

Interfacial ultrastructure of the AQ Bond Plus

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I. Objectives

AQ Bond Plus has the function of self-etching priming adhesive, which can be applied by single coating without second coating, being different from conventional AQ bonds. Moreover, because the absorption range of light became wider, the bond can comply with any visible light curing units. Thus, the bond can produce an unified form between the dentine layer with impregnated resin of good quality and the thin and hard film characteristically.

In this study, we investigated the junctional conditions of AQ Bond Plus, using a scanning electron microscope (SEM).

II. Materials and Methods

The teeth used in this experiment were a total of 15 teeth. These adult dogs underwent systemic anesthesia and cavities of class V were preparation using an air turbine. Then, the inside of the cavity was washed with sterile purified water and dried and the subsequent procedures followed the instruction by the manufacturer: The treatment using AQ bond or AQ Bond Plus was conducted and plugging, correction of the form, and polishing using Metafil C were conducted to complete the procedures.

The observation period was seven days. After the observation period, the interface was observed using a scanning electron microscope (JSM-6340F; Nihon Electron Co.).

III. Results and Discussion

The results of the SEM observation for AQ Bond Plus showed favorable junctional conditions similarly to those for conventional AQ bonds.

The above results indicated that AQ Bond Plus is a bonding system material having a superior adhesiveness. In the future, we will investigate for reaction of the dental pulp and clinical course.