

Evaluation of prognosis and cause of failure in 182 cases of autogenous tooth transplantation

Jae-Yong Jung*, Eui-Seong Kim, Seung-Jong Lee

Department of Conservative Dentistry, College of Dentistry, Yonsei University, Seoul, Korea

I. Objectives

Autotransplantation is a viable option for the treatment of a missing tooth or for replacement of avulsed and traumatized tooth when there is a donor tooth available. The maintenance of healthy periodontal ligament cells in the donor tooth is one of the most important factors for successful tooth transplantation. The purpose of this study was to evaluate the prognosis and the cause of failure in 182 auto-transplanted teeth.

II. Materials and Methods

A total of 182 cases which received the auto-transplantation in Department of Conservative dentistry, Yonsei Dental Hospital were included in this study. All transplantation were done using computer-aided rapid prototyping technique with the average extra-oral time of 7.58 minutes. Follow-up was performed at least 2 months up to 60 months after the surgery. Prognosis was divided by complete healing, incomplete healing, uncertain healing, and failure. The initial stability, root resorption, ankylosis were also analyzed.

III. Results

Most of transplanted teeth showed the complete healing between 2 months and 8 months. Good initial stability of transplanted teeth showed better initial healing than in poor initial stability. Nine cases(4.5%) failed and, 4 cases(2.2%) showed root resorption. Major causes of the failure were periodontal involvement and the lack of endodontic treatment. Radiographically visible ankylosis occurred in 18 cases but the involved teeth were all in good function.

IV. Conclusions

This study showed 4.5% failure rate in short and intermediate observation period. It is postulated that autotransplantation can be a very useful method in replacement of missing tooth of the extra-oral time and the other factors are well controlled.