration may not be required if both marginal ridges are intact and the access preparation was conservative.



The figure on the left is a one year follow-up image illustrating complete apical healing and, histologically, would typically demonstrate cementum growth over the apical MTA with normal periodontal space architecture.

**Jerome CE, Hanlon RJ. Dental anatomical anomalies in asians and pacific islanders. J Calif Dent Assoc 2007;35:631-636.**