



# Managing Concurrent Endodontic and Periodontal Diseases

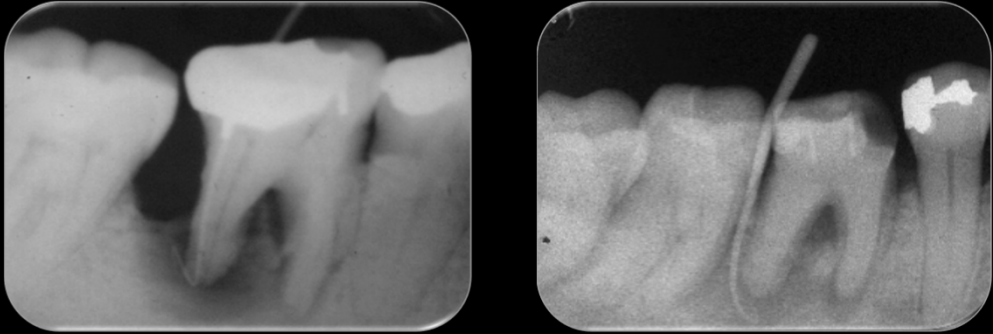
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BDS, MSc, FRACDS(Endo), FPFA, FADI, FICD, FACD, FIADT

**Specialist Endodontist**  
Winthrop Professor of Clinical Dentistry  
UWA Dental School  
The University of Western Australia



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# Managing Concurrent Endodontic and Periodontal Diseases



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## Concurrent Endodontic & Periodontal Diseases

- ◆ Confusion and uncertainty - why?
- ◆ Classifications - old and new
- ◆ Inter-relationships - root canal system & periodontium
- ◆ Management:
  - Diagnosis
  - Which treatment first - ?? Endodontics or ?? Periodontics
  - Strategies to manage concurrent diseases
  - Case examples

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## Reference

### Strategies for the endodontic management of concurrent endodontic and periodontal diseases

Abbott PV, Castro Salgado J.

*Aust Dent J* 2009; 54 (Suppl 1): S70 - S85.




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## Concurrent Endodontic & Periodontal Diseases

***A Source of Much Confusion and Uncertainty!!!***

TWO main reasons for this confusion:

1. The “*all inclusive*” approach
2. The diagnostic classifications used



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## Concurrent Endodontic & Periodontal Diseases

### Broad Interactions

<ul style="list-style-type: none"><li>◆ Cracked cusps</li><li>◆ Root caries</li><li>◆ Grooved roots</li><li>◆ Traumatic occlusion</li><li>◆ Lateral periodontal cyst</li><li>◆ Developmental anomalies</li><li>◆ Orthodontic complications</li></ul>	<ul style="list-style-type: none"><li>◆ Resorption</li><li>◆ Perforations</li><li>◆ Transplanted teeth</li><li>◆ Restoration margins</li><li>◆ Vertical root fractures</li><li>◆ Horizontal root fracture</li><li>◆ Dentine hypersensitivity</li></ul>
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## Concurrent Endodontic & Periodontal Diseases

### Broad Interactions

- ◆ All may have Endodontic & Periodontal implications / symptoms / signs
- ✗ BUT they are not “Concurrent Endodontic and Periodontal Diseases”
- ✓ They are distinct diseases / conditions - with their own causes and specific management options

<ul style="list-style-type: none"><li>◆ Cracked cusps</li><li>◆ Root caries</li><li>◆ Grooved roots</li><li>◆ Traumatic occlusion</li><li>◆ Lateral periodontal cyst</li><li>◆ Developmental anomalies</li><li>◆ Orthodontic complications</li></ul>	<ul style="list-style-type: none"><li>◆ Resorption</li><li>◆ Perforations</li><li>◆ Transplanted teeth</li><li>◆ Restoration margins</li><li>◆ Vertical root fractures</li><li>◆ Horizontal root fracture</li><li>◆ Dentine hypersensitivity</li></ul>
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## Concurrent Endodontic & Periodontal Diseases

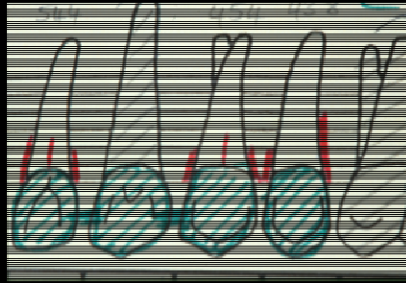
### Broad Interactions

- ◆ *Some examples ....*

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## Root Perforation

- ◆ Manifested by rapid increased probing depth, suppuration, increased mobility, pain/awareness with function

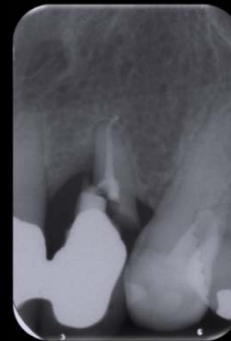


Courtesy of Dr Albert Tan - Periodontist

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## Horizontal Root Fractures

- ◆ Manifested by rapid increased probing depth, suppuration, increased mobility, pain/awareness with function

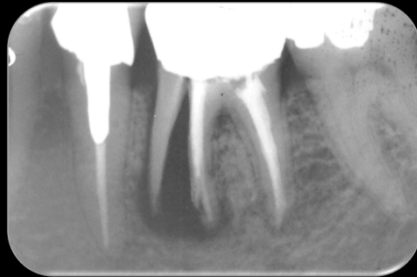


Courtesy of Dr Albert Tan - Periodontist

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## Vertical Root Fractures

- ◆ Manifested by rapid increased probing depth, suppuration, increased mobility, pain/awareness with function



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## External Invasive Root Resorption

- ◆ Manifested by bleeding on probing, sometimes with ankylosis, sometimes with suppuration if infected, otherwise asymptomatic



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## Caries, Restorations, Cracks

- ◆ 36 - caries, restoration breakdown, root-filled & infected root canal system
- ◆ Distal root - crack and periodontal pocketing



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## Concurrent Endodontic & Periodontal Diseases

### Broad Interactions

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- ✗ BUT they are not “Concurrent Endodontic and Periodontal Diseases”
- ✓ They are distinct diseases / conditions - with their own causes and specific management options

- |                             |                            |
|-----------------------------|----------------------------|
| ◆ Cracked cusps             | ◆ Resorption               |
| ◆ Root caries               | ◆ Restorations             |
| ◆ Grooved roots             | ◆ Transplanted teeth       |
| ◆ Traumatic occlusion       | ◆ Restoration margins      |
| ◆ Lateral periodontal cysts | ◆ Vertical root fractures  |
| ◆ Developmental anomalies   | ◆ Horizontal root fracture |
| ◆ Orthodontic complications | ◆ Dentine hypersensitivity |


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## Concurrent Endodontic & Periodontal Diseases

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Confusion and Uncertainty!!!**

TWO main reasons for this confusion:

1. The “all inclusive” approach
2. The diagnostic classifications used



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## Concurrent Endodontic & Periodontal Diseases

- ◆ Confusion and uncertainty - why?
- ◆ Classifications - old and new
- ◆ Inter-relationships - root canal system & periodontium
- ◆ Management:
  - Diagnosis
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  - Strategies to manage concurrent diseases
  - Case examples

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**"Endo-Perio Lesions"** → **Problematic Terminology!!!**

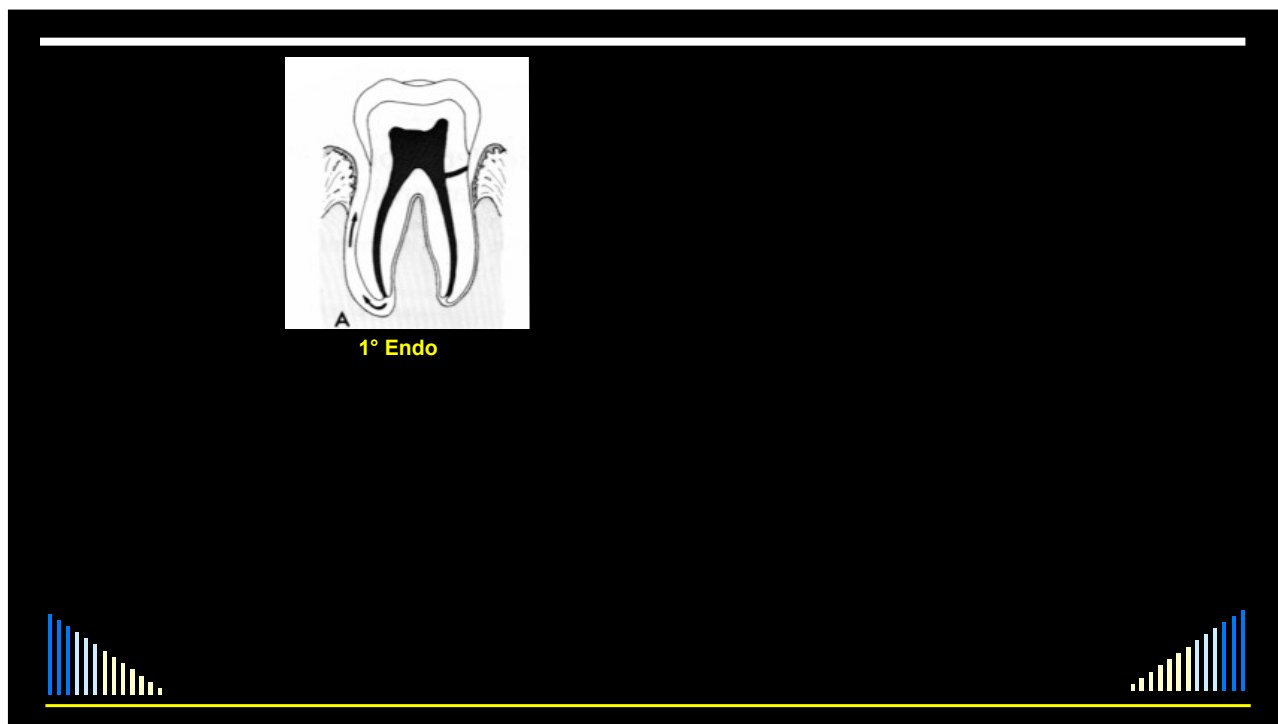
- ◆ **Classification: Simon, Glick & Frank (1972)**
  - *1° Endo lesion*
  - *1° Endo lesion with 2° Perio involvement*
  - *1° Perio lesion*
  - *1° Perio lesion with 2° Endo involvement*
  - *"True" Combined lesion*

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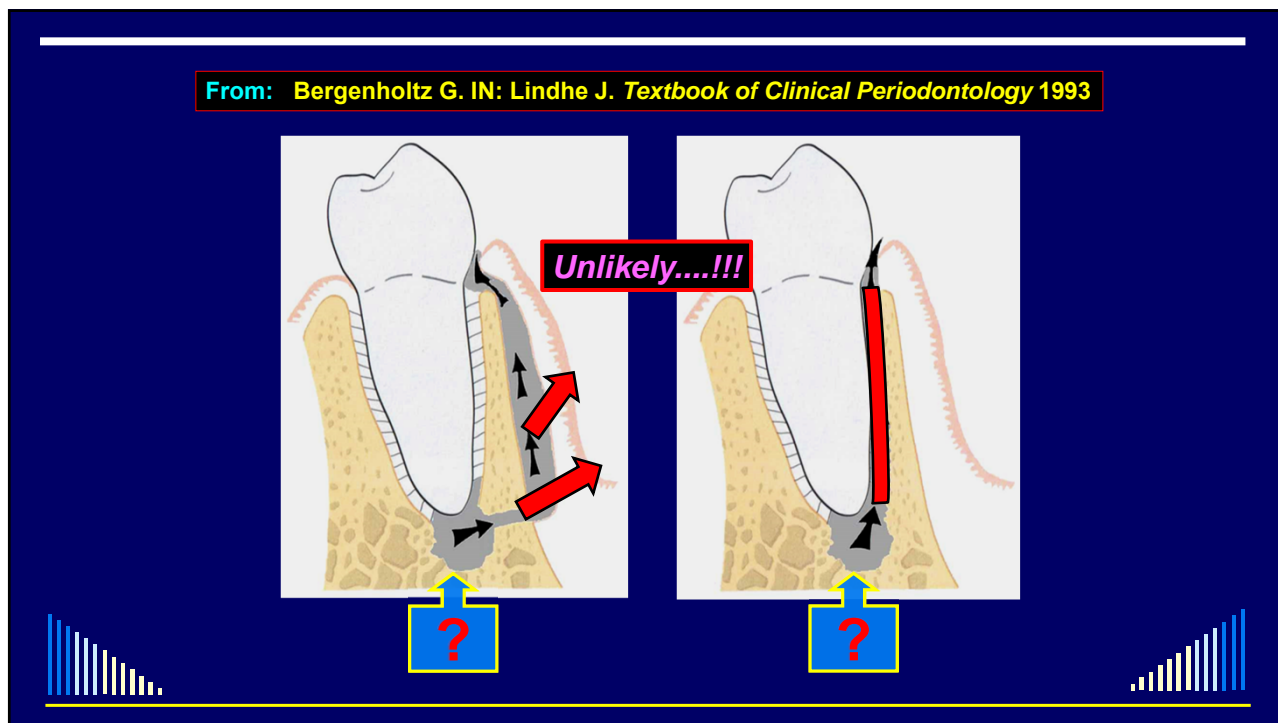
The diagrams illustrate six scenarios of endodontic and periodontal involvement:

- A: 1° Endo**: Shows a tooth with a root canal filling and a small periapical radiolucency.
- B: 1° Endo (furcation)**: Shows a tooth with a root canal filling and a radiolucency extending into the furcation area.
- C: 1° Endo, 2° Perio**: Shows a tooth with a root canal filling and a large, well-defined radiolucency at the apex.
- D: 1° Perio**: Shows a tooth with a root canal filling and a radiolucency at the apex, but the root canal is not filled.
- E: 1° Perio, 2° Endo**: Shows a tooth with a root canal filling and a radiolucency at the apex, but the root canal is not filled.
- F: True combined lesion**: Shows a tooth with a root canal filling and a radiolucency at the apex, but the root canal is not filled.

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From: Abbott & Castro Salgado - ADJ 2009

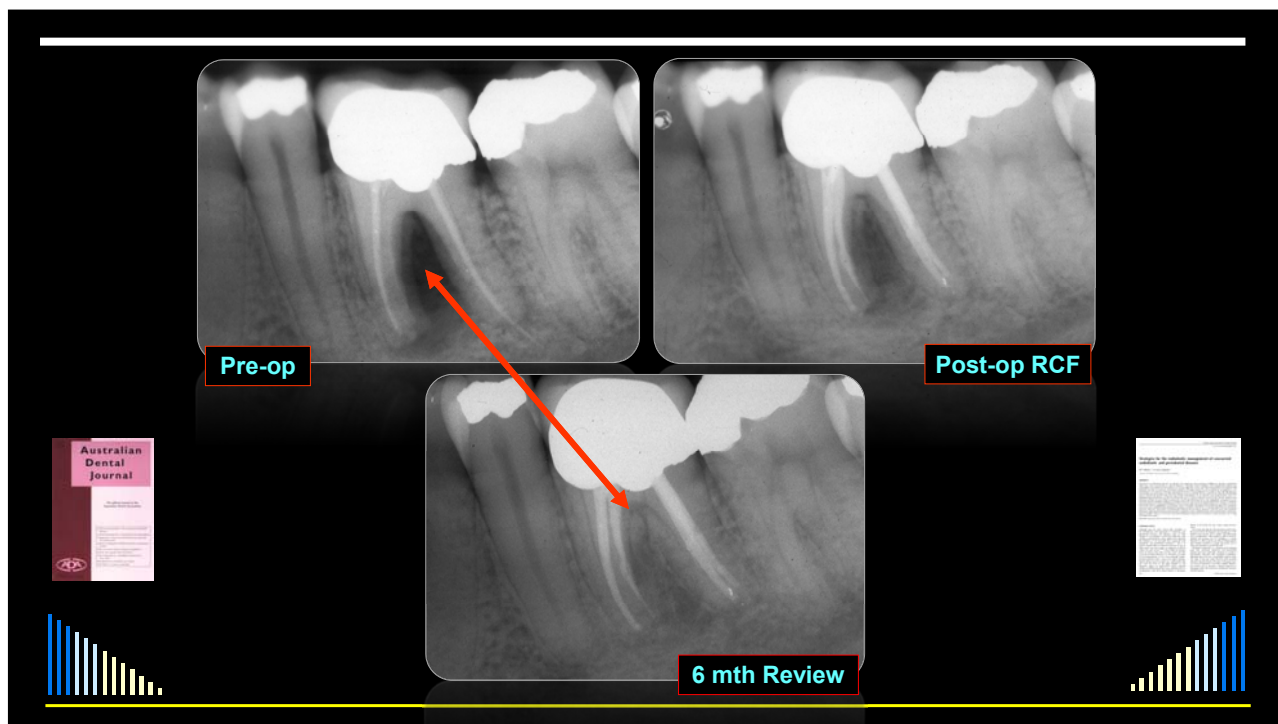
Australian Dental Journal

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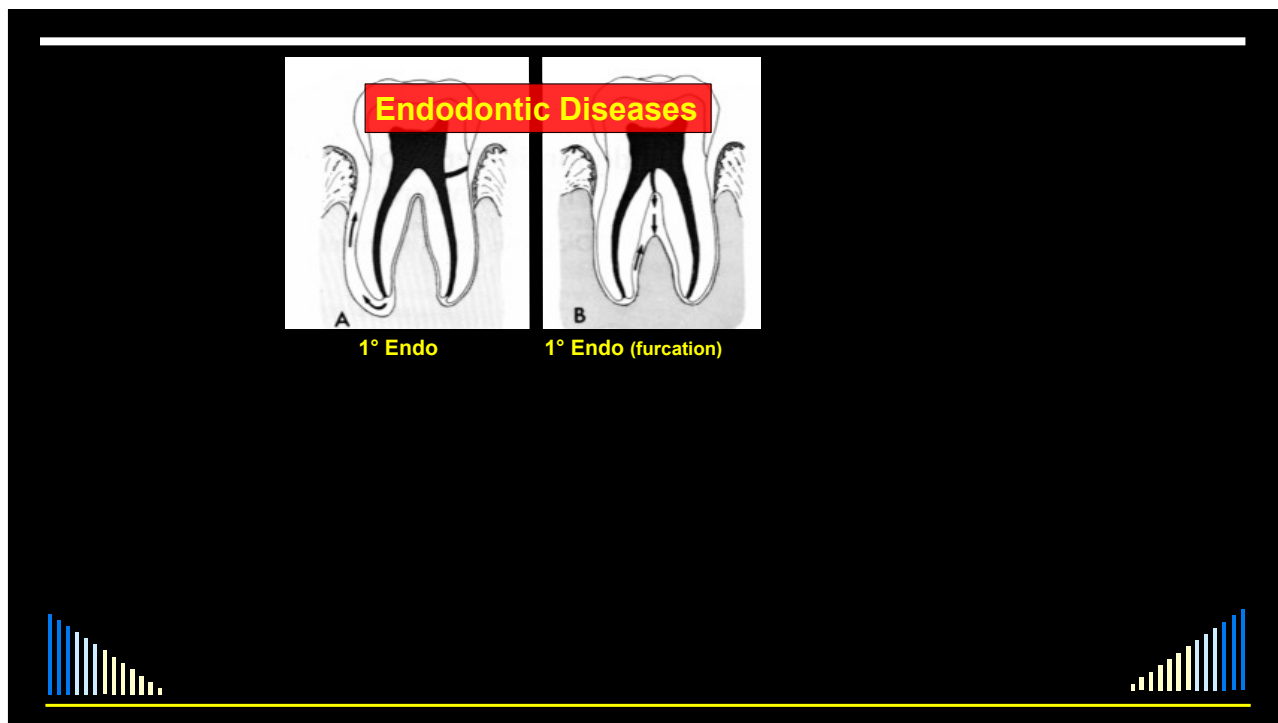
A 1° Endo

B 1° Endo (furcation)

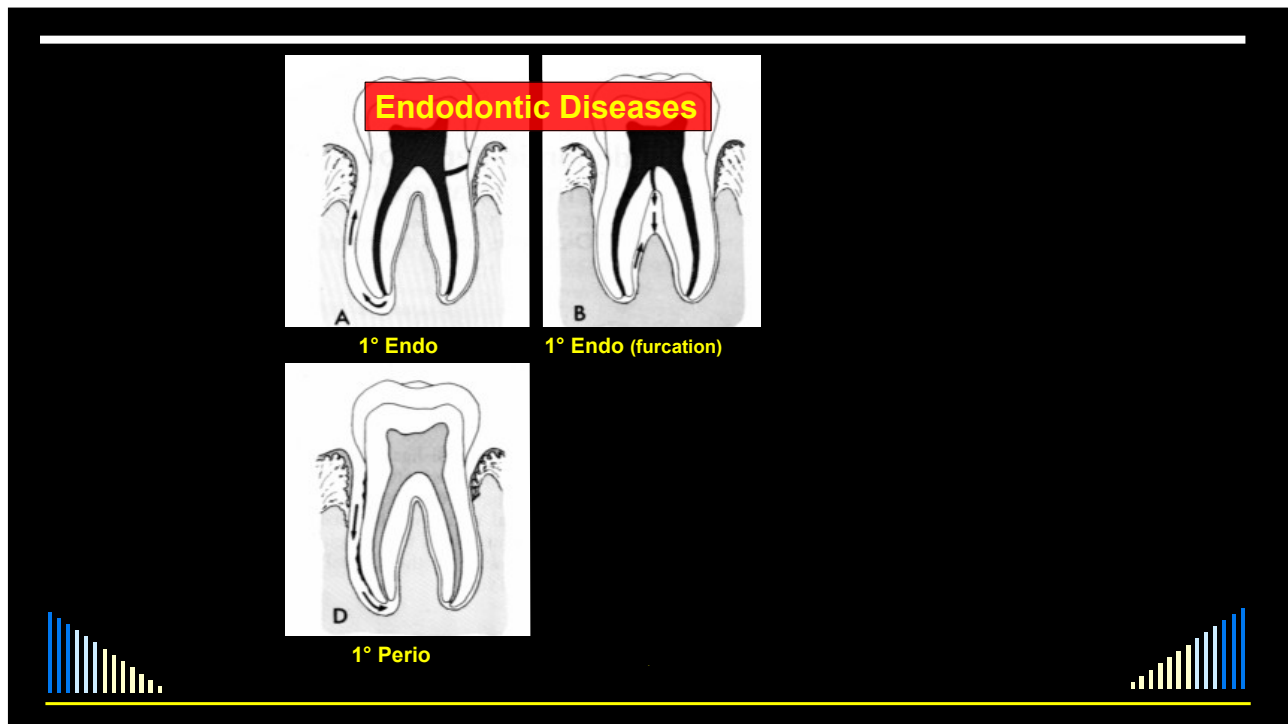
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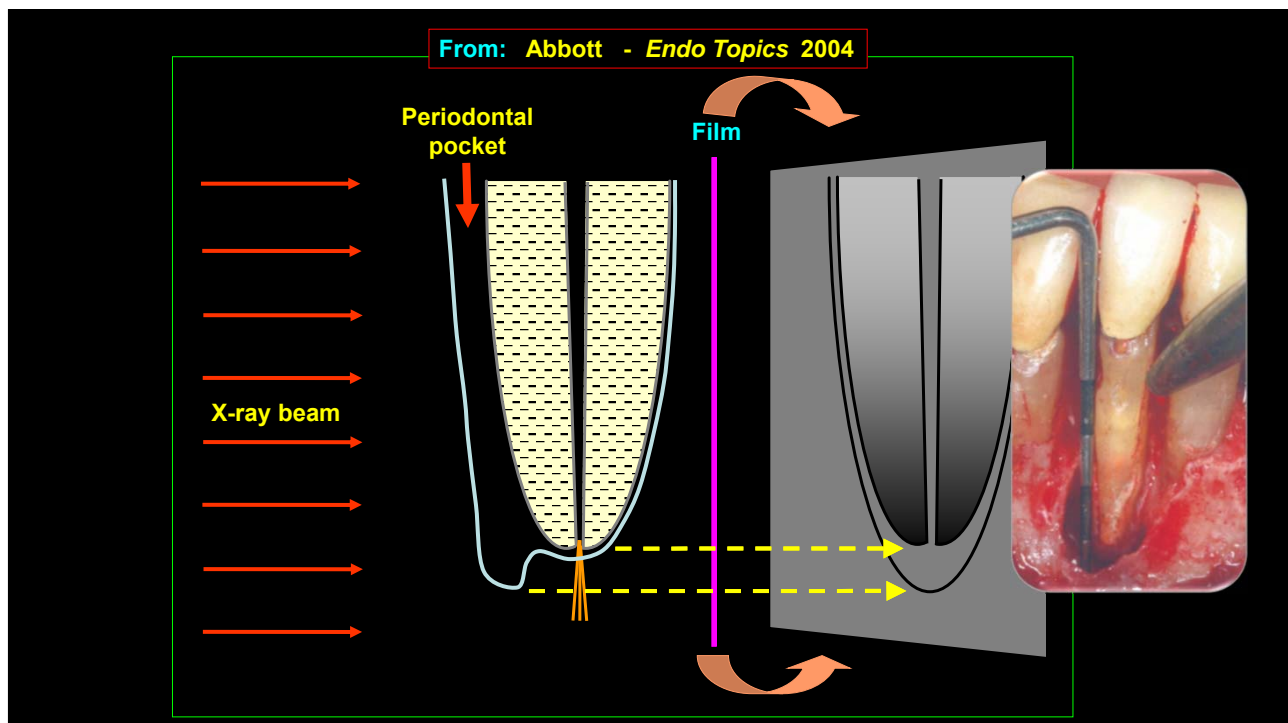
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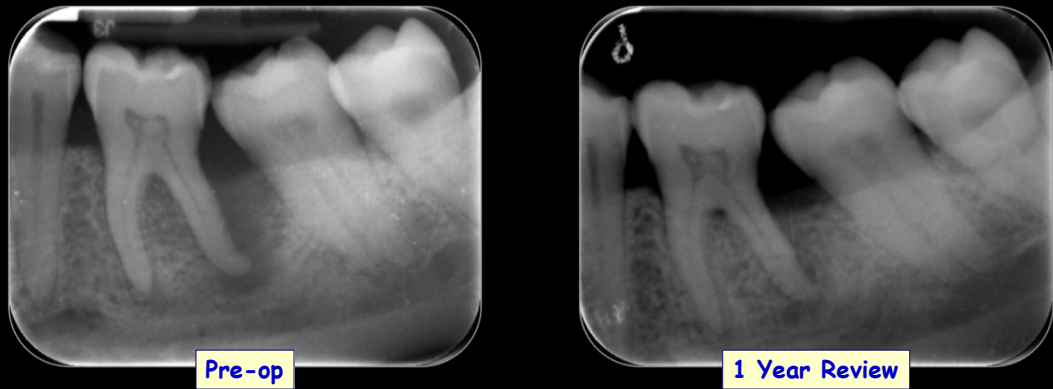
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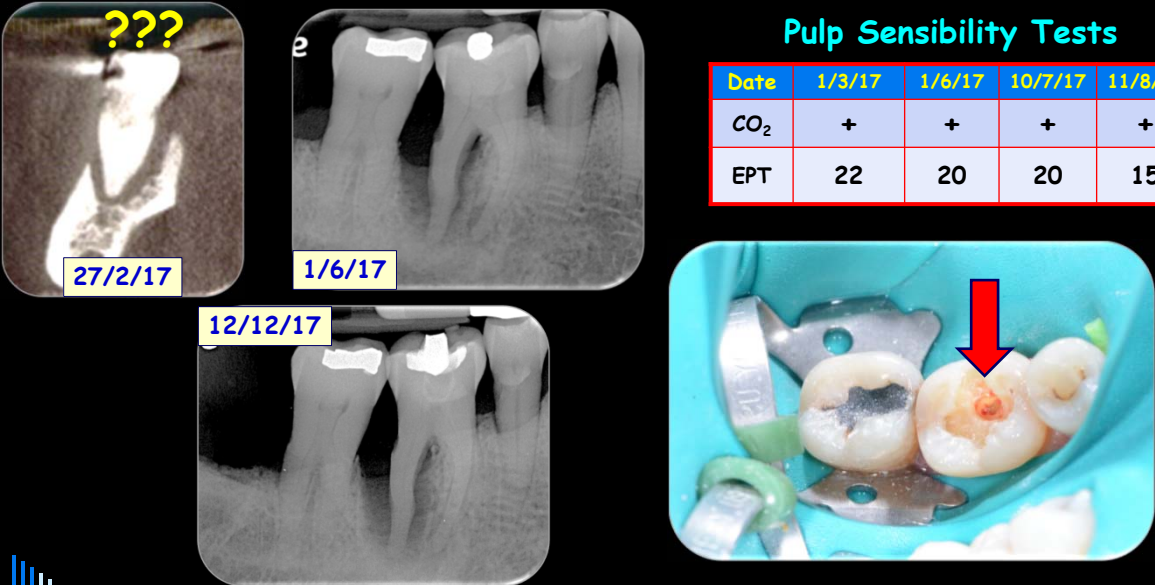
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CO <sub>2</sub>	+
EPT	34

Courtesy of Dr Ehsan Mellati - Periodontist

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Pulp Sensibility Tests

Date	1/3/17	1/6/17	10/7/17	11/8/17
CO <sub>2</sub>	+	+	+	+
EPT	22	20	20	15

Courtesy of Dr Michael Khoury

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**Pulp Sensibility Tests**

Date	19/8/16	4/7/17	1/9/17
CO <sub>2</sub>	+	+	+
EPT	22	51	17

Courtesy of Dr Michael Khoury

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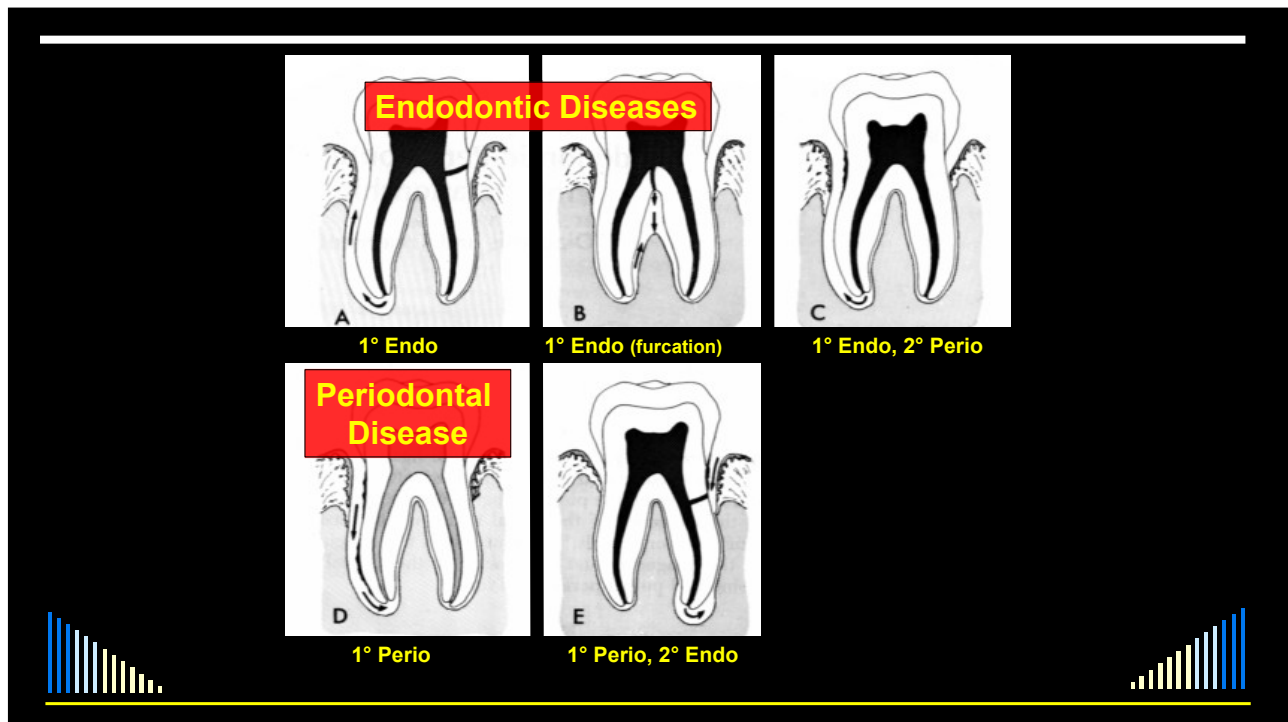
**Endodontic Diseases**

A 1° Endo      B 1° Endo (furcation)

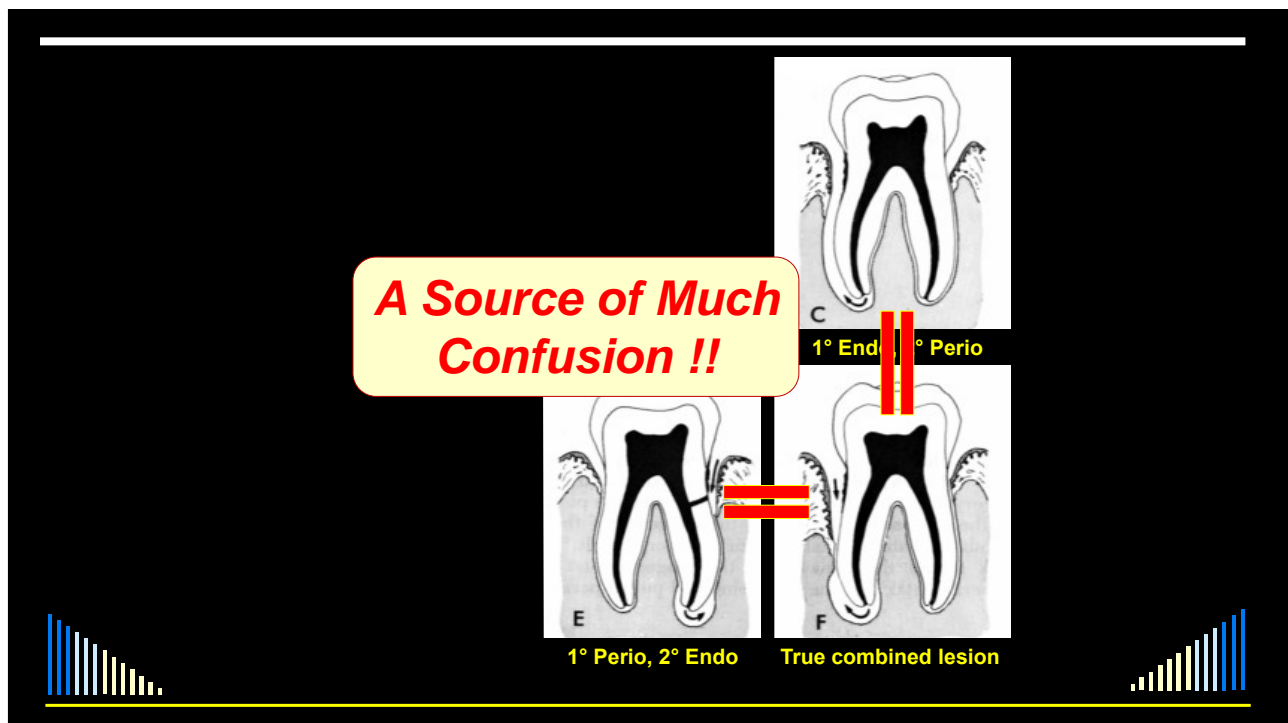
**Periodontal Disease**

D 1° Perio

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**"Endo-Perio Lesions"** → **Problematic Terminology!!!**


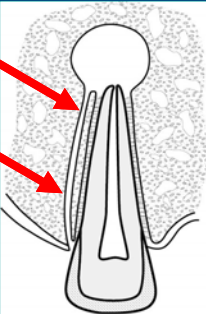
- ◆ Classification: ~~Simon Glick & Frank (1972)~~
  - 1<sup>o</sup> Endo lesion
  - 1<sup>o</sup> Endo les > **Possible** involvement
  - 1<sup>o</sup> Perio les > **Meaningful**
  - 1<sup>o</sup> Perio les > **Useful** involvement
  - "True" Combined lesion

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## Clinical Classification

(Modified from Torabinejad and Trope 1996)

- ◆ Based on the origin of the periodontal pocket:
  - Endodontic Origin

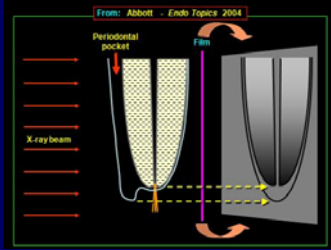



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## Clinical Classification

(Modified from Torabinejad and Trope 1996)

- ◆ Based on the origin of the periodontal pocket:
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## Clinical Classification

(Modified from Torabinejad and Trope 1996)

- ◆ Based on the origin of the periodontal pocket:
  - Endodontic Origin
  - Periodontal Origin
  - Combined Endo-Perio Lesions: Problematic Terminology
    - Separate endodontic & periodontal lesions
      - ✦ No communication
    - Lesions communicate

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◆ Separate lesions

- No communication

◆ Lesions communication

## Combined Endo-Perio Lesions

Problematic Terminology

The slide features two diagrams at the top. The left diagram shows three teeth with separate, isolated lesions. The right diagram shows a tooth with a lesion that appears to communicate between the root canal and the periodontal space. Below these are two radiographs of teeth showing similar clinical scenarios.

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## Clinical Classification

(Modified from Torabinejad and Trope 1996)

- ◆ Based on the origin of the periodontal pocket:
  - Endodontic Origin Not "Endo-Perio" - only Endo.
  - Periodontal Origin Not "Endo-Perio" - only Perio.
  - Combined Endo-Perio Lesions: Problematic Terminology
    - Separate endodontic & periodontal lesions
      - ✦ No communication
    - Lesions communicate

✓ Possible

? Meaningful

? Useful

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## A New Clinical Classification

(Abbott and Castro Salgado - ADJ 2009)

- ◆ **Concurrent Endodontic & Periodontal Diseases**
  - Without communication
  - With communication

Combined **X** = brought together, united or joined

Concurrent **✓** = occurring simultaneously

- [www.dictionary.com](http://www.dictionary.com)



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## A New Clinical Classification

(Abbott and Castro Salgado - ADJ 2009)

- ◆ **Concurrent Endodontic & Periodontal Diseases**
  - Without communication
  - With communication

Lesion **X** = an injury or a wound

Disease **✓** = a pathological condition;  
a harmful deviation from normal

- [www.dictionary.com](http://www.dictionary.com)



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# A New Clinical Classification



(Abbott and Castro Salgado - ADJ 2009)

**Concurrent Endodontic & Periodontal Diseases**

- Without communication
- With communication

■ Applies to teeth that have **BOTH**:

1. An infected root canal system causing some form of apical periodontitis
2. **AND**: some form of marginal periodontal disease

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# Classifications of Pulp, Root Canal and Periapical Conditions

**Table 2. Clinical classification of the status of the pulp and root canal conditions proposed by Abbott<sup>1,2,3,4</sup> and used in the School of Dentistry at The University of Western Australia<sup>5</sup>**

Clinically Normal Pulp (based on clinical examination and test results)

Reversible pulpitis - Acute  
- Chronic

Irreversible pulpitis - Acute  
- Chronic

Necrobiosis (Part of pulp necrotic & infected; the rest is irreversibly inflamed)

Pulp necrosis - No sign of infection  
- Infected

Pulpless, infected root canal system

Degenerative changes

- Atrophy
- Pulpal canal calcification - partial  
- total
- Hyperplasia
- Internal resorption - Surface  
- Inflammatory  
- Replacement

Previous root canal treatment

- No sign of infection
- Infected
- Technical standard (based on the radiographic appearance)
  - Adequate
  - Inadequate
- Other problems - e.g. perforation, missed canals, fractured instrument, etc.

**Table 2. A clinical classification of the status of the periradicular tissues.**

(a) Clinically normal periapical/periradicular tissues

(b) Apical periodontitis - *Acute*: Primary  
Secondary (or acute exacerbation)

- *Chronic*: Granuloma  
Condensing osteitis

(c) Periapical cyst - *True cyst*  
- *Pocket cyst*

(d) Periapical abscess - *Acute*: Primary  
Secondary

- *Chronic*

(e) Facial cellulitis



(f) Extra-radicular infection

(g) Foreign body reaction

(h) Periapical scar

(i) External root resorption - *Surface*  
- *Inflammatory*  
- *Replacement*  
- *Invasive*  
- *Pressure*  
- *Orthodontic*  
- *Physiological*

**Abbott & Yu - ADJ 2007**      **Abbott - Endod Topics 2004**

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## In Particular ... Teeth With:

PULP / ROOT CANAL CONDITIONS	+	PERIAPICAL CONDITIONS
<ul style="list-style-type: none"> <li>◆ Necrotic and <b>infected</b> pulp</li> <li>◆ Pulpless and <b>infected</b> root canal system, or</li> <li>◆ Root-filled and <b>infected</b> root canal system</li> </ul>	+	<ul style="list-style-type: none"> <li>◆ 2° acute apical periodontitis</li> <li>◆ Chronic apical periodontitis</li> <li>◆ 2° acute apical abscess</li> <li>◆ Chronic apical abscess</li> <li>◆ Extra-radicular infection</li> <li>◆ Pocket cyst</li> <li>◆ True cyst, or</li> <li>◆ Foreign body reaction</li> </ul>

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Plus ...

- ◆ **Advanced chronic periodontitis**
  - Loss of attachment to the apical foramina
    - **With pulp implications**
- ◆ **Or PERHAPS teeth with early-moderately advanced chronic periodontitis**
  - If a lateral canal foramen is involved
    - **Since may be pulp implications**

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From: Abbott & Castro Salgado 2009

Without communication

With communication

## Concurrent Endodontic and Periodontal Diseases

Australian Dental Journal

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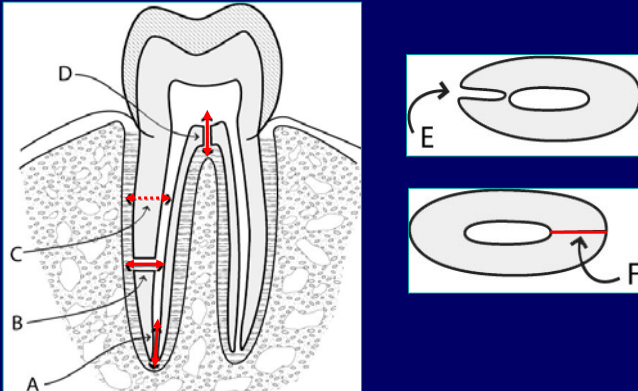
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## Concurrent Endodontic & Periodontal Diseases

### Communication Pathways



**From: Abbott & Castro Salgado 2009**


*(Note: The slide also features a small thumbnail of the 'Australian Dental Journal' on the left and a small thumbnail of a document on the right, both partially obscured by the main diagram.)*

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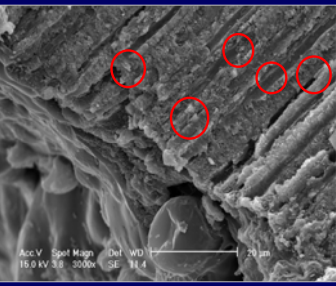
## Concurrent Endodontic & Periodontal Diseases

### Communication Pathways

#### Apical Foramen



#### Dentine Tubules



*(Note: The SEM image includes technical data at the bottom: Acc.V 15.0 kV, Spot Magn 3.5, Def WD 11.4, SE 11.4, 20 um.)*

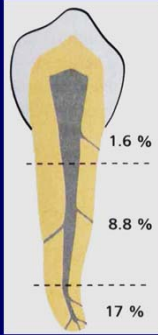
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## Concurrent Endodontic & Periodontal Diseases

### Communication Pathways

#### Lateral Canals

From the main canal laterally to the PDL




1.6 %  
8.8 %  
17 %

**From: Bergenholtz G. IN: Lindhe J. Textbook of Clinical Periodontology 1993**

#### Accessory Canals

Canals from the pulp chamber to the furcation





**From: Dr Robert Bower**

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## Concurrent Endodontic & Periodontal Diseases

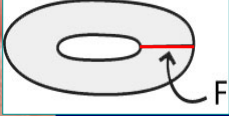

### Communication Pathways

#### Developmental Grooves



**E**

#### Cracks / Fractures

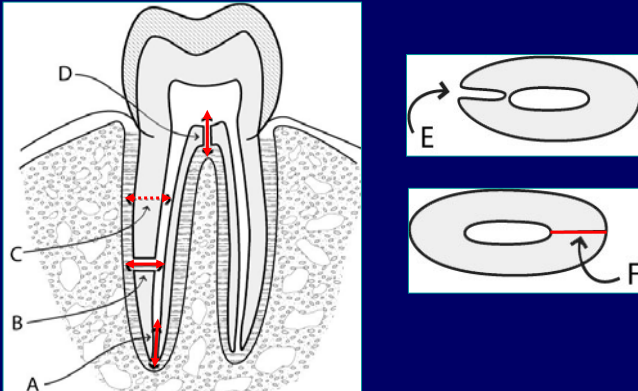


**F**

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## Concurrent Endodontic & Periodontal Diseases

### Communication Pathways



From: Abbott & Castro Salgado 2009

*Australian Dental Journal*

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## Similarities in the microflora of root canals and deep periodontal pockets

Kerekes K, Olsen I.  
*Endod Dent Traumatol* 1990; 6: 1-5

- ◆ Review showing similarities between microflora of infected root canals and deep periodontal pockets
- ◆ *Evidence supports the concept that infection can spread from one site to the other*

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- ◆ Evidence for the concept that infection can spread from one site to the other
- ◆ Cross-infecting organisms:
  - Highly motile
  - Survive in highly reduced environments
- ◆ Precautions must be taken:
  - To prevent *in vivo* cross seeding of these micro-organisms during treatment
  - Especially in compromised teeth
    - i.e. those with concurrent diseases

Kerekes & Olsen 1990

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## Influence of endodontic infection on marginal periodontal status.

Experimental studies in monkeys and clinical studies in periodontitis-prone patients.

Leif Jansson – 1995  
D. Odontol Thesis - Karolinska Institute, Sweden

- *Swed Dent J* 1983; 17; 85-93
- *J Clin Period* 1993; 20; 117-23
- *J Periodontol* 1993; 64: 947-53
- *J Clin Period* 1994; 21: 577-82
- *J. Clin Period* 1995; 22: 598-602
- *J Clin Period* 1995; 22: 729-34

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- ◆ In periodontitis-prone patients, intracanal infection was significantly correlated with:
  - Deeper periodontal pockets
  - Significantly more attachment loss over 6 years  
→ 1.1mm -v- 0.4mm
- ◆ Intracanal infection was the most important contribution to increased pocket depth
- ◆ Intracanal infections stimulate epithelial downgrowth along denuded dentine surfaces with marginal communication
- ◆ *Intracanal infections must not be overlooked when treatment planning for periodontal disease*

Jansson 1995

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## Concurrent Endodontic & Periodontal Diseases

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## Managing Teeth with Concurrent Endodontic and Periodontal Diseases

### Diagnosis

- ◆ *Must differentiate between Endodontic and Periodontal Diseases*
  - *In order to provide appropriate management*

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## Managing Teeth with Concurrent Endodontic and Periodontal Diseases

- ◆ Diagnosis must be based on ALL of the following:
  - History
  - Symptoms
  - Visual appearance of tissues
  - Caries, restorations, etc
  - Radiographic findings
  - Clinical tests -
    - Pulp sensibility tests
    - Periodontal probing
    - Palpation, percussion, mobility, etc.

*i.e. a THOROUGH  
Examination !!*

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## Managing Teeth with Concurrent Endodontic and Periodontal Diseases

◆ Four “absolute essentials”

**CO<sub>2</sub> Pulp Tester**



**Electric Pulp Tester**



**Periodontal Probe**

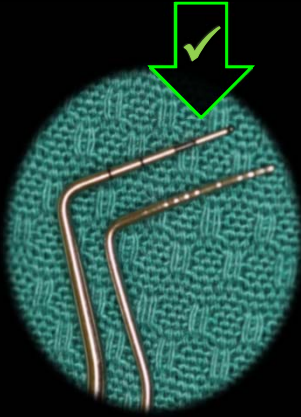


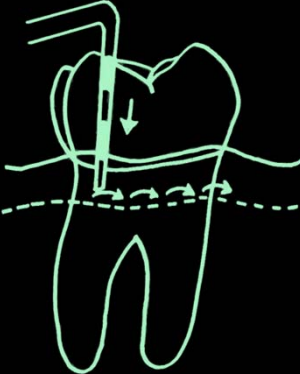
**Periapical Radiograph**




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## Periodontal Probing







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## Managing Teeth with Concurrent Endodontic and Periodontal Diseases

*What treatment should be done first?*

Depends on the DIAGNOSIS !!!

- Key decision:
  - Is there an ACUTE condition?
- OR
- Are both the periapical & periodontal diseases CHRONIC ?

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## Managing Teeth with Concurrent Endodontic and Periodontal Diseases

*What treatment should be done first?*

Acute cases

- Diagnose the source of the pain &/or swelling
  - ? Periapical or ? Periodontal
- Treat this problem first
  - Convert the acute problem into a chronic one
- Follow soon after with other treatment

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## Managing Teeth with Concurrent Endodontic and Periodontal Diseases

*What treatment should be done first?*

### Chronic cases

- i.e. - no pain or swelling
- Ideally sequence the treatment to avoid any cross-seeding of bacteria and the effects of the intracanal infection on the periodontal tissues and the healing response

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## Managing Teeth with Concurrent Endodontic and Periodontal Diseases

*What treatment should be done first?*

### Chronic cases

- ◆ *Periodontal treatment first ???*
- OR
- ◆ *Endodontic treatment first ???*
- OR
- ◆ *Do them simultaneously ???*

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## Managing Teeth with Concurrent Endodontic and Periodontal Diseases

### Debate - ? Perio first

- × Root canal infection significantly affects periodontal healing
- × Pocket depth reduction is significantly less in the presence of root canal infection
- × More marginal epithelium over cementum defects if the root canals are infected

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## Managing Teeth with Concurrent Endodontic and Periodontal Diseases

### Debate - ? Perio first

- × Cementum removed - will expose dentinal tubules:
  - If bacteria in the root canal
    - Promotes Ext. Inflammatory Resorption
  - May expose periodontal tissues to toxic medicaments if used in the root canal
    - Not so critical in areas with recession

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## Managing Teeth with Concurrent Endodontic and Periodontal Diseases

### Debate - ? Endo first

- ✓ Cementum layer is kept intact until the root canal infection is removed
  - No exposed dentine on root surface
  - Reduced chance of ext. root resorption
  - Improved periodontal healing

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## Managing Teeth with Concurrent Endodontic and Periodontal Diseases

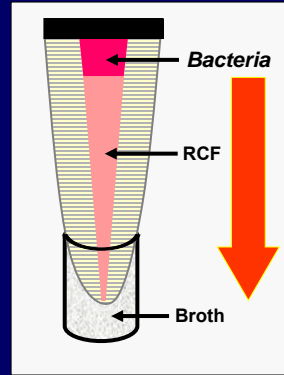
### Debate - ? Endo first

- × BUT root canal fillings do NOT seal canals
  - ➔ All we can do is FILL the main root canal(s)
  - ➔ But NOT the root canal SYSTEM
- × FILLING and SEALING are NOT the same thing!!!

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## Bacterial Migration

- ◆ Many studies have demonstrated that bacteria can readily migrate through root-filled roots
  - Coronal → Apical



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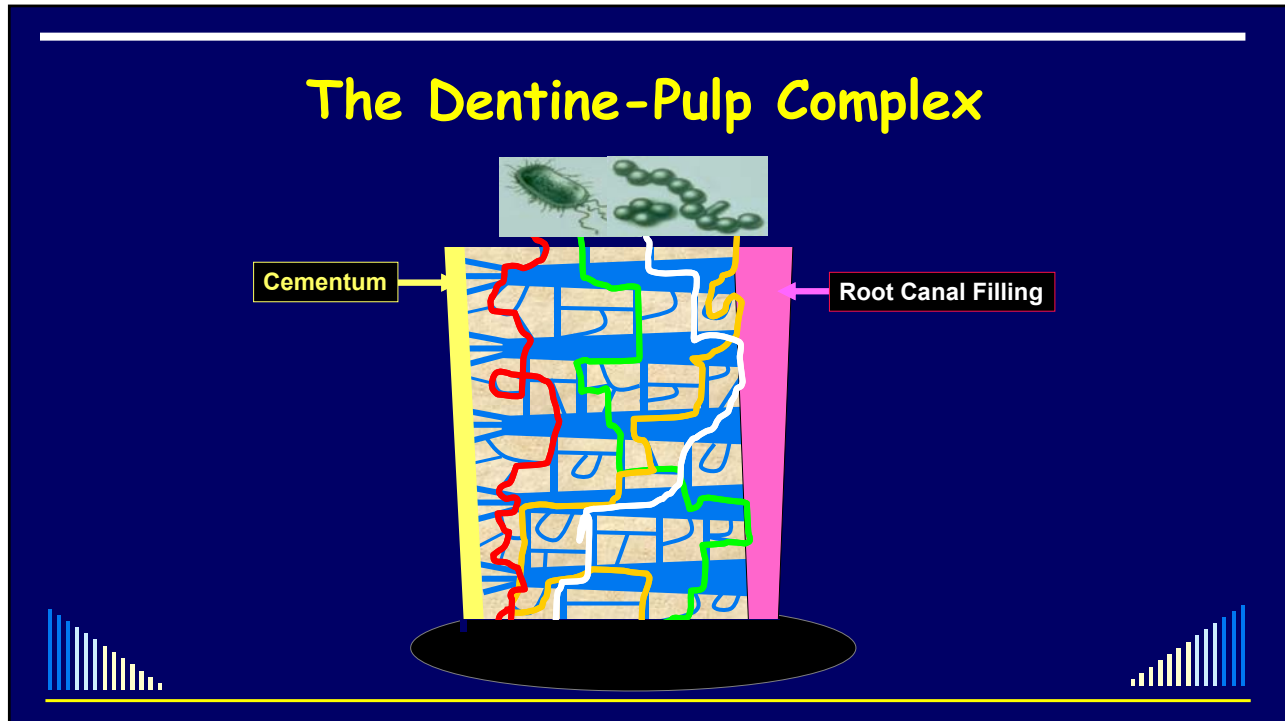
## Bacterial Migration

Year	Reference	Comparison	Bacteria Used	Days Taken to Reach Apex
1990	Torabinejad <i>et al</i>	2 x Bacterial Species	<i>S. epidermidis</i> <i>P. Vulgaris</i>	10 - 73
1993	Khayat <i>et al</i>	2 x RCF Techniques	Saliva bacteria	2 - 48
1999	Barthel <i>et al</i>	3 x RCF Cements	<i>S. epidermidis</i>	8 - 14
1996	Chailertvanitkul	± Smear Layer	<i>S. aureus</i>	7 - 86
1997	Chailertvanitkul <i>et al</i>	2 x RCF Cements + 6 Months Storage	<i>P. intermedia</i>	10 - 71
2001	Timpawat <i>et al</i>	3 x RCF Cements	<i>E. faecalis</i>	16 - 30
2002	Jacobson <i>et al</i>	2 x RCF Techniques	<i>S. pneumonia</i>	2 - 72
2002	Carratù <i>et al</i>	2 x RCF Techniques	<i>P. mirabilis</i> + <i>S. epidermidis</i>	13 - 37
2009	Eldeniz & Ørstavik	2 x RCF Techniques + 8 x RCF Cements	<i>S. mutans</i>	2 - 40

**Range: 2 – 86 days**

Representative Studies from the Literature

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### Managing Teeth with Concurrent Endodontic and Periodontal Diseases

#### Debate - ? Endo first

- × BUT root canal fillings do NOT seal canals
  - Filled canals may be re-infected from the periodontal bacteria if the periodontal treatment is delayed **"Cross-seeding"**
- × Especially when "Concurrent Diseases with communication" between the two sites

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## Managing Teeth with Concurrent Endodontic and Periodontal Diseases

### Debate - ? Endo first

- ✓ Canal sterility is more likely while there is a dressing in the root canal
  - Therefore delay the RCF until the periodontal infection has been removed
    - ⊗ To reduce chance of bacterial “cross-seeding”

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## Managing Teeth with Concurrent Endodontic and Periodontal Diseases

- ◆ WITHOUT communication
  - Do Endodontic treatment first
    - Can complete RCF after usual medication period
  - Then do Periodontal treatment soon after



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## Managing Teeth with Concurrent Endodontic and Periodontal Diseases

◆ WITHOUT communication

Root-filled & Infected RCS with 1° acute apical periodontitis

Post-op RCF

3 year Review

22 year Review

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## Managing Teeth with Concurrent Endodontic and Periodontal Diseases

◆ WITH communication

- Start the Endodontic treatment first
  - Use long-term dressings and defer RCF until overall prognosis re-assessed and favourable
- Do the Periodontal treatment while the root canals are still medicated

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## Managing Teeth with Concurrent Endodontic and Periodontal Diseases

- ◆ Which medicament(s)? - CS/AB (e.g. Ledermix paste)
  - Corticosteroid (triamcinolone)
    - Anti-inflammatory
    - Inhibits clastic cells
    - Prevents & arrests inflammatory resorption
  - Antibiotic (demeclocycline)
    - Anti-bacterial - *BUT limited*
    - Increased mineralisation of bone
    - Inhibits clastic cells

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## Managing Teeth with Concurrent Endodontic and Periodontal Diseases

- ◆ Which medicament(s)? - Calcium hydroxide
  - Anti-bacterial
  - Prevent & arrest inflammatory resorption
  - Stimulates hard tissue formation
  - *BUT - it is toxic:*
    - Tissue necrosis
    - If no cementum:
      - ⊗ Increased ankylosis
      - ⊗ Increased replacement resorption

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## Managing Teeth with Concurrent Endodontic and Periodontal Diseases

- ◆ Which medicament(s)?
  - ? **Ledermix + Ca(OH)<sub>2</sub> pastes**
    - Combines advantages of both materials with no reduction in therapeutic properties
    - Maintains all active components in the canal for a longer period of time
    - Ledermix paste reduces the toxicity of the calcium hydroxide and therefore reduces the harmful side effects

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## Managing Teeth with Concurrent Endodontic and Periodontal Diseases

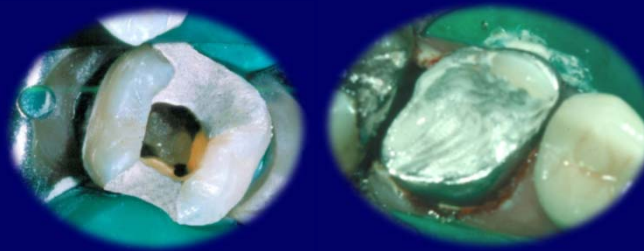
### *Initial Management*

- ◆ Remove existing restorations and caries
  - To assess suitability of tooth for further treatment
- ◆ Chemo-mechanically prepare the root canals
- ◆ Medicate the root canals:
  - Ledermix and Ca(OH)<sub>2</sub> pastes (50:50 mixture)
- ◆ Interim restoration:
  - Ketac Silver or Ketac Fil
  - ± Ortho Band

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## Managing Teeth with Concurrent Endodontic and Periodontal Diseases

- ◆ Ensure adequate interim restoration throughout all phases of treatment
- ◆ Allow normal oral hygiene
  - Avoid SS band if possible



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## Managing Teeth with Concurrent Endodontic and Periodontal Diseases

### Follow-up Management

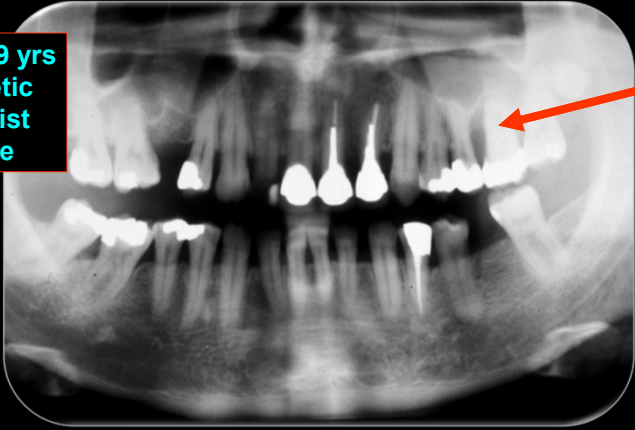
- ◆ Minimum 4 weeks later - do initial periodontal treatment
- ◆ Review healing after 3 months
- ◆ Reassess need for further periodontal treatment
- ◆ If more periodontal treatment (e.g. surgery) req<sup>d</sup>:
  - Change intra-canal medication → Led + Ca(OH)<sub>2</sub>
- ◆ If / when healing response favourable:
  - Complete the root canal filling
  - Place definitive restoration

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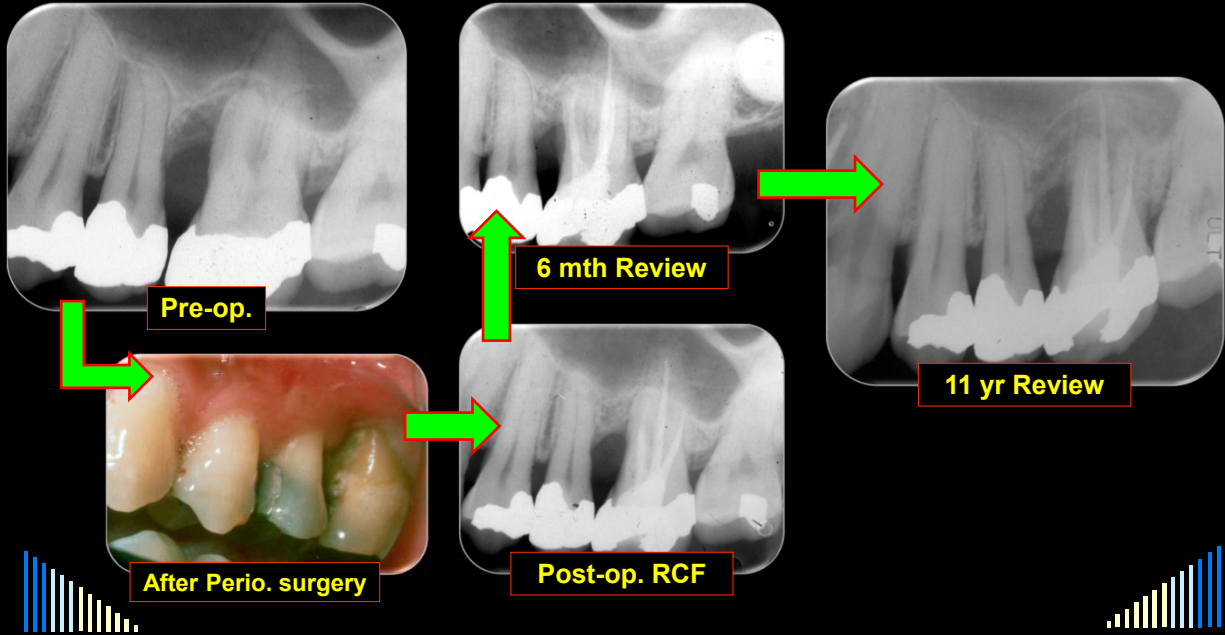
## Managing Teeth with Concurrent Endodontic and Periodontal Diseases

◆ WITH communication

- Age: 39 yrs
- Diabetic
- Dentist
- Male



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Pre-op.

After Perio. surgery

Post-op. RCF

6 mth Review

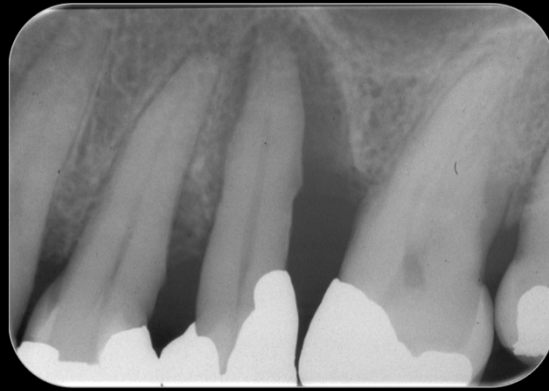
11 yr Review

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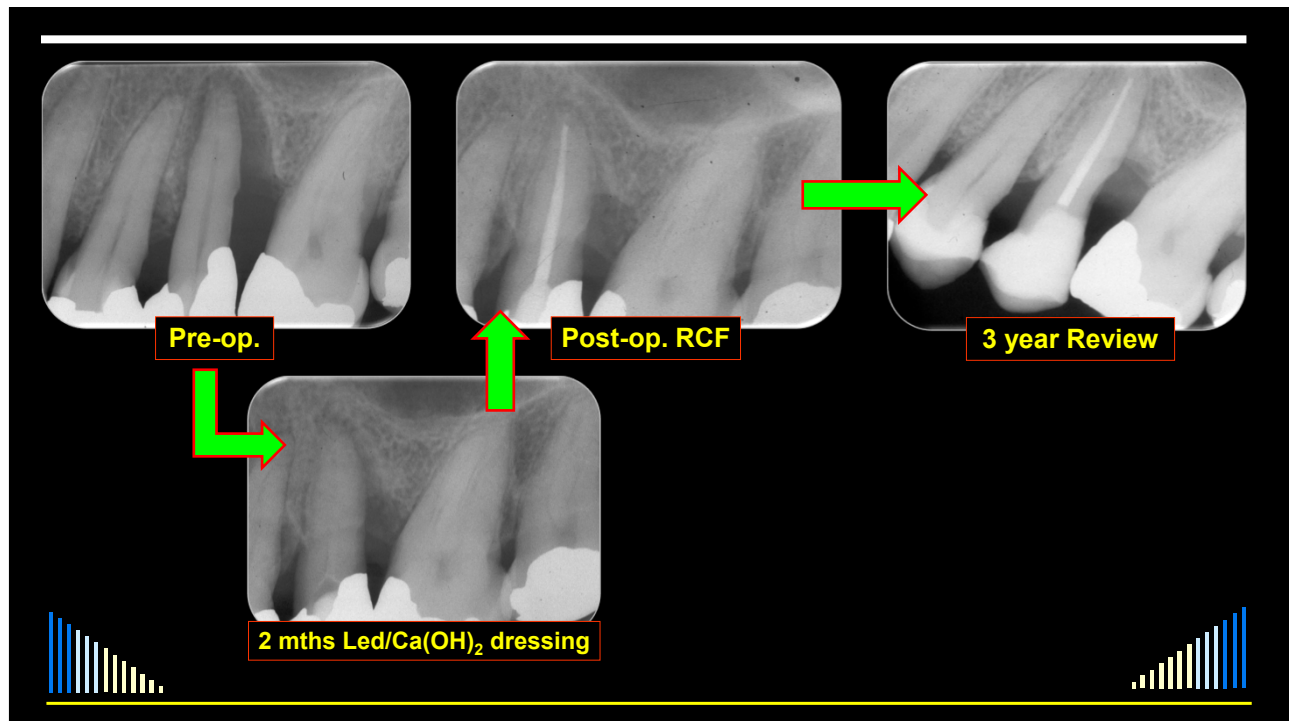
## Managing Teeth with Concurrent Endodontic and Periodontal Diseases

### ◆ WITH communication

- Female
- Solicitor
- Age: 42 yrs
- Nil Medically



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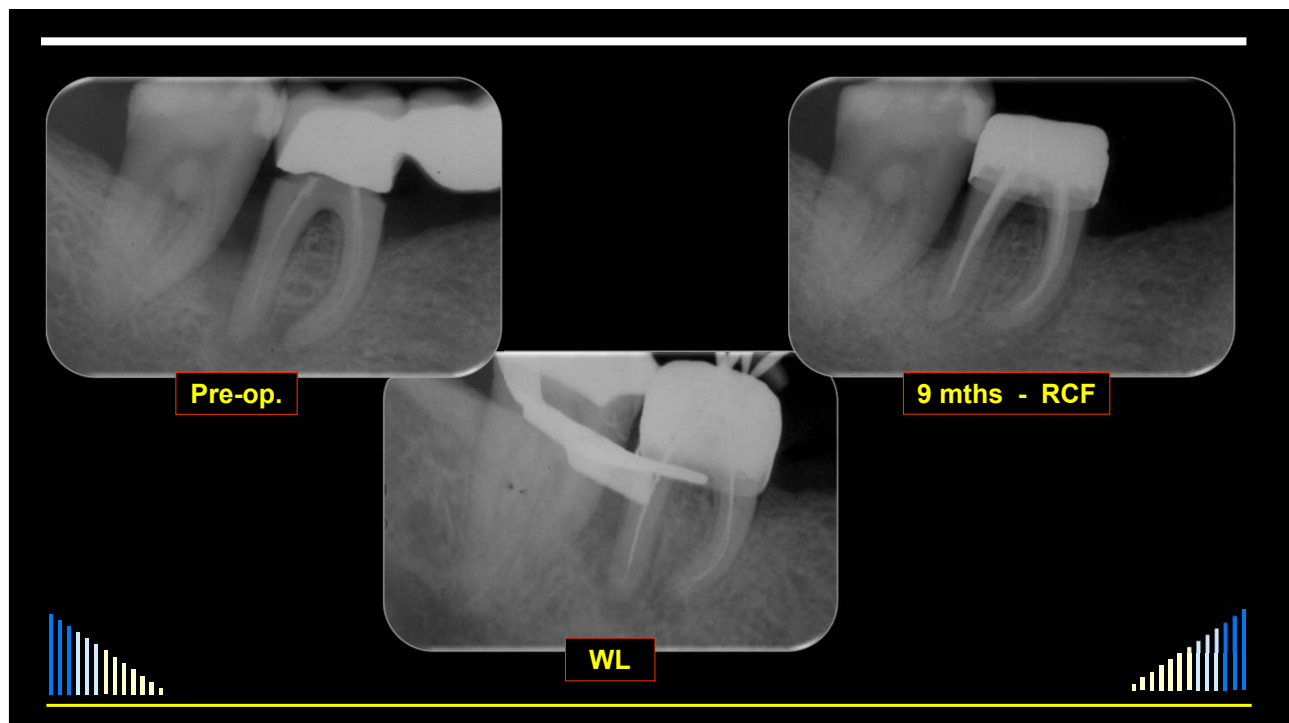
## Managing Teeth with Concurrent Endodontic and Periodontal Diseases

### ◆ WITH communication

- Female
- Secretary
- Age: 35 yrs
- Nil Medically



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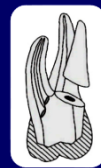
## Prognosis of Teeth with Concurrent Endodontic and Periodontal Diseases

- ◆ Wait and reassess
  - But how long do you wait after 1° treatment?
- ◆ Outcome will depend largely on the periodontal response and prognosis
- ◆ Essential to keep monitoring all aspects:
  - Periodontal
  - Endodontic
  - Restorative
  - And any other aspects

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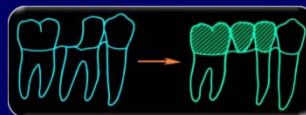
## Alternative Treatments for Teeth with Concurrent Endodontic and Periodontal Diseases

- ◆ Root resection



- ◆ Hemisection

- With root removal
- Without root removal



- ◆ Extraction



Or other prosthesis

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### Root Resections

*Lander et al J Perio 1981; 52: 719-22*

*Molars lost after 10 yrs*

Reason for loss	Max.	Mand.	Total
◆ Periodontal	7 %	3 %	10 %
◆ Endodontic	3 %	4 %	7 %
◆ Root fracture	3 %	15 %	18 %
◆ Other	0	3 %	3 %
<b>TOTAL</b>	<b>13 %</b>	<b>25 %</b>	<b>38 %</b>

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- ### SUMMARY
- ◆ Concurrent Endodontic & Periodontal Diseases
    - Infected root canal system + a periapical condition
    - PLUS periodontal disease
  - ◆ Diagnosis - essential and must be accurate!
  - ◆ Management can influence outcome
  - ◆ Prognosis - depends mainly on Periodontal aspects
  - ◆ Do not confuse with other conditions that have both Endodontic and Periodontal implications

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