

# The Endodontologic—Implantologic Dilemma

The last decade has definitively changed the face of contemporary dentistry. The profession has moved from a mechanical, poorly reparative approach to an evidence based biologic oriented science. Endodontology has made its big movements forward based upon introduction of Microscopes, Ultrasonics, NiTi rotary techniques, advanced disinfection protocols and leakage minimizing root canal obturation materials; direct restorative dentistry guarantees today predictable long term results using modern adhesive approaches while implantology excelled with new surface coated implants, CT based prosthetic driven technology.

■ This great steps towards raising the long term clinical outcome results places big question marks around treatment decisions and selections. Literature reviews prove similar 5 years results for RCTs and for Implants—when to perform and RCT and when to indicate an extraction? What are the decision making trees for the different treatment indications. This article would like to offer some compilations of current available literature consequences and help the General Practitioner find a way out of the labyrinth. Before even starting to analyse deeper the questions one must review the differences between a natural tooth and an implant (Fig. 1). Exertising a medical profession the dental practitioner needs to understand that teeth are a different entity compared to implants. The osseointegrated implant replaces a missing tooth identifying reduced protective reflexes and

not allowing for adaptive changes or even bioreparative approaches (Fig. 2). Different papers have been published in the recent years trying to solve the dilemma. Most important are the compilations of the American Association of Endodontists in the US. The AAE has furnished the Endodontic profession with several position papers helping General Practitioners as well as Specialists to offer the patient the best treatment they need—deserve or can afford. To offer an endodontic service to a patient implies considering several conditions out of the different dental specialities (Fig. 3). Let me try to exemplify this just reflecting on restorative dentistry as indicated by the AAE (Fig. 4). Before being eligible to use the above introduced decision tree the dental practitioner needs to possess according prerequisites as mentioned by AAE (Fig. 5). As a next step based upon established dif-

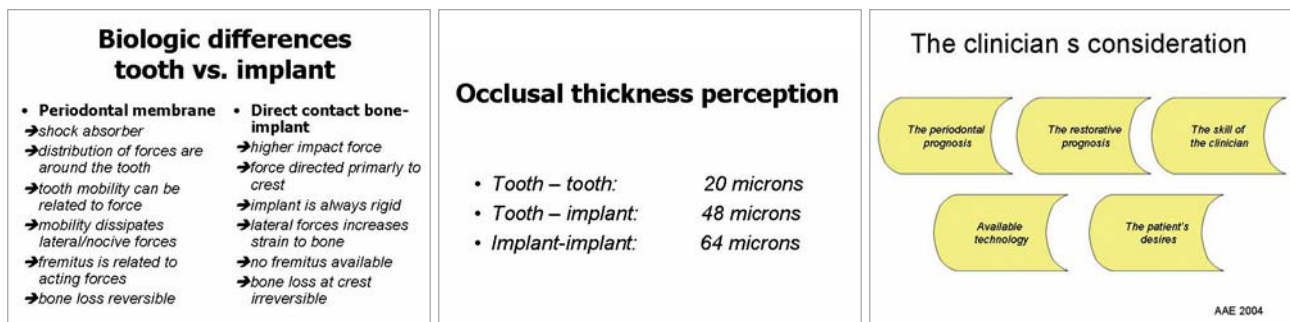


Fig. 1: ???  
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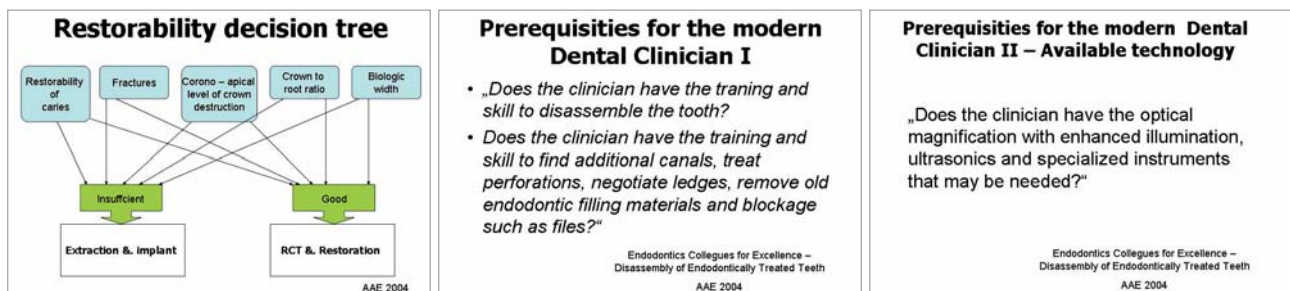


Fig. 4: ???  
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fully assessments (AAE 2006) the General Practitioner may decide to go through the decision tree—perform the service alone or as part of a team specialists (Fig.7). Based upon the criteria for the difficulty assessment the following decision tree may be helpful (AAE) (Fig. 8). Of course the patient himself can not be neglected when treatment decisions have to be taken (Fig. 9). To exemplify the above mentioned I would like to briefly go through some clinical cases.

### Case no. 1 (Figs. 10 and 11)

A 49 years old male patient was referred for nonsurgical RERCT of the tooth 47.

After performing all the required diagnostic procedures (of course it should be mentioned that no mobility was registered among all the other diagnostic procedures) the decision was taken to non-surgical RERCT. Figure 10, 11 X-ray showing a second lower molar with an insufficient RCT—periapical lesion. X-ray showing the success of the RERCT. The RCT was performed under Rubberdam using magnification between 8x and 19.2x (Global G6 Microscope – DP Medical).

### Case no. 2 (Figs. 12 and 13)

X-ray showing an insufficient RCT (with silver point). Going through different decision trees the General Practitioner has referred the patient for nonsurgical RERCT into our practice.

X-ray of the completed RERCT.

Brief description of the RERCT procedure:

- Anesthesia;
- Rubberdam Isolation;
- Coronal straight line access;
- Mechanical shaping using K3 files (SybronEndo) – file sequence VTVT;
- Irrigation protocol for disinfection (Sterilox, 10% citric acid, Smear clear, 2% Chlorhexidin);
- Obturation was performed using Resilon (RealSeal – SybronEndo) in hybrid technique combining the



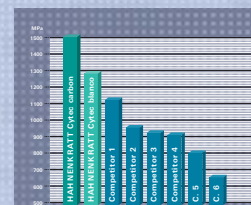
## 3 GUTE GRÜNDE

Unsere Erfahrungen seit 1995 zeigen, dass die hohe Biegefestigkeit unserer Wurzelstifte die beste Voraussetzung für einen dauerhaft hoch stabilen Wurzelaufbau ist.

Hohe Bruchresistenzwerte aus wissenschaftlichen Arbeiten, von **407,0 N** für **Cytec Carbon** und **348,8 N** für **Cytec blanco** beweisen, dass die Kombination von optimierter Biegefestigkeit und Adhäsion die Basis für Ihren erfolgreichen Wurzelaufbau ist.

Der hervorragende adhäsive Verbund ist wissenschaftlich durch hohe Auszugskräfte nachgewiesen.

Die sehr gute Röntgensichtbarkeit ergibt einen hohen Kontrast zu Dentin.



#### STABILITÄT



#### ADHÄSION



#### RÖNTGEN-SICHTBARKEIT

#### INFO-MATERIAL

↓ TEST-SETS (je € 19,95):

Exatec blanco 

Cytec blanco 

Contec blanco 

Bitte Praxisstempel anbringen – Verrechnung über:

Inhalt des Test-Sets: Instrumente + 3 Wurzelstifte | Preis frei Haus (zzgl. MwSt.)

E. HAHNENKRATT GmbH

DE-75203 Königsbach-Stein | Fon +49 (0)7232/3029-0 | Fax +49 (0)7232/3029-99

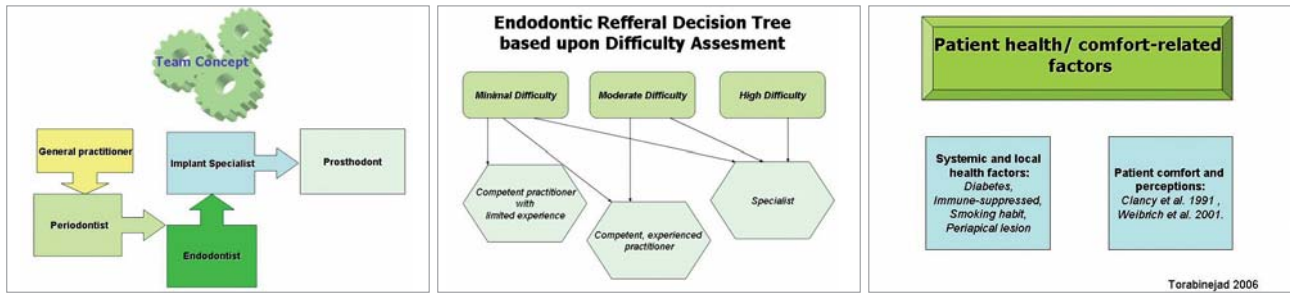


Fig. 7: ???

warm vertical condensation and the thermomechanical approach,

- Coronal access was sealed with 4<sup>th</sup> generation bonding (Optibond FL – Kerr HaweNeos) and the patient referred back to his General Practitioner. The silver point was removed successfully, all the canal were identified, mechanical shaped, disinfected and obturated using the warm vertical condensation approach.

**Case no. 3 (Figs. 13 to 17)**

A 68 years old male patient was referred for RERCT evaluation.

The diagnosis revealed:

1. Extrusion of the tooth 27.
2. Bone loss at both teeth 26 and 27. Furcation involvement.
3. Insufficient RCT at tooth 26 with CAP at the mesial root.
4. Heavy parafunctioning – bruxismus.

Having taken the patient through the above illustrated decision trees the following argumentation lead to the treatment plan:

- The patient had previous endodontic experience and refused to go again through this treatment.
- The periodontal disease could impose a questionable long term result with orthograde nonsurgical RERCT and RCT.

The following treatment plan was accepted by patient and referral:

1. Extraction of the teeth 26 and 27.
2. Delayed implant placement (healing time of 12 weeks was accepted).
3. Implantation of 2 Biohorizons Implants (BioHorizons UK).
4. Osseointegration time 5 months.
5. II stage surgery (uncover)—temporary to modelate the emergence profile.
6. Impression—bite registration—face bow.
7. Seating the abutments (here BioHorizons titanium abutments) and loading.

*The agreed prosthetic construction:*

- PFM crowns, high precious metal, occlusal surface in metal to allow for occlusal adjustment through bruxism.
- Diagnostic X-ray of the teeth 26 and 27. Tooth 27 showing bone loss with furcation involvement and a presumed



Fig. 10: ???



Fig. 13: ???

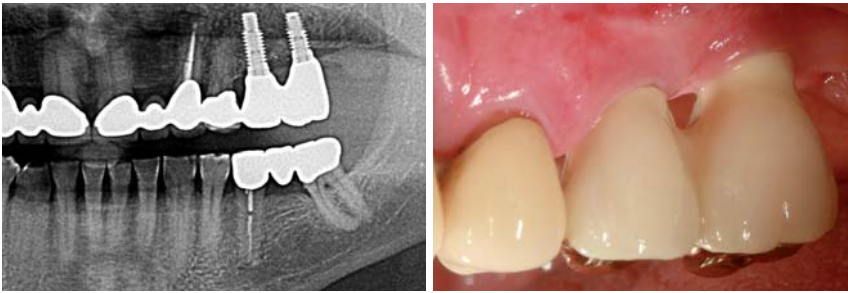


Fig.16: ???

intracoronary fracture and extrusion as a consequence of missing antagonist.

Tooth 26 showing bone loss with furcation involvement, insufficient RCT and a periapical lesion at the mesial root. OPG 3 months post extraction showing a good bone healing at the site. OPG at the 24 months recall after implant loading. Excellent bone condition at the crestal level of the BioHorizons implants (BioHorizons UK) can be recognized. The intraoral picture shows the two PFM crowns. The reader may notice the gold occlusal surface as well as the interproximal space to allow an easy and successfully hygienization.

**Clinical conclusions**

The article intends to help the General Practicing Dentists in the decision taking process differentiating between Root Canal Treatment (Reroot Canal Treatment) and implant placement. To facilitate this process the authors built and introduced decision trees based upon the statements of the American Association of Endodontists. The combination of Continuing Education, HI TEC, Evidence Base and last but not least the patients subjective criterias provides today a predictable long lasting clinical success either using Root Canal Treatment—or updated Implantologic procedures.

Using the Team Approach (General Dental Practitioner – Specialist) healing rates of over 95% can be achieved today. ■

**Summary**

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■ **KONTAKT**

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