Endodontic and Implant Algorithms

W.R. Bowles, DDS, MS, PhD[a,*], Melissa Drum, DDS, MS[b], P.D. Eleazer, DDS, MS[c]

KEYWORDS

• Endodontic • Implant • Esthetic • Restoration

Dental professionals often face challenges when formulating a treatment plan for patients presenting with a compromised tooth, and have a duty to provide appropriate care for these patients to maintain dental health and esthetics. A common dilemma involves the decision between tooth retention using endodontic treatment with crown restoration, and extraction and an implant-borne restoration. Endodontic and implant restorations are performed daily by dentists and specialists. For endodontic treatment, estimates for the year 2000 were 30 million endodontic procedures annually (American Diabetes Association), while the number of patients receiving endosseous implants were estimated annually at 300,000 to 400,000 in 1996 and 910,000 in 2000 (Millennium Research Group). This may be a conservative estimate, according to the authors, because there has been an average growth rate increase of more than 40% annually for the 10-year period from 1997 to 2007 at the University of Minnesota (**Fig. 1**). In the year 2008, for the first time, the authors had seen a drop in the number of patients receiving implants, and this may have been because of the economic downturn or the generational changes that were occurring (in that the authors are now seeing less completely edentulous patients, while their partially edentulous patient population continues to increase).

OUTCOMES

In deciding on an appropriate treatment plan, the outcomes of treatment play a key role. The definition of success for dental implant studies is often implant survival, whereas root canal studies measure the healing of existing disease and the

This work was supported in part by a research grant from the American Association of Endodontists Foundation.

[a] Department of Restorative Sciences, University of Minnesota School of Dentistry, 515 Delaware Street SE, Minneapolis, MN 55455, USA
[b] Department of Endodontics, The Ohio State University School of Dentistry, 305 West 12th Avenue, PO Box 182357, Columbus, OH 43218, USA
[c] Department of Endodontics and Pulp Biology, University of Alabama at Birmingham, 4256 Sharpsburg Drive, Birmingham, AL 35213, USA
* Corresponding author.
E-mail address: bowle001@umn.edu

Dent Clin N Am 54 (2010) 401–413
doi:10.1016/j.cden.2009.12.008 **dental.theclinics.com**
0011-8532/10/$ – see front matter © 2010 Elsevier Inc. All rights reserved.

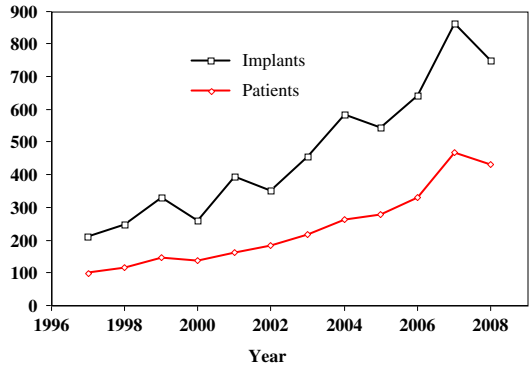

Fig. 1. Number of patients receiving implant treatment at the University of Minnesota and the total number of implants placed from 1997 to 2008.

occurrence of new disease.[1] The use of lenient success criteria in implant studies may translate to higher success rates, whereas stringent criteria used in root canal studies may lead to lower success rates.[2–4] To establish accurate comparisons, it is critical that the same outcome measures be used to assess endodontic and implant restorations. Because of these differences in the meanings of success, it is probable that survival rates will permit less biased, albeit less informative comparisons.[1,5–7] Often the stringent criteria in past endodontic studies have labeled some cases as failures when they were healing.[8]

Other factors can also affect outcomes, such as the restorative impact with endodontics. It has been shown that unrestored endodontically treated teeth were significantly more likely (4 times) to undergo extraction.[9] This restorative impact has been demonstrated by many investigators.[10–15] Examples of how restorations on endodontically treated and severely damaged teeth fail are shown in **Box 1**. Suggested restoration guidelines are shown in the flow chart shown in **Fig. 2**. Before using the flow chart, preliminary steps need to be done, which are shown in **Box 2**.

When evaluating the quality of the root canal treatment, common misconceptions surround what can or cannot be addressed with retreatments, endodontic surgery,

Box 1
How restorations on endodontically treated and severely damaged teeth fail

1. Stress breaks anatomic crown at the neck of the tooth
   a. Not strong enough ferrule (length and thickness)
   b. Core/tooth structure interface fails, shell of tooth structure suffers from stress, tooth structure fracture, crown fracture

Solution: Unless there is adequate length and thickness of ferrule, extract the tooth. Unless there is enough tooth structure available for mechanical retention or bonding, use cast dowel and core.

2. Cast dowel and core comes out from the root cement because it is not strong enough to withstand stress, especially under lateral or para-functional stress

Solution: Use resin cement for cast dowel and core and prefabricated post.

(*Courtesy of* Dr Wook-Jin Seong.)

Download English Version:

https://daneshyari.com/en/article/3131107

Download Persian Version:

https://daneshyari.com/article/3131107

Daneshyari.com