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/side of both. 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 93.9%, 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.

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™ (gri-blasted acid-etched), 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

RESULTS

<table>
<thead>
<tr>
<th>GROUP</th>
<th>NUMBER OF IMPLANTS</th>
<th>1-YR SURVIVAL RATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONTROL</td>
<td>243</td>
<td>99.1%</td>
</tr>
<tr>
<td></td>
<td>297</td>
<td>95.9%</td>
</tr>
<tr>
<td></td>
<td>79</td>
<td>97.4%</td>
</tr>
</tbody>
</table>

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].

CONCLUSION

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.

REFERENCES

1. Shaffitz, MD et al., OOOOE, 1998; S5(5): 578-81