Man is presently trying to be positively constructive and conservative, and thus from forest to fuel, all forms of energy are being judiciously utilized, so that the gifts of nature can be conserved. The survival rate of human life has itself increased, thanks to the peak of this realization. Once felt near to impossible and very difficult jobs are being undertaken toward this endeavor. Oro-maxillofacial structures including natural teeth are being preserved in an attempt toward this goal. The increase in the role of conservative dentistry by leaps and bounds in the past two decades is evidence in itself and self speaking. Based on a recent report, Spangberg suggested that if the full scope of endodontic treatment options is used, there are very few teeth that cannot be retained.

Restored endodontically treated teeth and single tooth implant restorations have been shown to encompass similar failure rates and in spite of higher incidence of postoperative complications, the implant group showed a longer average and median time to function. Such apparent success rates and comparison of single-tooth implants with endodontic therapy often influence the general dental practitioner’s neutrality while selecting the treatment options. The purpose of this article is to overview this current prospective of endosseous dental implant and conservative management.

Factors Affecting Conservative Management Outcome

The Strindberg criterion of complete bone healing remains the “gold standard” for scientific evaluation of successful endodontic treatment. General systemic factors effecting the healing of a lesion may somehow be related to the endodontic treatment outcome in cases having preoperative periradicular lesions and radiolucency. Various reports have suggested that increased age, smoking and systemic multiple...
This remains true while making the predictable surgical placement techniques have among the clinicians and patients. Improvements led to greater acceptance of endosseous dental implant rate, which have been published in this decade, have

IMplants’ success factors affectIng endosseous dental tooth conservation.

and quality of active periodontal therapy outcome for related and patient-related factors for risk, prognosis that may predispose the periodontium to disease; Blieden et al., also result in a high level of success. Few reports have suggested the importance of core than that of post for the long-term success of endodontically treated teeth. To prevent coronal leakage or fracture, teeth undergoing endodontic treatment must be restored at the earliest possible. Torabinejad et al, found bacterial contamination up to the apex as early as after 18 days in a coronally unsealed root canal filled tooth.

Salehrabi and Rotstein, in an epidemiological survey, analyzed the variable factors affecting the endodontic treatment outcome. Because of easy accessibility and less complicated canal configuration, anterior teeth exhibit higher success rate followed by premolars and molars, both in non-surgical and surgical root canal therapy. Use of rubber dam and aseptic conditions, intracanal medicament such as Ca(OH)₂, IKI, CMPC, and type of canal irrigant used in various concentration along with the technique, the size up to which the apex is enlarged and apical extent of filling may have an impact on the success rate. High quality endodontic and restorative procedures, when performed by endodontists, also result in a high level of success.

Blieden elucidated several conditions around teeth that may predispose the periodontium to disease; Eickholz et al, and Pretzl et al, analyzed tooth-related and patient-related factors for risk, prognosis and quality of active periodontal therapy outcome for tooth conservation.

**Factors Affecting Endosseous Dental Implants’ Success**

Uprising long-term studies showing excellent success rate, which have been published in this decade, have led to greater acceptance of endosseous dental implant among the clinicians and patients. Improvements in fixture and abutment designs along with more predictable surgical placement techniques have revolutionized the field of implantology.

Numerous factors have been shown to contribute to the predictability of implants. Biologic factors related with implant success include the ability of the body to tolerate the implant material. Inadequate osseointegration occurs due to formation of fibrous connective tissue at the implant–bone interface as a result of overheating of the bone during placement or poor quality bone. Patients’ factors such as systemic disease, smoking, economics, inflammation at implant site, bacterial infection, compliance, motivation and oral hygiene maintenance, along with location, bone quality and quantity have also been linked to the implant therapy. Diabetes, osteoporosis, decreased estrogen levels in postmenopausal women and use of intravenous bisphosphonates are other important risk factors associated with implant treatment. Excessive biomechanical forces on implant during maintenance phase may result in loss of osseointegration around the neck of the implant. Factors that must be considered before implant placement include the presence of periodontal disease and caries which may lower the implant longevity.

Recent professional acceptance of implants in esthetic areas because of better presurgical planning guidelines, more options in diameter of implant fixtures, greater variety of abutment, better fit of the abutment to the implant fixture, better placement of the fixtures accurately with surgical guides, better techniques for preparing the edentulous site and better prosthetic techniques to produce a highly esthetic final restoration, has significantly changed treatment planning and raised both the dentist’s as well as the patient’s expectations with more predictable options to replace a missing anterior tooth.

**Decision Making While Selecting Treatment Options**

Although the emphasis has been made in reinstating the oral functions, less consideration has been given to formulate the best treatment tactics in a particular situation. This remains true while making the decision regarding the conservation of natural tooth or implant placement and under these circumstances, clinicians must consider many factors in making a treatment protocol based on best available evidences along with the patient’s desire but within the ethical constraints. Complete informed consent protocol includes the discussion of all available treatment options, advantages and disadvantages of each option, risks and costs of each procedure. In addition, clinician must inform the patient about the consequences in case, if none is opted. The following factors may affect the decision making.
Smoking and poor systemic health contraindicates the implant placement, but very few factors may have the potential to influence the endodontic therapy, and while considering the overall health, latter is preferred.[17,29]

Discernment of the psychological and physiological distress related to each therapy by the patient is an important factor in decision making and clinician should discuss the possible discomfort to be anticipated with the therapy.[29]

Practitioner’s expertise in particular field of dentistry should not influence the overall treatment protocol and consultation from a specialist should be encouraged for the betterment of the patient.

In the clinical situations where implant placement may not completely fulfill the esthetic expectations, conservation of the teeth should be considered.

Retention of a tooth with a poor long-term prognosis via endodontic treatment as in crack tooth syndrome can lead to substantial bone loss resulting in osseous defect that substantially affects the esthetics, and in such an instance, early removal of questionable tooth with immediate implant placement may produce a suitable environment and optimal esthetics.[13]

Periodontally hopeless teeth may require extraction, but poor oral hygiene is associated with reduced implant survival.[17] Periodontal biotype affects the potential for soft tissue to fill the cervical embrasure space around implants and in presence of a thin biotype, papillae adjacent to implant placement seldom can be created when the distance between interproximal papillae is more than 4 mm. Preservation of the tooth through root canal therapy may provide a better option for appropriate esthetic than implant therapy when the biotype is thin but healthy around a natural dentition.[13]

Mandible or the premolar and anterior portions of maxilla are the best locations for implant placement and implants tend to have greater survival in host bone compared to grafted bone. Poor quality (density) bone or proximity to anatomical structures should convince the clinicians to retain the teeth.[29]

When there is limited remaining tooth structure and definitive crown will not be able to engage at least 1.5–2.0 mm of tooth structure with a cervical ferrule, endodontic therapy is contraindicated, and implants are indicated when teeth cannot be prepared with adequate retention and resistance form even after post and core placement.[13] Edentulous sites adjacent to teeth without restorations or the need for restorations and edentulous sites adjacent to abutment teeth with large pulpal chambers,[13] atypical root canal anatomy[29] and history of avulsion or luxation, are also included in indications for implant therapy.[13]

Assessment of potential procedural complications requires adjunctive procedures, and treatment outcome data are treatment-related factors affecting this critical decision.[13]

**Discussion and Conclusion**

Functionally, a well-osseointegrated implant differs from a tooth in the absence of periodontal ligament, and hence the absence of cushioning effect, proprioception and lack of regenerative potential that limits its ability for repair, and unlike the periodontal ligament, implants do not play an active role in the dynamic maintenance of that bone. Current trends in implantology have weakened the conservative paradigm, and practitioner’s objectivity has been inclined more toward providing the tooth substitutes often flaunted as equal or even superior to conservation of natural tooth. Real purpose of introducing endosseous dental implant was to “replace the missing teeth”[2] and by no means has implantology represented the only significant recent advancement in dentistry. Use of microscopes, nickel-titanium files, computerized apex locators, ultrasonic instrumentation, advanced obturation techniques, etc., have enabled the practitioners and endodontists to perform endodontic treatment with greater precision and efficiency, fewer errors, and better success rates, and similarly, advances in periodontal regenerative therapy, reversing the process of supporting alveolar bone loss, have also occurred in last decade and offered greater potential for successfully maintaining compromised teeth than ever before.[30] Properly restored root canal treated natural teeth surrounded by healthy periodontium tissues yield a very high longevity and periodontally compromised teeth that are treated and maintained regularly have a survival rate of 92–93%.[2]

End point descriptor in endosseous dental implant studies is frequently indistinct and the desirable result often characterized as a “retained implant” and ironically, implants with signs of peri-implant infection and maintained by adapted antimicrobials were not considered to be failures. On the other hand, healed periapical lesion after a quality treatment, followed by proper restorative maintenance, will not fail later due to endodontic reasons and complications as tooth fractures, often mentioned as a strong negative factor against restoring and preserving endodontically treated teeth, may be associated more with the substandard prosthetic work and poor material choices.[2] Furthermore, misinterpretation regarding the success
of “endodontic retreatment” resulted in a large pool of teeth being replaced by single tooth implants.

In the end, it can be concluded that although recently published data emphasize more on greater success rate of implants and compared them with the survival of endodontically treated teeth, however, its purpose to “replace the missing tooth, not the tooth itself” should never be overlooked. Endodontic treatment is the most predictable procedure when the clinician accomplishes correct diagnosis, appropriate treatment planning, thorough instrumentation, complete obturation with coronal restoration, and compassionate and effective care, and by combining the expertise of outstanding endodontic care, we can save our patients’ natural teeth with years of satisfaction and improved quality of life. Saving a functional natural tooth in a young individual and later on implant placement if required results in a longer functioning tooth, which is obtained by the combined survival duration of endodontic treatment and then by implant. Full-hearted considerable patient-centered effort, based on scientific evidence should be made while preserving the biologic environment along with maintaining or restoring esthetics, comfort, and function.

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**Source of Support:** Nil. **Conflict of Interest:** None declared.