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Implants

AAE Position Statement

Introduction

The American Association of Endodontists has as its mission the fostering of excellence in endodontics and the highest standard of patient care. Our vision is to be a global resource in endodontic knowledge for the profession and the public.

Dentists and their patients have many alternative treatments available to preserve or replace diseased teeth. In the case of teeth with irreversible pulpal disease, endodontic therapy is a highly predictable method to retain teeth that otherwise would have been extracted. Many large studies show retention rates of more than 90 percent [1, 2]. Alternatively, extracted teeth may be replaced with implants [3-6]. Considerable progress has been made in restoring oral function for patients, but considerably less progress has been made in identifying the best strategies for selecting one treatment approach over another [7, 8], and accordingly, no guidelines set forth by the dental profession regarding endodontic versus implant therapy currently exist. This statement is intended to offer the AAE's position on this issue.

Treatment Planning Based on the Best Evidence Produces Ethical and Effective Results

Although there is a lack of clinical trials that directly compare one treatment approach to another [7, 8], there are generally accepted guidelines for the ethical consideration of treatment planning and informed consent. These ethical guidelines provide a framework for all clinical decisions.

Quality dental care can only be provided when treatment planning decisions are made by both the dentist and the patient, based on the patient's general health status and specific oral health needs [9, 10]. The recommended treatment should be safe, predictable, cost-effective, respectful of patient preferences, aimed at preserving normal anatomy and function, and based upon the best available scientific evidence [10-12].

Evidenced-based dentistry incorporates into dental practice "judicious integration of systematic assessments of clinically relevant scientific evidence, relating to the patient's oral and medical condition and history, with the dentist's clinical expertise and the patient's treatment needs and preferences" [12].

There is a growing body of evidence to assess the outcomes of both endodontic and implant therapy. Most studies of endodontic therapy analyzed the success or failure by using criteria that included both clinical and radiographic measures, while most studies of single tooth implant treatment reported the outcome as survival (the implant was still in place), or failure (the implant had been removed.)

A critical analysis of the applicable literature requires categorization of the level of evidence to assess its validity, clinical relevance and clinical importance [13]. Consideration must also be given to study design issues. In comparing studies involving different treatment modalities, the consideration of the dependent measures observed is especially important [14]. In the case of endodontic or implant therapy, no prospective studies, and only one retrospective study, compare the two directly.

Comparing studies that measure survival is a valid means to compare endodontic therapy and implant treatment. A recent major literature review conducted by the Academy of Osseointegration found equal survival rates of single tooth implants and restored endodontically treated teeth [11]. These results are consistent with the only study to date directly comparing single tooth implants and restored endodontically treated teeth [15]. Both therapies had overall survival rates of 94 percent, thus providing predictable outcomes. Therefore, the decision to treat a tooth endodontically or place a single-tooth implant should be based on other criteria including restorability of the tooth, quality of bone, esthetic demands, cost-benefit ratio and systemic factors.

Along with overall survival rates of the therapy provided, treatment planning must also consider risk factors. For implant treatment, risk factors include: smoking, diabetes, decreased estrogen levels in postmenopausal women, bone quantity and quality, and use of IV bisphosphonates [17-24]. Risk factors for nonsurgical endodontic therapy include: diabetes, apical periodontitis and inadequate coronal restoration [25-28].

Ethics of Clinical Practice

The dental profession acknowledges the special position of trust given by society, and reciprocates with a promise of adherence to high ethical and clinical standards. These standards, set forth in the American Dental Association's *Principles of Ethics and Code of Professional Conduct*, have the benefit of the patient as their primary goal [9].

One of the key elements of this ethical code is patient autonomy and respect, as exemplified by the need to involve patients in the decision making process during treatment planning, with due consideration to the patient's needs, desires and abilities [9]. Treatment provided that does not rest on informed consent, is not based upon the best evidence, and is not in the best interest of the patient, is unethical. Inappropriate treatment, such as: performing endodontic therapy on nonrestorable or periodontally hopeless teeth; or placing single-tooth implants when the natural tooth could predictably be retained, would also be considered unethical. Failure to adhere to these principles not only violates the trust placed in the dental profession, but leaves the dentist vulnerable to litigation. Another significant component of the code of professional conduct involves appropriate consultation. All dentists, specialists and generalists alike, are expected to practice within a clinical standard of care defined as 'prudent and competent' [29]. Whenever patient welfare would be safeguarded by utilizing the knowledge, skills and experience of a dental specialist, consultation is appropriate [9].

Conclusions

1. Clinical treatment decisions regarding endodontic or implant therapy must always be made in the best interest of the patient.
2. These treatment decisions should always be based on the best, most current evidence.
3. The decision to treat a tooth endodontically or replace it with an implant must be based on factors other than treatment outcomes.
4. Practitioners are ethically bound to inform patients of all reasonable treatment options.
5. The standard of care must be applied equally to all practitioners, generalist and specialist alike. Due consideration should be given to patient referral for the evaluation and advice of specialists in retaining natural teeth.
6. Endodontic treatment is a most predictable procedure when the clinician accomplishes correct diagnosis, appropriate treatment planning, thorough instrumentation, complete obturation with coronal restoration, and compassionate and effective care.

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