

Previous studies have reported revascularization and reorganization of dental pulp chambers with periodontal tissues of monkeys following complete surgical transaction through a portion of the apical roots. This study observed 128 teeth in four adult monkeys. Following surgical transaction, the tissues were acquired by perfusion fixation, serially sectioned, and stained for cellular detail with hematoxylin and eosin. Collagen tissues were stained with Preece's trichrome and neural tissues with Rowles' silver cyanate for controlled impregnation. At 1 and 2 weeks the coronal tissues showed tissue disruption, necrosis, and degenerating nerves. The 3- and 4-week tissues that had been completely transected showed replacement healing of the pulp tissue with periodontal ligament connective tissue, but no nerves were present. At 6 weeks, no nerves were present in the coronal chambers of those teeth with complete vital transaction. The 24-, 36-, and 52-week pulp chambers with complete transaction failed to show nerve fibers in their reorganized connective tissues.