

Implant Survival Rates and Endodontic Treatment Sooyoung Kim, DMD¹ • Kim M. Emanuel, RDH² • Sung-Kiang Chuang, DMD, MD³

ABSTRACT

In this retrospective cohort study, implant survival rates at or adjacent to sites with previous root canal treatment (RCT) were studied. The sample was composed of 619 implants (placed from 2001 to 2007) and categorized into three groups. Group 1 was composed of implants placed at sites with RCT history. Group 2 included implants placed adjacent to tooth/teeth with RCT on either/both sides. Group 3 was a control which did not meet the above conditions. Appropriate descriptive, Kaplan-Meier (K-M) survival analysis was computed to obtain and compare 1-year survival rates of these three groups. The 1-year survival rates for Group 1, Group 2, and Group 3 were 95.9%, 97.4%, and 99.1%, respectively. The control group had the highest survival rate at 1 year when compared with Group 1 or 2. However, all three groups are consistent with reported successful 1-year survival rates over 90%.

INTRODUCTION

It is an important question to ask in dental treatment planning how previous history of endodontic treatment influences survival rates of implants placed at or adjacent to endodontically treated sites. There have been only a few case reports and one retrospective study available for implants placed at previously endodontically treated sites [1-3] or adjacent [3, 4] to these sites. The results of these reports, however, are contradictory to one other. These conflicting results call for a study with a significantly large sample size and appropriate statistical analysis.





Both success and failure reported (1995–2007)

- 4 case report/series articles [2,4,5,8]
- •1 Animal study [7]
- 1 retrospective study with 8 implants at failed endo site [6]

Both success and failure reported (1998–2005)

- 2 case reports [1,8]
- 1 retrospective study with 50 implants adjacent to adjacent teeth with apparent endodontic pathology [9]
- Implant failure adjacent to asymptomatic endo-treated teeth

In this retrospective cohort study, we attempt to assess survival rates for implants placed at or adjacent to the sites with previous endodontic treatment using a large sample size. We report 1-year survival rates of implants placed at sites with previous non-surgical endodontic treatment and of implants placed at sites adjacent to endodontically treated teeth. Their survival rates were compared to the control group without previous endodontic treatment at the site and adjacent to the site.

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MATERIAL AND METHODS

A retrospective cohort study was conducted in order to assess impact of previous endodontic treatment on implant survival rates. The cohort was composed of patients having implants placed from July 1, 2001 to December 31, 2007 at the Implant Dentistry Centre in Boston.

INCLUSION CRITERIA

Inclusion criteria for the cohort were as follows:

- Implants placed using the 1-stage or 2-stage method
- Implants that had 90 or more days of healing from implant placement to date of uncovering
- Implants that had surface coatings of Integra-Ti[™] (grit-blasted acidetched), Integra-CP[™] (HA), and TPS (Titanium Plasma Sprayed)
- •All patients shall be included (no restrictions based on health status, smoking, etc.)
- Implants that are placed at an endo site, adjacent to an endo site, or both at and adjacent to an endo site
- •Implants placed immediately after extraction and delayed after the extraction were both included and evaluated

PRE-OP

ENDOSITE



ADJACENT TO ENDOSITE

CONTROL

















CONTRO

These results are consistent with other studies, which used the same type of implants used in this study. In those studies, 1-year survival rates ranged from 93.9 – 95.2% [10, 11].

The 1-year survival rates for Group 1, Group 2, and Group 3 were 95.9%, 97.4%, and 99.1%, respectively. The control group had the highest survival rate at 1 year when compared with Group 1 or 2. However, all three groups are consistent with reported successful 1-year survival rates over 90%. A more rigorous statistical analysis will be performed on the dataset to test for significance.



	RESULTS	
	NUMBER OF IMPLANTS	1-YR SURVIVAL RATE
	297	95.9%
	79	97.4%
DL	243	99.1%

CONCLUSION

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