Six extracted mandibular canines were reconstructed three-dimensionally, in order to demonstrate their external and internal morphological and anatomical features and to determine the number and ramifications of their root canals. The process of the 3D reconstruction included serial cross-sectioning, digitization of the sections, extraction of the boundaries from each tooth, 3D representation by using the triangulation method and finally surface rendering by using photorealistic effects. The results showed three single rooted mandibular canines with one wide root canal, two single rooted canines with bifurcation of their root canal and finally a double rooted mandibular canine with two root canals, a lingual and a buccal one.