

THE NATURE OF THE CEMENTO-DENTINAL JUNCTION ELECTRON MICROSCOPIC STUDY

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Abstract

The cemento-dentinal junction in acellular and cellular cementum of human maxillary incisors, canines and premolars was examined by scanning electron microscopy combined with NaOH maceration. The NaOH maceration was used to remove interfibrillar substances and to observe details of the fibrillar architecture. The teeth were half-sectioned longitudinally, demineralized and macerated for 3-4 days or for 10-14 days. In the 3-4 day macerated specimens, the cemento-dentinal junction was a fibril-poor groove. Some cemental fibrils or fibril bundles penetrated the groove and appeared to intermingle with dentinal fibrils. In the 10-14 day-macerated specimens, the fibril intermingling was point-like and present only in places at the cemento-dentinal junction in both acellular and cellular cementum and these structural features were consistent in all examined teeth.. It was established that NaOH-maceration removes interfibrillar substances selectively in connective tissues and does no damage to the collagen fibril structure and architecture. It is suggested that interfibrillar adhesive substances are the main factor for the cemento-dentinal attachment and more important than the fibril intermingling which is consider an accessory or secondary factor

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