Adhesive Materials

Objectives

After studying this chapter, the student will be able to do the following:

1. Describe an “adhesive.”
2. Explain the difference between micromechanical bonding and macromechanical bonding and provide an example of each type.
3. Recall three benefits the patient receives from restorations that are bonded to tooth structure.
4. Compare the differences between the microanatomy of enamel and dentin regarding etching and bonding. The comparison should include the following terms:
   - Orthophosphoric acid
   - Enamel tags
   - Smear layer
   - Hybrid layer
   - Primer
   - Adhesive
5. Discuss two of the earlier fallacies about dentinal bonding and how research has changed current practice.
6. Summarize the main differences between glass ionomer cements and dentinal bonding.

Key Words/Phrases

- acid etching
- adherend
- adhesive
- adhesive failure
- biofilm
- cohesive failure
- dentinal bonding
- enamel bonding resin
- enamel tags
- glass ionomer cements
- hybrid layer
- hydrophilic
- hydrophobic
- interface
- macromechanical bonding
- margins
- microleakage
- micromechanical bonding
- micropores
- orthophosphoric acid
- percolation
- polycarboxylate cements
- postoperative sensitivity
- primers
- resin tags
- smear layer