

University of Pennsylvania  
TEC2 Next Level  
November 2016

# Case study:

combined pulpal and periodontal lesion

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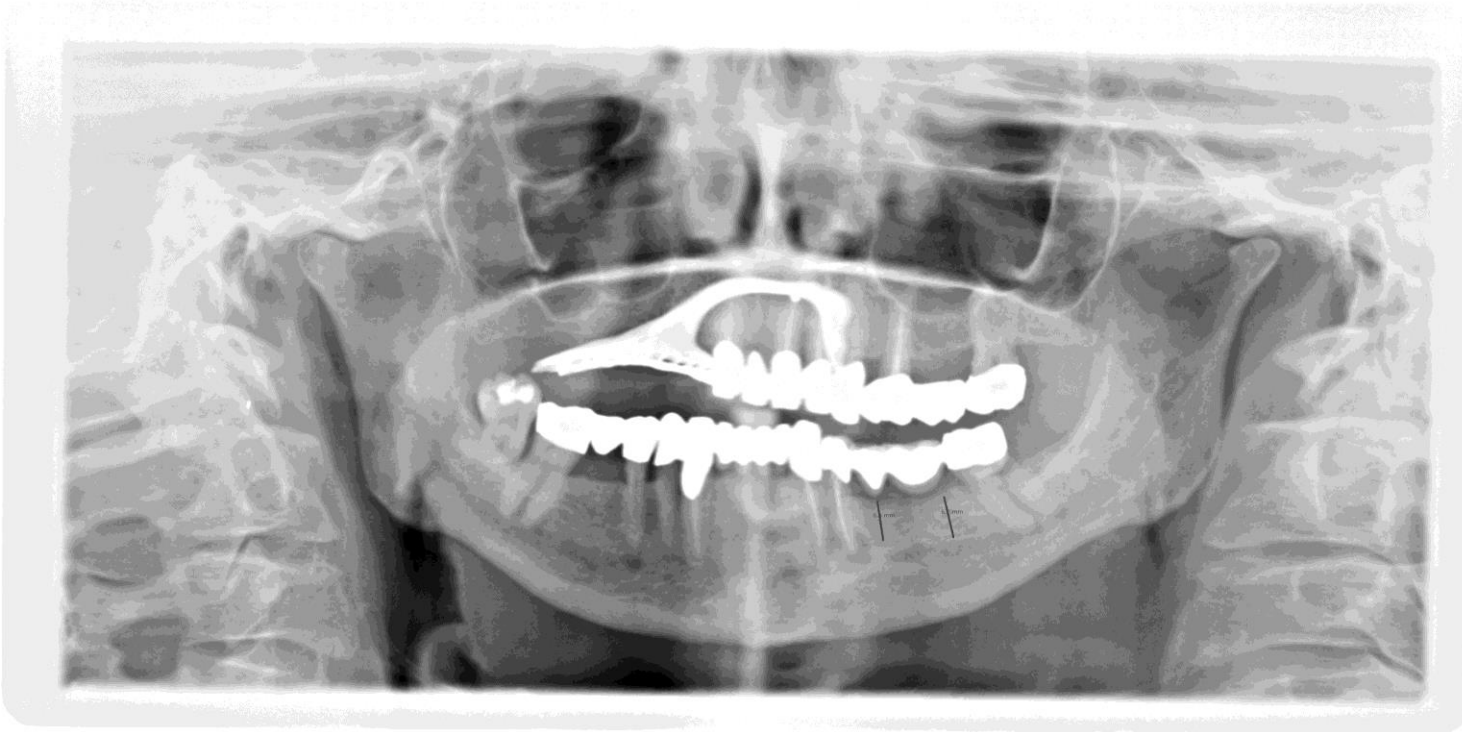


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# Starting point: situs



# Starting point: pretreatment radiography



# Anamnesis

- ▶ 62 year old patient with acute pain in 3<sup>rd</sup> quadrant
- ▶ Pretreatment X-ray:
  - ▶ 33,34 to 37 show a distinct radiolucent area at 33/34 periradicularly from the root-treated teeth 33/34
  - ▶ 37 shows an insufficiently occlusal metal crown with caries down to the furcation area as well as a diffuse area periapically
- ▶ Chief complaint:
  - ▶ severe pain already for a couple of days on the left side of the face
  - ▶ gum is leaking liquid
  - ▶ teeth 34,37 very sensitive, esp. when chewing



# Examination

- ▶ 1. percussion:
  - ▶ 33, 34, 37 definitely positive
- ▶ 2. pulp test with dichlorofluoromethane (cold spray):
  - ▶ 33,34,37 negative
- ▶ 3. palpation all areas:
  - ▶ 33/34-37 apex region very painful
- ▶ 4. TMD short test (based on Ahlers and Jakstat\*)
  - ▶ no hint at TMD, only muscle palpation on the left m. masseter slightly positive



# Examination

- ▶ parodontal examination:
  - ▶ tooth 34: labial down to apex soundable with pus release; mobility III
  - ▶ tooth 37: mobility II and caries down to the furcation area
- ▶ Both teeth ad ex

Behandler: Dr. Claudia Michl

**Parodontalstatus Blatt 2**

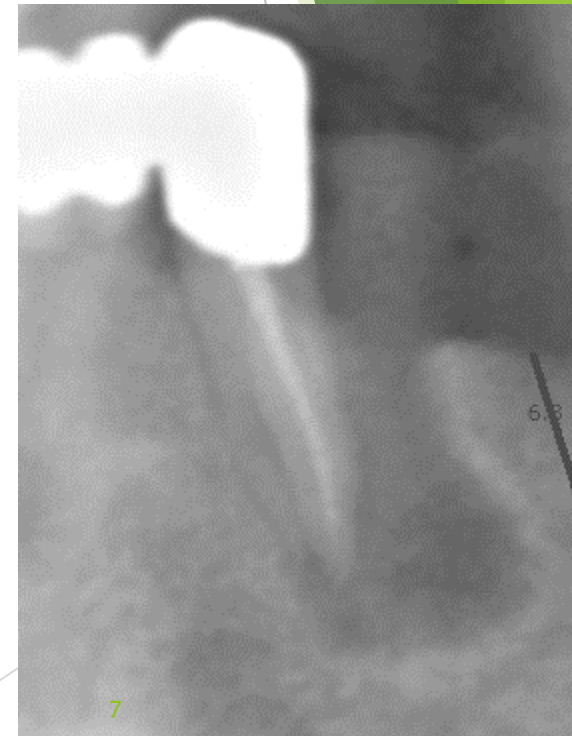
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# Diagnosis

→ Combined endodontic and periodontal Lesion 33/34

→ Cause:  
untreated lingual  
root 33



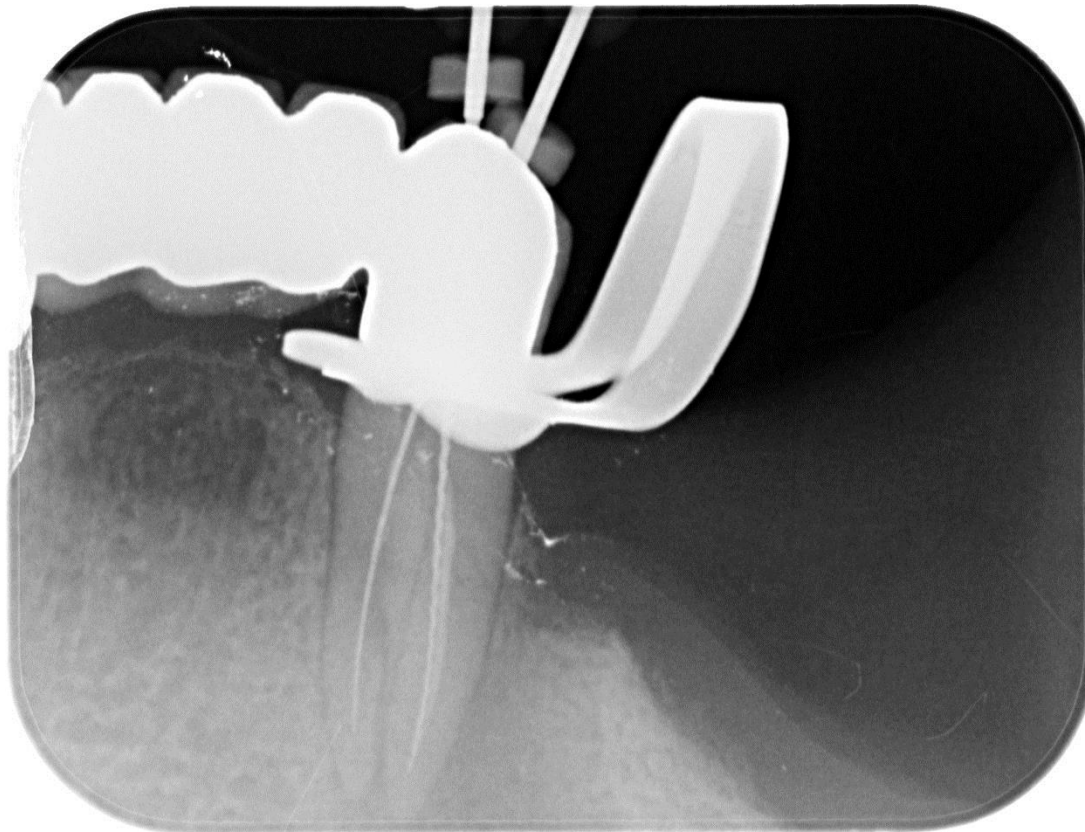
# Treatment plan

- ▶ Antibiotic treatment (amoxicillin) with subsequent removal of destroyed teeth 34,37
- ▶ retreatment of buccal root (tooth 33)
- ▶ Root treatment of lingual root (tooth 33)
- ▶ Treatment with dental operating microscope and rubber dam
- ▶ trepanation 33
- ▶ Endodontic treatment of both root channels down to the apical construction
- ▶ desinfektion,
- ▶ obturation and occlusal closure with composite and fiber post
- ▶ prosthetic supply of tooth 33 based on a full mouth rehab with artificial dentition or hybrid prothesis





# X-ray upon endometric legth measurement

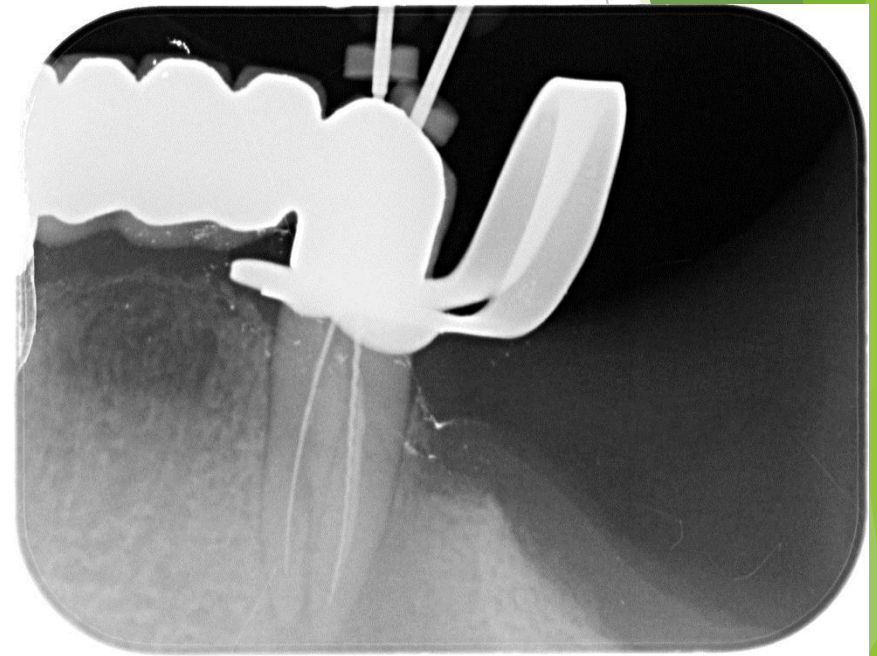


# X-ray upon endometric legth measurement

X-ray mesial eccentric:

tooth 33 buccal 22 mm ( Iso 20 H)

lingual 21mm ( Iso 15 R)



# retreatment tooth 33 buccal root endodontic treatment lingual root

- ▶ Treatment of channel with Hyflex (Coltene, Swiss), retreatment with retreatment tips (Protaper, Dentsply, USA)
- ▶ coronal removal of Guttapercha with Gates Glidden (Loser GmbH, Germany); dissolution of Guttapercha with orange solvent
- ▶ Removal of Guttapercha with file (size 15-20-30 Reamer, Headström)
- ▶ coronal opening of channel entry (orofice opener 08/25)
- ▶ Verification of path way (Iso 20 file, Reamer)
- ▶ 04/20 Path finder to working legth
- ▶ 04/25 apical extension to working legth
- ▶ 06/20 shaping of middle channel area
- ▶ 04/30-40 respectively 50 shaping of apical third
- ▶ buccal root to 04/50, lingual root 04/40



# Irrigation protocol tooth 33

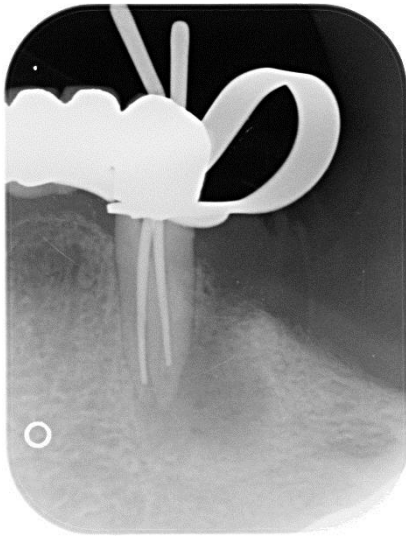
- 1. treatment: changing lavage 3,5% NaOCl, 17% EDTA , processing at humid conditions
- Ultrasonication of lavage solutions
- Chlorhexidine 2%
- application of CaOH into the root channel
- 2. treatment: analog 1. treatment without ultraonication
- Drying and opturation of channels



# Opturation

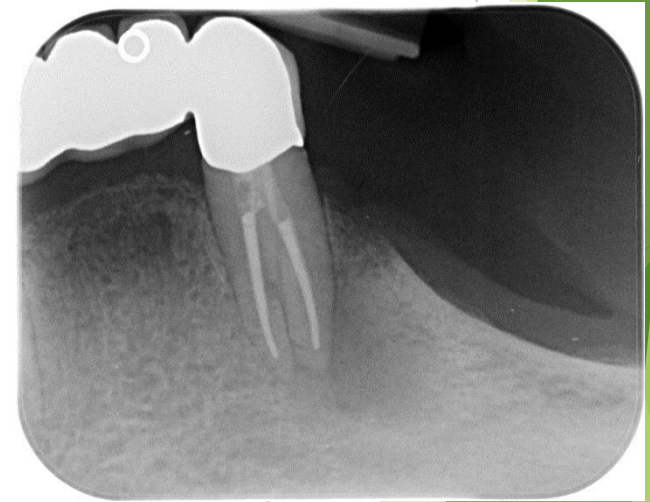
Single Cone Opturation Technique Guttapercha und TOTAL Fill

## ► Masterpoint



## control X-ray

- Kontrollröntgen der
- Opturation mit Versiegelung der Kanaleingänge subkrestal und DAR



# Post treatment photography X-ray four month post treatment



# Epicrisis

- ▶ On tooth 33 a paro-endo lesion (combined paro-endolesion) developed over the course of several years due to an unfinished root canal treatment. The patient told us that tooth 33 received a root canal treatment about 20 years ago. It seems that, during the course of this treatment, the lingual root of tooth 33 couldn't be treated. The labial root could be filled properly, but the lingual root remained unfilled for years.
- ▶ Studies of apical canal configurations for the mandibular canine report roots in 94 - 97 % of the cases. 2 - 6 % are two roots or two root canals which are localised lingual and labial



# Epikriese

Due to the untreated lingual part of the root of tooth 33 over several years bacteria and antigenes developed, which infected the periapical area and led to osteolysis, a ripement of apical parodontitis and the formation of abscesses which were observed in this case.

Given that, on one hand, we had to deal with a combined paro-edno problem but on the other hand the endodont seemed to be the cause of the problem, one can stipulate that the lesion on tooth 33 could recover properly.

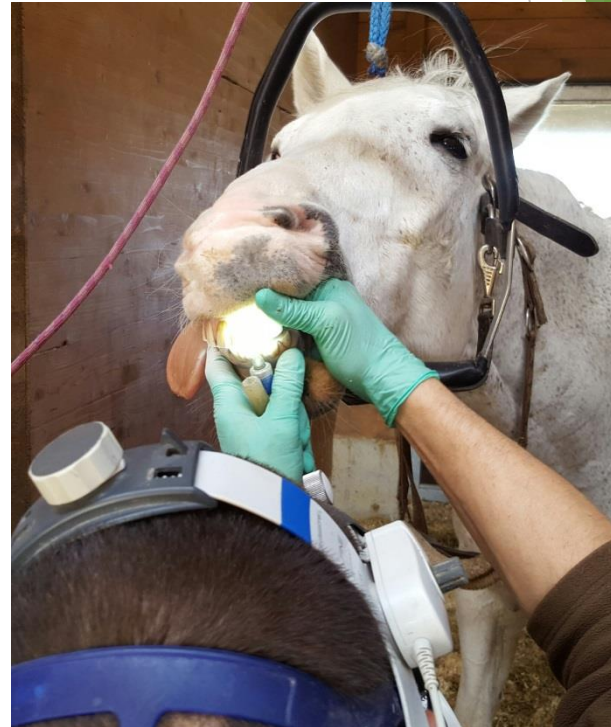
A prosthetic provision and stabilisation for tooth 33 via the use of a dentinadhesive pin (fiber post) is advisable.





Thank you for your attention!

Questions?!



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