

Roots online community opens door to implant specialty

Author_ Kenneth S. Serota, Canada

An interview with Dr Kenneth Serota, who in 1998 founded the Roots cybercommunity and the rxroots.com Website to provide educational and networking opportunities to endodontic specialists and general dentists practicing endodontics. In January 2007, the rxroots.com site was revamped and its features replicated in a new Website for the implant dentistry community, rximplants.com. Dr Serota recently took the time to speak with us about the new and renovated Websites and what he calls the "nexus" of the endodontic and implant specialties.

_roots: Why did you want to integrate the Roots Website with an Implants site? What does this say about the synergies between the two disciplines?

_Serota: I chose to integrate Roots and Implants simply because endodontics is the essential foundation of all reconstructive dentistry. Implants is the biomimetic exemplar of reconstructive dentistry. There is a very realistic algorithm that is essential in choosing one instead of the other. Essentially, they both work. Where they both seem to fail is in the realm of the restorative component. As such, there is increasingly a unification phenomenon in terms of how implants and endodontics must be seen. Implants replace missing teeth, not teeth; however, in both disciplines, the foundation, the occlusion, and the functional consideration of the rehabilitation leads to the ultimate success. If we as a profession recognize that endodontic treatment in whatever context will preserve the integrity of the dentition, we can then see implants in the true light of replacement of irretrievably damaged components, not as an expedient alternative.

_Why do you think endodontists and implant specialists need to be talking to one another?

_I think all specialists need to be talking to one another. Comprehensive care has always been the necessity, just sadly not the reality in far too much treatment. The trees are often treated, not the forest. I feel that implants have become a force of nature that at this point is driving by default, but will in time drive by design, the integration of all the "specialties" of dental care. Regardless of how you practice or where you practice, the essence of quality is integration of all the parts in harmonious function. Nowhere is that more integral than in the foundation components.



_Did the implants website exist already, or is it totally new? How are you attracting implant specialists to the site?

_The new Implant site is at the moment a mirror of the Roots site. In both cases, we've added a Marketplace using Flash coding and expanded the Digital Library for posting cases. In this way, we can link a nexus of industry and professional education without stepping on toes. We intend to factor in 3-D patient and professional education in what are ostensibly parallel communities. The sites as they are continually being developed will incorporate functionality relatively unseen on most dental sites. That will take funding and time, but it will happen. For now, the sites are



Fig. 1



Fig. 2a



Fig. 2b

repositories or archives for all things endodontic- or implant-related, and provide the link to the Roots and Implant discussion forums. They are two different membership databases, but have the ability to cross post.

_What are the primary improvements to the site over the old Roots site?

_The membership signup is far more intuitive and automated, and the unsubscribe feature is designed to be easy so that folks can literally come and go.

Marketplace is a real attempt to stop the commercialism of so many sites. Rather than bombarding members with constant ads, the Marketplace provides a 24/7/365 exposition hall for vendors to showcase new products, offer the cybercommunity consideration on purchase, or develop focus groups through the cybercommunity. The design is analogous to walking down the aisles at a convention. I hope that vendors will see that setting up a "booth" that is active 24/7/365 is a very positive way of showcasing what they provide and in turn bringing people to sites to hear how their products are used. Monies from the purchase of "booths" go toward scholarships for folks who otherwise could not attend the annual Roots Summit (see the Roots Summit link on the rxroots.com site for more information).

The Digital Library enables anyone to post cases and retrieve articles or animations or PowerPoint presentations—whatever anyone wishes to share. We also plan to establish an automated Case Report Template to facilitate creation of journal-quality submissions to help potential authors develop a sense of how to get their work published in the print media.

_What about Coaches Corner? How does it work and what is its intent?

_Coaches Corner is basically an email link to info@rx-roots.com and info@rximplants.com. You don't have to belong to the cybercommunity and receive all the

mail. If you have a question or concern about a treatment or diagnosis, you can post the inquiry to the "coach," remain anonymous to the group, but have the question answered by as many as 2,000 members.

Coaches Corner is for those who wish to seek diagnostic, treatment planning, or any other advice from the membership, without being on the forum. The questions are posed and the answers returned...it's basically "Ask the Expert," with a twist.

_What other features are you planning?

_I have a series of alpha pages or flat pages ready to be coded, but the monies just aren't there yet. In the future, we intend to create RSS feeds, post 3-D animations in PDF format, and create a "virtual faculty" with real-time, hands-on courses, so that we can integrate webcasts, etc., with laboratory-based sessions. I feel we can also help people use the ever-proliferating hand-held devices to learn to communicate with one another. The end game is "Move records, not patients." The day of the multidisciplinary virtual consultation is near, as the technology is here. The goal will be to use Roots and Implants and whatever else arrives to drive that engine.

_What's in the future for the Roots online community?

_We may well one day include sites for ortho, lasers, occlusion, cosmetics, etc. That's why our parent site is called rxdentistry.com. For now, it's Roots and Implants. The others will come if we can get folks to realize that integration and unification is the goal, not commerce, banners, and idle chatter.

If opinion leaders and academics in each of the fields participate in this type of forum, the potential of journals, cross-postings, and other channels will in time create true comprehensive care treatment planning—or as I feel it will be called in time—unification treatment planning: an integrated, harmonious synergy of all disciplines in staged and defined sequencing.

Fig. 1 _The rxroots.com and rximplants.com sites share a common portal designed to illustrate the synergies between the two specialties.

Figs. 2a–b _Both sites provide an entry to discussion forums, a Digital Archive of cases and presentations, a Marketplace providing access to industry manufacturers and suppliers, and Coaches Corner, an "ask the expert" feature.

A tale of two specialties: the endodontic/implant algorithm

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Figs. 1a-c_ The patient's chief complaint was pressure on contact and thermal sensitivity in the mandibular left quadrant. The mandibular first molar had a history of inadequate root canal therapy and the second molar was acutely pulpitic as a result of a leaking amalgam restoration.

Fig. 1d_ Retreatment of the first molar and initial root canal therapy on the second molar were performed and calcium hydroxide left in the canals of both teeth for 2 weeks.

Figs. 1e-f_ The teeth were obturated with gutta-percha and resin sealer and the floor of the chamber bonded with flowable composite resin (Permaflo, Ultradent, South Jordan, Utah). If the biologic mandate for endodontic success is followed during the initial procedure or if reengineering of a failing procedure addresses the microflora as the etiologic vector, predictable clinical success is possible in the majority of cases.

_Change is a significant evolutionary tool provided it rests upon a solid and secure foundation. Innovations in materials and technologies occurring within the dental field are impacting powerfully on its art and science; however, dentistry, like all health care, is both a business and a profession. The pendulum swings that predicate trends and transitions within that nexus must be viewed from a macrocosmic perspective lest we fall prey to expediency in treatment recommendation and execution. There is an almost Faustian reliance on broad outcomes data, which in truth, may not be sufficiently specific to directly impact clinical decision-making.^{1,2}

Rudiments and fundamentals are the abc's of process. While the change from need dentistry to want dentistry is consistent with the societal trends championing botox, collagen, and silicone, it doesn't necessarily reflect an enhanced awareness of the basic precepts of dental health by our client base. Their focus has been shifted away from masticatory harmony and equilibrated function to whitening in all its myriad applications. Nowhere is the disruption in the logical and sequential protocol to optimal dental health more evident than the trend to replace natural teeth with implants. At-risk patient cohorts³ may simply be encouraged to opt for virtual surgery and immediate function as an alternative to rehabilitative therapy.

Implant-driven treatment planning can, if incorporated with vision, foster a melding of the specialties and offer patients a less confusing and fractionated approach to their dental care. Orthodontists are training to place mini implants for the purpose of anchorage. Endodontists can predictably retreat procedural failures;⁴ however, if these teeth are determined to be non-restorable, they can be replaced with osseo-integrated fixtures. Endo/ortho/prosthetic treatment plans include modalities to grow bone where there was none and obviate aggressive bone harvesting procedures. Everything from enamel matrix derivatives to bone morphogenic proteins to stem cell research is directed toward cellular and structural reconstitution. The issue of who does what is not of consequence; what matters most is that we educate patients to understand their options and as a profession work to endlessly elevate the standard of care.

There are a myriad of problems in choosing between implant and endodontic therapies, as they differ profoundly. Different modes of outcome measurements frustrate direct comparison. The factors to be considered include patient-related issues (systemic and oral health, as well as comfort and treatment perceptions), tooth and periodontium-related factors (pulpal and periodontal conditions, color characteristics of the teeth, quantity and



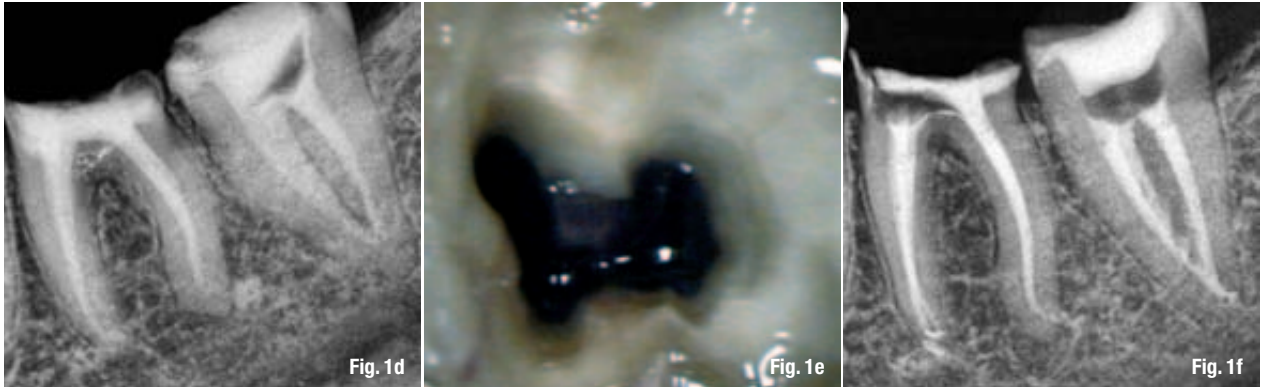
Fig. 1a



Fig. 1b



Fig. 1c



quality of bone, and soft-tissue anatomy), and treatment-related factors (the potential for procedural complications, required adjunctive procedures, and treatment outcomes). Long-term, large, clearly defined studies, with simple and clear outcome measures—for example, survival in combination with defined treatment protocols—are needed to measure the clinical performance of endodontic and implant therapies.^{5,6} Jan Lindhe has stated that implants should be used to replace missing teeth, not teeth. The tragedy of using mathematical manipulation to provide accurate information for informed consent is that the cohort(s) used and the multivariate analysis derived may be altered to prejudice results.

The goal of preserving the natural dentition has long provided the foundation for clinical decision-making in dentistry. Current trends in implant dentistry have weakened this paradigm as many practitioners have moved quickly to adopt implant dentistry as a new standard of care; however, the rapidity of this shift is a cause for concern among others. Many short-term studies have reported favorable data supporting the growth of single-unit implant dentistry, but the lack of standardized outcome evaluations and broadly conceived dimensions of performance makes it difficult to compare these reports. Thus, even with the exciting new treatment options implant dentistry offers patients and prac-

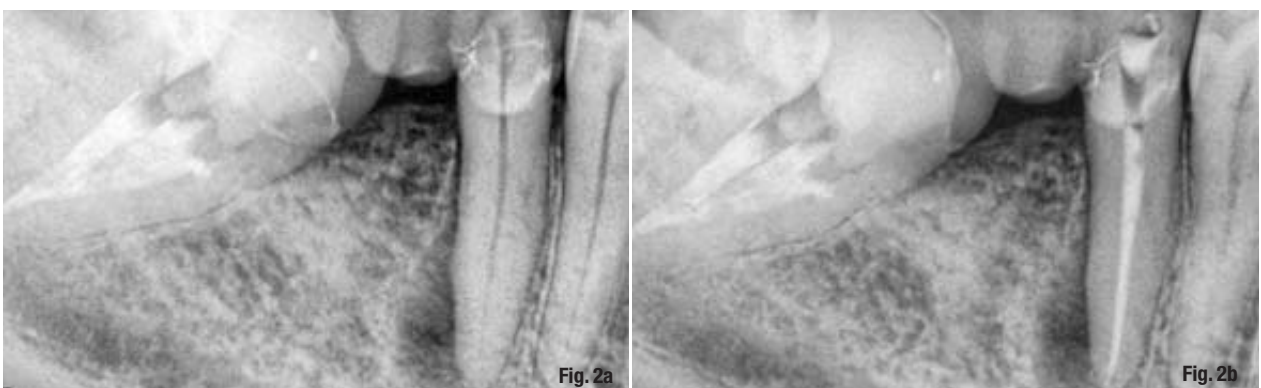
tioners, all due consideration should first be given to treatments aimed at preserving and restoring compromised teeth before pursuing extraction and replacement (Figs. 1a–f and 2a–b).

Based on selected follow-up studies, the chance of teeth without apical periodontitis to remain free of disease after initial endodontic treatment or those with apical periodontitis to completely heal after initial treatment or retreatment and the chance of teeth with apical periodontitis to completely heal after apical surgery is a lower percentage than demonstrated for implants; however, the chance for these teeth to be functional over time is 86 percent to 92 percent, which places them in the same strata as implants. The number of outcome predictors becomes literally arcane beyond the aforementioned obvious variables—intra-operative complications, number of roots, treatment technique, periodontal procedures required, ferrule size, etc.—and yet, all are predictable mainstream procedures.^{7–9} Expediency does not obviate their impact on success and thus the creation of a logical treatment planning algorithm becomes all the more relevant.

In a recent article on paradigm shifts reflecting dentistry's future,¹⁰ a reputable educator reported polling audiences of dentists at continuing education programs as theoretical scientific evidence

Figs. 1e–f With crown lengthening, creation of a proper circumferential ferrule for both teeth, a successful resolution should be achieved.

Figs. 2a–b The mandibular right second bicuspid demonstrated an asymmetrical periradicular lesion. The canal was obturated with gutta-percha and resin sealer and a post channel left to the marker (arrow), which was filled with calcium hydroxide as an interim means of preventing recontamination. The patient was advised that ideally, the FPD planned would not be the most desirable option. Orthodontic uprighting and realignment to create a space for implant placement or orthodontic closure of the space was preferable to the treatment plan in force. The dentist of record did not feel that orthodontics was a necessity to resolve this case ideally. Ideally, this case should have been completed with consideration for axial loading and hygienic maintenance. The choice not to treat in the most interdisciplinary appropriate manner will in all likelihood lead to failure of one or both of the abutments.



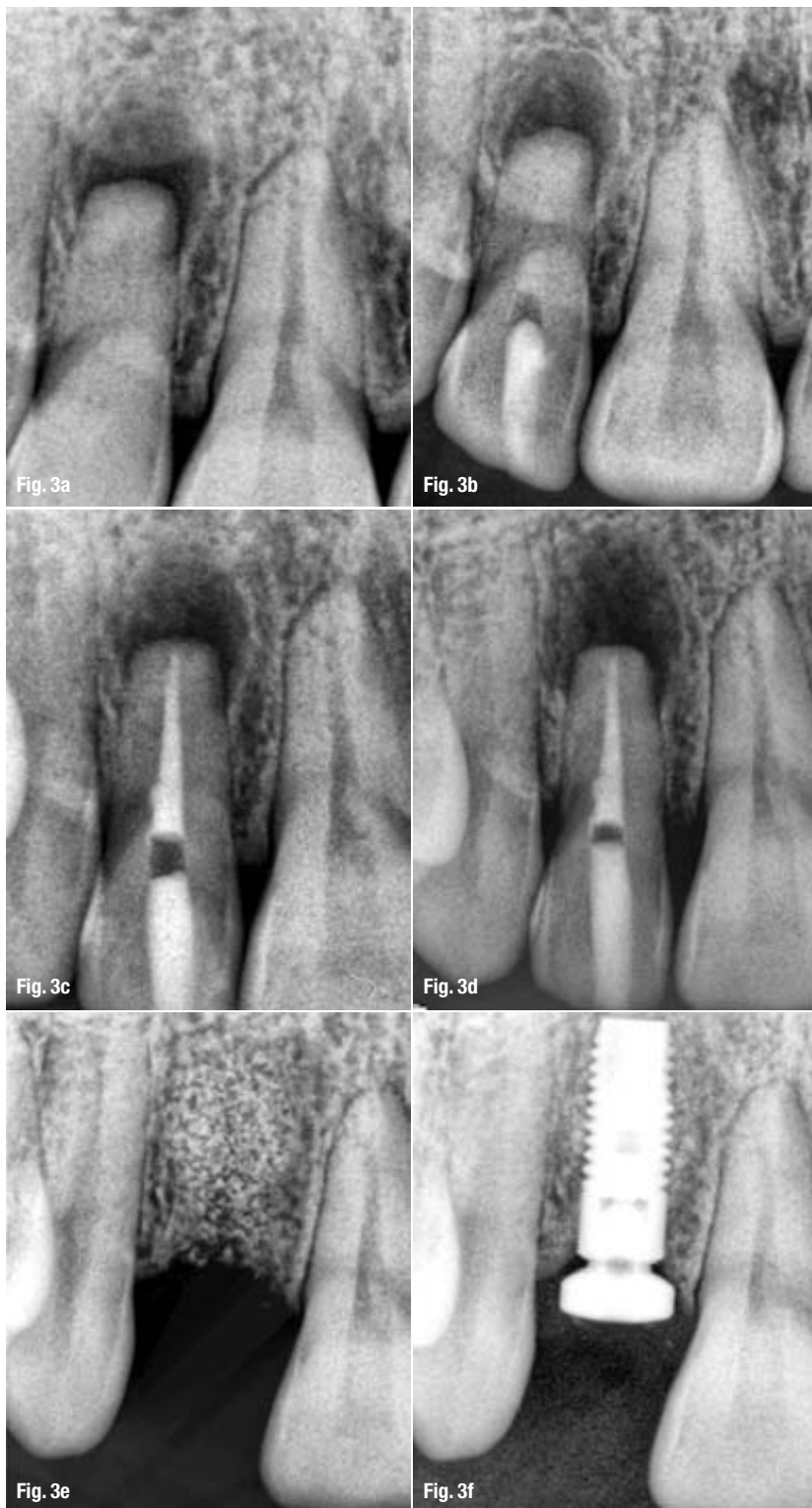


Fig. 3a A radiographic survey identified a rarefied apical area associated with a traumatized maxillary lateral incisor.

Fig. 3b The canal was identified and instrumented, then sealed with calcium hydroxide.

(“Hands up” if you’ve had root canal therapy and residual pain, sensitivity, or awareness of the presence of something untoward remaining associated with the endodontically treated tooth.) The same question posed to the same cohort in regard to those who had implant placement elicited no complaints. The presumption was that dentists seek out other dentists as care providers, thus the expectation that the results should reflect the highest standard of

care. He summarized that the trend to remove endodontically suspect teeth and replace them with implants will continue. The creation of a trend must have substantiation in objective fact, not subjective interpolation. One can only hope that the excesses of the pendulum swing to biomimetic replacement will reverse and dentistry will reframe yet again. The profession needs to revisit all aspects of treatment planning to create a more functionally integrated perspective. The specialties, and those areas with aspirations to be specialties, have operated independent of one another or at best with minimal linkage. The result has been a failed interdisciplinary approach, with the concept of comprehensive care relegated to fulfilling the art of dentistry, but not the biologic science. Nowhere is this more appalling than in the dismissal of endodontic success potential.¹¹

“All credibility, all good conscience, all evidence of truth come only from the senses.”

Friedrich Nietzsche

Endodontics and implant dentistry are in continual experimental states of flux in regard to success predictors and treatment outcome protocols. Any procedure that can be validated by evidence-based science should be factored into comprehensive care. A rush to judgment and anecdotal, empirical bias must never replace case selection, treatment planning and ultimately respect for the healing capacity of a biologic organism. When the natural tooth can no longer be treated within predictable parameters, then the biomimetic option should be presented, taking into account all variables that impact upon its success rate (Figs. 3a–f). The choice is not between implants and endodontics, but between what is restorable and salvageable periodontally vs. implant replacement as an algorithm of functional success. The true decision is not between endodontics and implants, but greater accuracy in diagnosis of fractures of endodontically treated teeth, the success of crown lengthening procedures, and the success of periodontal therapy in regard to marginal periodontitis.

A treatment risk assessment algorithm is one of many tools that will optimize predictable clinical success. In order for the practitioner to successfully integrate any new treatment approach, it must represent inclusion of the new; however, not at the expense of exclusion of the traditional. As such, endodontics and implantology must acknowledge and ultimately embrace the strengths each brings to the equation that creates dental health.

Literature

1. White SN, Miklus VG, Potter KS, Cho J, Ngan AY. Endodontics and implants, a catalog of therapeutic contrasts. *J Evid Based Dent Pract* 2006 Mar;6(1):101–9.
2. Tang CS, Naylor AE. Single-unit implants versus conventional treatments for compromised teeth: a brief review of the evidence. *J Dent Educ* 2005 Apr;69(4):414–8.
3. Fouad AF, Burlison J. The effect of diabetes mellitus on endodontic treatment outcome: data from an electronic patient record. *J Am Dent Assoc* 2003; 134:43–51.
4. Farzaneh M, Abitbol S, Friedman S. Treatment outcome in endodontics: the Toronto Study. Phases I and II: orthograde retreatment. *J Endo* September 2004;30(9):627–33.
5. Becker W. Immediate implant placement: treatment planning and surgical steps for successful outcomes. *Br Dent J* 2006 Aug 26;201(4):199–205.
6. Torabinejad M, Goodacre CJ. Endodontic or dental implant therapy: the factors affecting treatment planning. *J Am Dent Assoc* 2006 Jul;137(7):973–7.
7. Marquis VL, Dao T, Farzaneh M, Abitbol S, Friedman S. Treatment outcome in endodontics: the Toronto Study. Phase III: initial treatment. *J Endod*. 2006;32(4):299–306.
8. Nair PN. Pathogenesis of apical periodontitis and the causes of endodontic failures. *Crit Rev Oral Biol Med* 2004 Nov 1;15(6):348–81.
9. Ichim I, Kuzmanovic DV, Love RM. A finite element analysis of ferrule design on restoration resistance and distribution of stress within a root. *Int Endod J* 2006;39(6):443–52.
10. Christensen GJ. Current paradigm shifts in dentistry. *Dentistry Today* 2007;26(2):90–6.
11. Felton DA. Implant or root canal therapy: a prosthodontist's view. *J Esthet Restor Dent* 2005;17(4):197–9.

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Fig. 3c_ Two weeks later, the canal space was obturated.

Fig. 3d_ Eighteen months later, the apical lesion had increased in size and it was decided to remove the tooth and replace it with an implant fixture.

Fig. 3e_ The tooth was removed atraumatically and the socket site grafted.

Fig. 3f_ Four months later a fixture and healing abutment were placed. The algorithm sequence followed was logical and sequential; the patient understood her options and chose to retain her natural tooth if at all possible.