Removal and replacement of restorations as a result of secondary caries, in many instances, offer a real problem (1). One of the major shortcomings of the restorative materials, was the lack of adhesion to the tooth structure (2-5). The restorative material that does not bond to tooth structures are more susceptible to allow oral fluids and debris to penetrate at the tooth-restoration interface. This might lead to recurrent caries and/or failure of restorations (6,7).

Attempts were done to minimize marginal leakage by using cavity liners or varnishes (1,8). Their ability to reduce leakage, penetration of bacteria and soluble ions into the underlying dentin has been demonstrated. However, because of their inferior physical and chemical properties in comparison with the conventional restorative resins, these materials do not provide a satisfactory solution to the problem of marginal leakage (9).

Although the composite restorative resins in conjunction with the acid etching technique have been used successfully for many years in clinical practice (10,11). The acid etching technique has shown the greatest potential in reducing marginal leakage (12-15).

Thus, the objective of this study, was to evaluate the occurrence of secondary caries like lesions in relation to conventional and microfilled composite resin restorations.