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Clinical endodontics tests

These tests obtain the condition of the tooth's pulp and supporting structures. One test is not enough for a decisive diagnosis therefore a combination of tests is necessary.

THERMAL TESTS. It is divided to cold and hot stimuli.

1- Cold testing. It differentiates between **reversible** and **irreversible pulpitis** and identifying **necrotic teeth**. Teeth with calcified canals need more time for the cold stimulus to reach the pulp. Cold testing may be done by air blast, cold drink, ice stick or ethyl chloride.

If a tooth is sensitive to a cold stimulus which subsides after removal of stimulus then the condition is reversible.

if the sensitivity takes time more than few seconds then the condition may be irreversible.

if there is no stimuli the tooth necrotic



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THERMAL TESTS. It is divided to cold and hot stimuli.

2- Hot testing. The use of a hot stimulus can help locate **symptomatic tooth with necrotic pulp**. Heated gutta percha stick or hot water may be used.

PERCUSSION. This is used to find if the apical periodontium has been affected by the pulpal pathology. Any hard instrument may be used to tap the incisal/occlusal surface of the tooth.

PALPATION. This test signals the further spread of inflammation from the periodontal ligament to the periostium overlying the bone. This test checks for fluctuation and possible asymmetry of the surfaces around the tooth.

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Mobility

A mirror handle is placed on one side of the tooth and a note made of the degree of movement: up to 1 mm scores 1, over 1 mm scores 2 and vertically mobile teeth score 3.

Occlusal analysis

It is important to examine suspected teeth for interferences on the retruded arc of closure, intercuspal position and lateral excursions. Interferences in any of these positions could result in a degree of occlusal trauma and institute acute apical periodontitis.

Sinus tract exploration

Where a sinus tract is present, it may be possible to insert a small gutta-percha point. A radiograph is then taken to see which root the tract/point leads to.

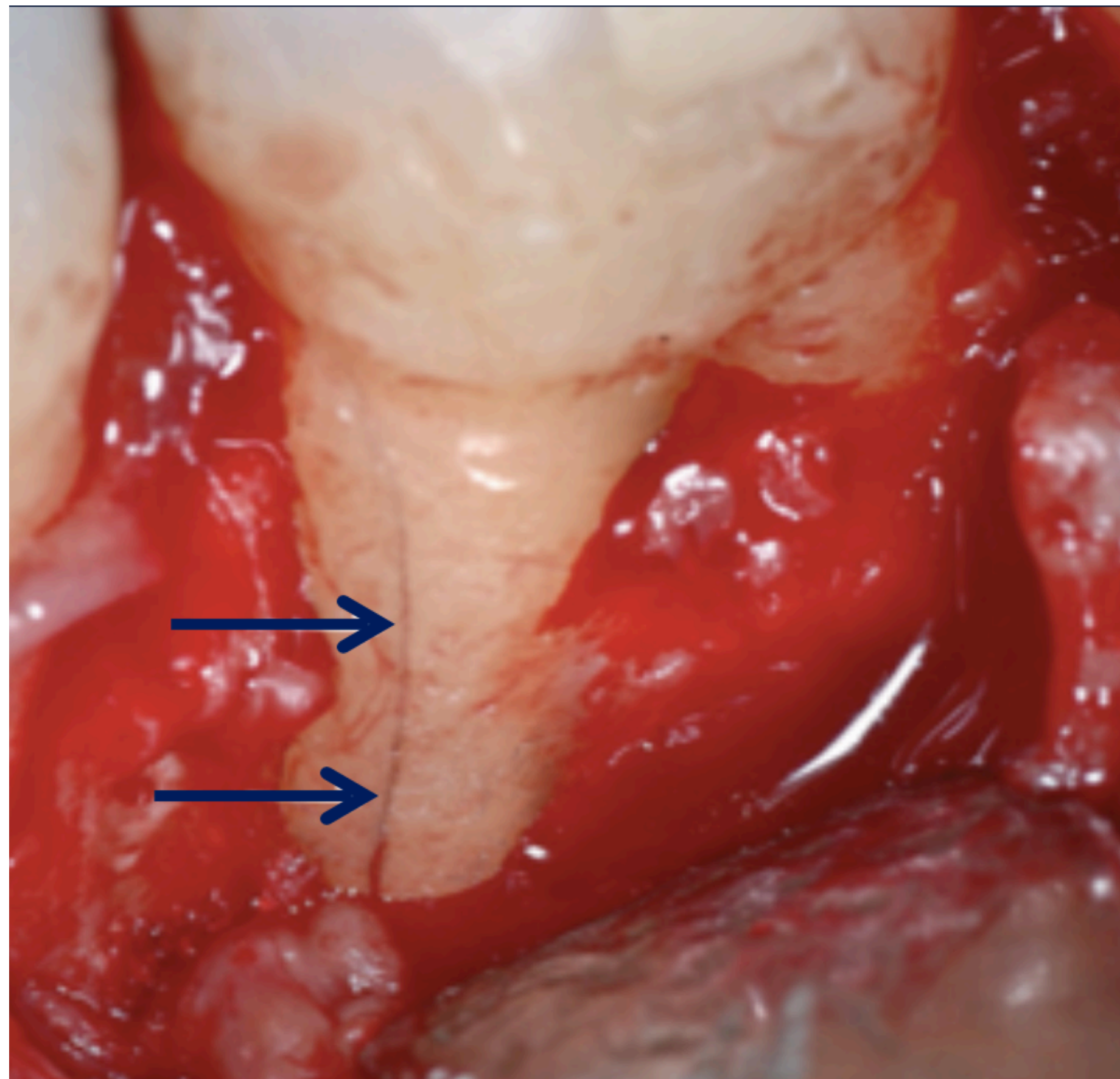
Transillumination

Transillumination with a fibre optic light show cracks in teeth. These cracks cause stretching of the pulp tissues when a lateral pressure is exerted on the tooth therefore causing pain.

Periodontal probing

Detailed periodontal probing around suspected teeth may reveal a sulcus within normal limits. However, deeper pocketing will be identified. A narrow defect may be an indication of a root fracture or an endodontic lesion draining through the gingival crevice. This causes an endodontic-periodontal lesion.

diagnosis of Vertical root fracture(VRF)



pain and swelling

isolated deep pocket

J shaped radiolucency



endodontics radiography

Radiographs

- Radiographs should be taken using film holders and a paralleling technique and be viewed using an appropriate viewer with magnification necessary.
- They will not show early signs of pulpitis as there is no periodontal widening at this stage of pulpal degeneration.
- Radiographs may provide important information to help to confirm a diagnosis, but they should not be used alone.
- Radiographic findings may include the loss of lamina dura (laterally or apically) or a periradicular radiolucency indicative of pulp necrosis.
- Alternatively, radiographs may show pulp chamber or root canal calcification, which may explain reduced responses to pulp sensitivity testing. Radiographic examination may also reveal tooth/root resorptive defects.

No X-Rays...

No

Endodontics

Treatment

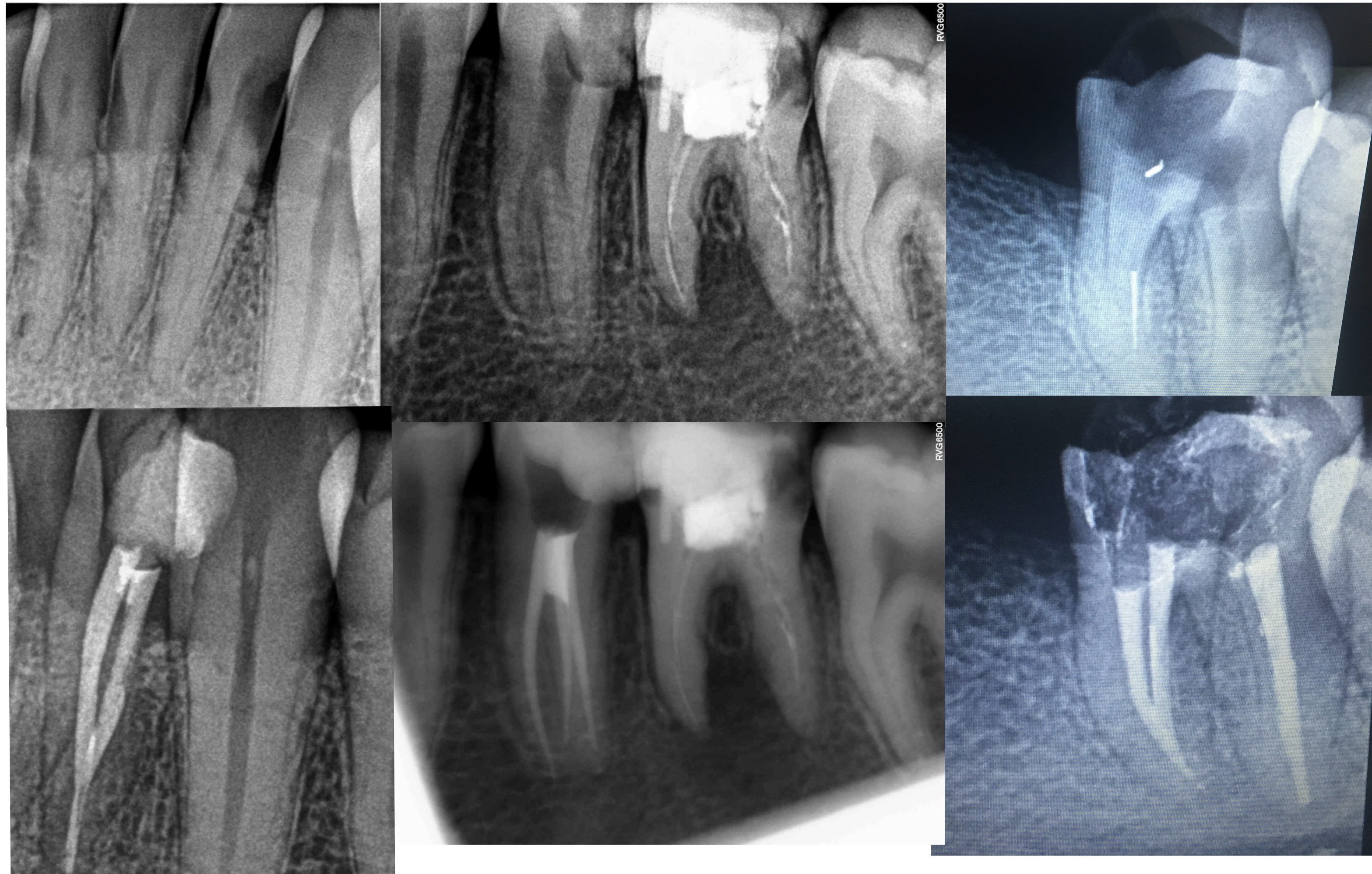
endodontics radiography

diagnostic x-ray



endodontics radiography

diagnostic x-ray



endodontics radiography

confirm the working length

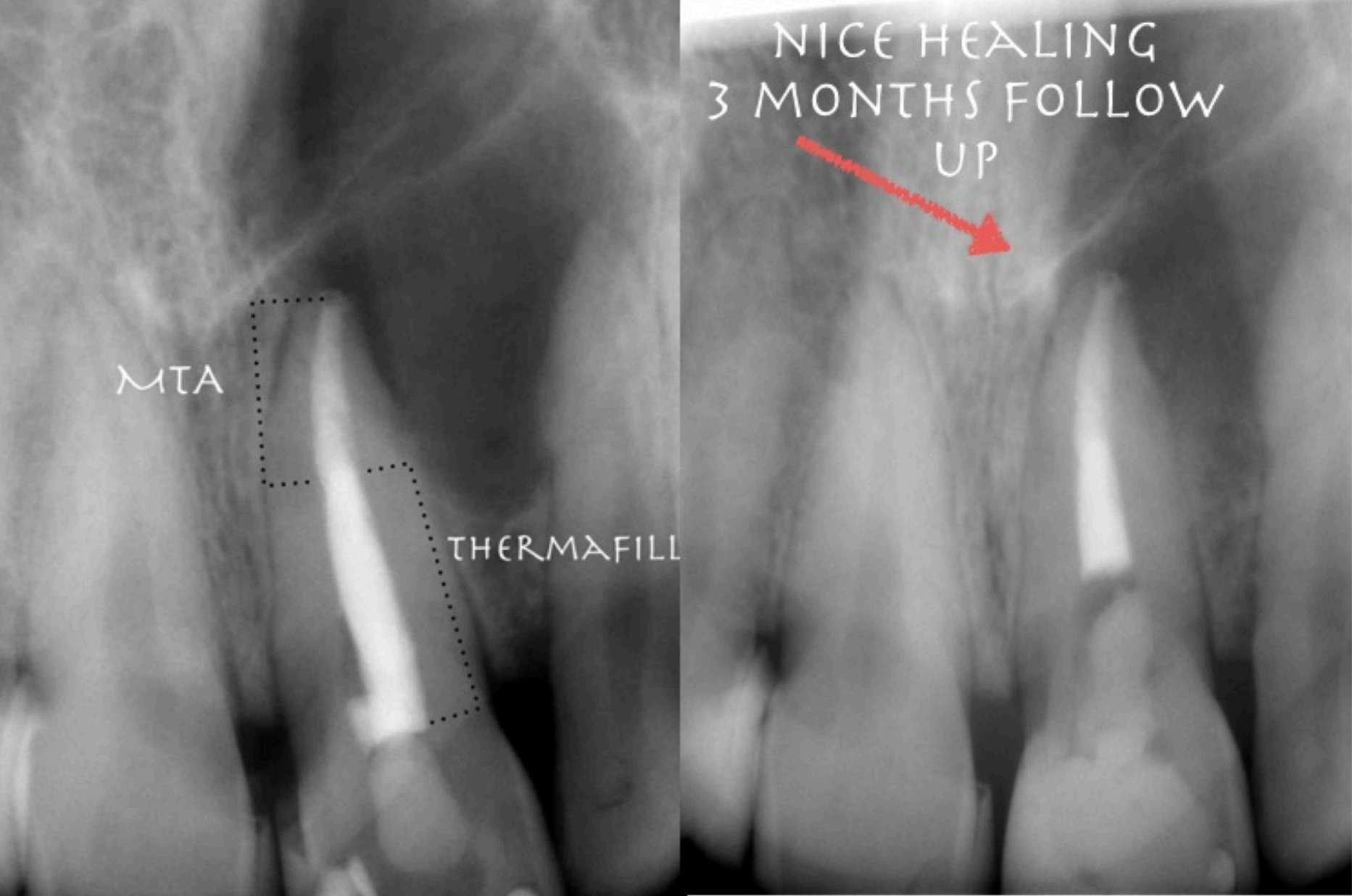


endodontics radiography



always trace the lamina dura

endodontics radiography



MTA PLUG AND HEALING AFTER 3 MONTHS FOLLOW UP

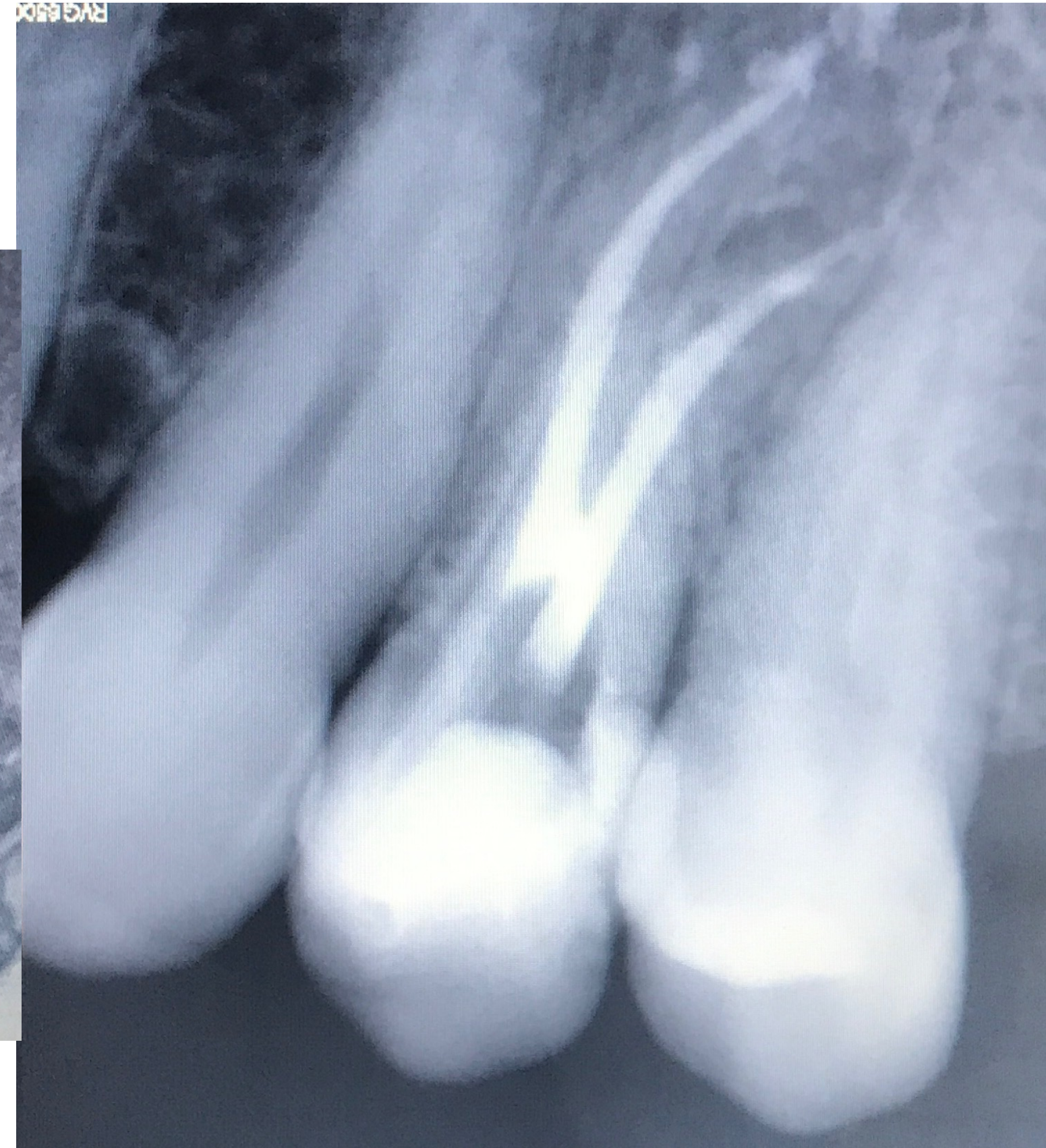
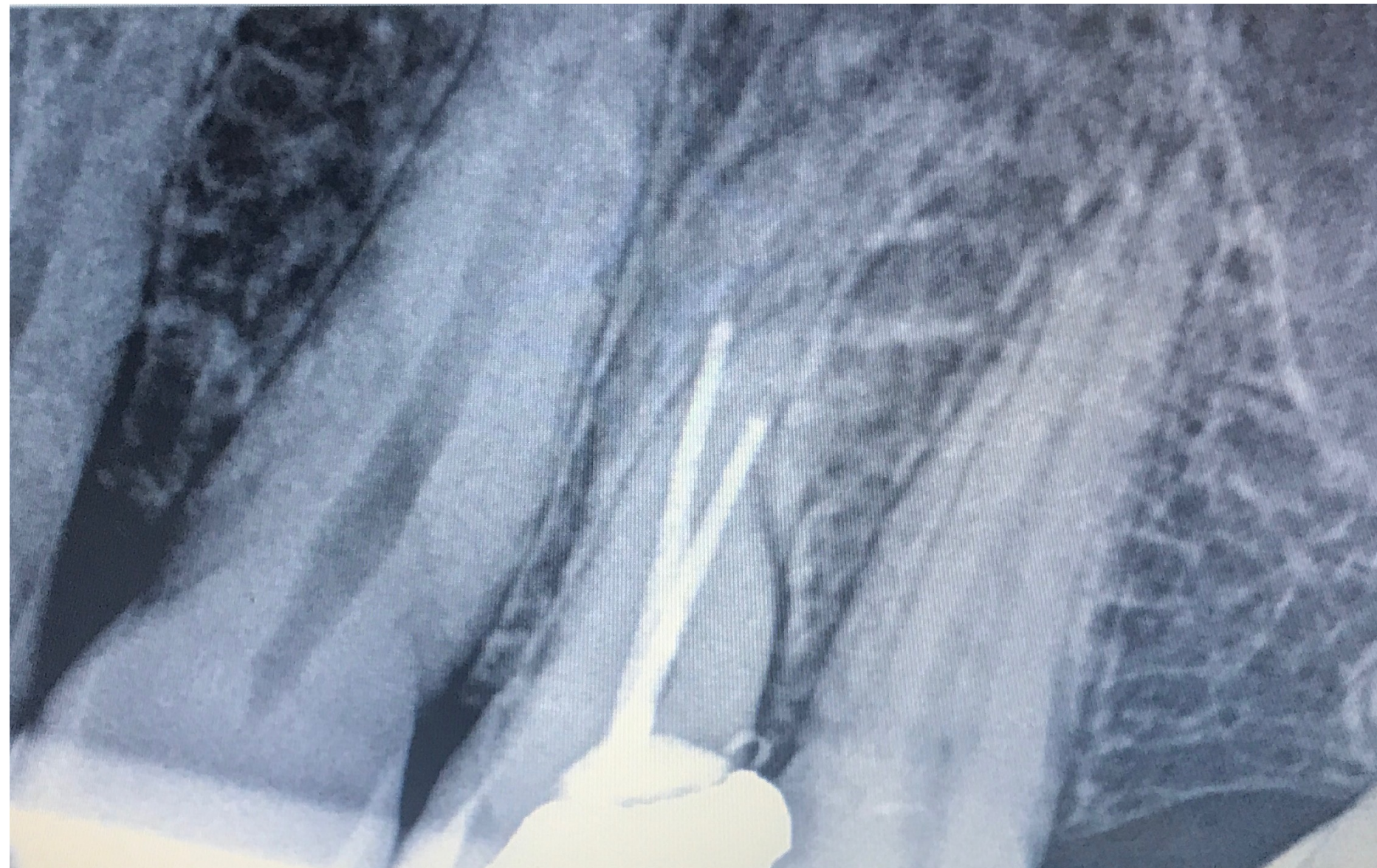
MAP SYSTEM
Micro-Apical Placement System



Designed & manufactured by
PD
Dental Products

ENDODONTICS RADIOGRAPHY

same lingual opposite buccal
SLOB



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Test cavity

Occasionally, as a last resort, an access cavity is cut into dentine without local anaesthesia as an additional way of sensitivity testing.

Selective anaesthesia

Selective anaesthesia can be useful in cases of referred pain to distinguish whether the source of pain is mandibular or maxillary in origin. It is less useful for distinguishing pain from adjacent teeth, as the anaesthetic solution may diffuse laterally.

Electric pulp test. It provides limited but useful information about the response of the nerve fibres in the pulp. Many factors affect the level of response as enamel thickness, area of probe placement (in the middle third of the labial surface), dentin calcification, restorations and patient's level of anxiety. False positive and negative results may happen. A newly erupted tooth may give a negative response whereas a traumatised young tooth may not respond to testing. Multirooted teeth give inconclusive readings because there are many roots with different degrees of pulp inflammation in each root canal.

CLINICAL FINDING OF REVERSIBLE PULPITIS

Palpation	Not sensitive
Percussion	Not sensitive
Mobility	None (unless periodontal condition exists)
Perio probing	None (unless extensive periodontal disease exists)
Thermal	Hypersensitive to heat or cold (quick response lasting for seconds)
Electric Pulp Test	Responds
Translumination	Not used unless a fracture is suspected
Selective anesthesia	Not necessary
Test cavity	Not necessary, tooth is vital
Radiographic	Periapical x-ray shows normal periapex

CLINICAL FINDING OF IRREVERSIBLE PULPITIS

Palpation	No response initially; may be sensitive in later stages
Percussion	No response initially; may be sensitive in later stages
Mobility	None (unless periodontal condition exists)
Perio Probing	None (unless extensive periodontal disease exists)
Thermal	Hypersensitive to hot and cold with prolonged response
Electric Pulp Test	Responds
Transillumination	Not used unless fracture is suspected
Selective Anesthesia	May help identify offending tooth
Test cavity	Not necessary, tooth is vital
Radiographic	Normal or thickened periodontal ligament

Clinical Findings in Necrotic Pulp

Visual	Check for decay, fracture lines, swelling, sinus tracts, orientation of tooth, and hyperocclusion
Palpation	Sensitive
Percussion	Mild to severe pain (depends on periapical inflammation)
Mobility	None to moderate (depends on bone loss)
Perio Probing	None (unless extensive periodontal disease exists)
Thermal	No response
Electric Pulp Test	No response
Transillumination	Not used unless fracture is suspected
Selective anesthesia	May help identify offending tooth
Test cavity	May be used if vitality is suspected
Radiographic	Periapical radiograph may show normal or thickened periodontal ligament, or radiolucent lesions

PAIN

odontogenic

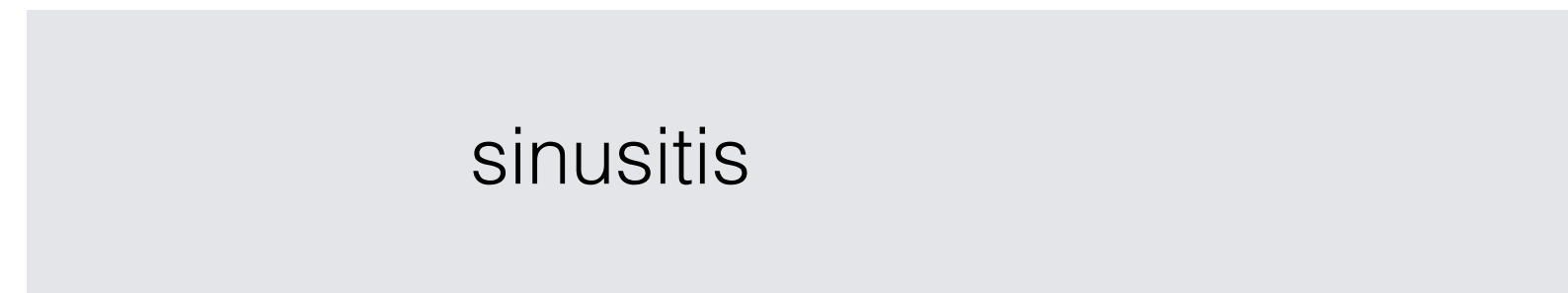
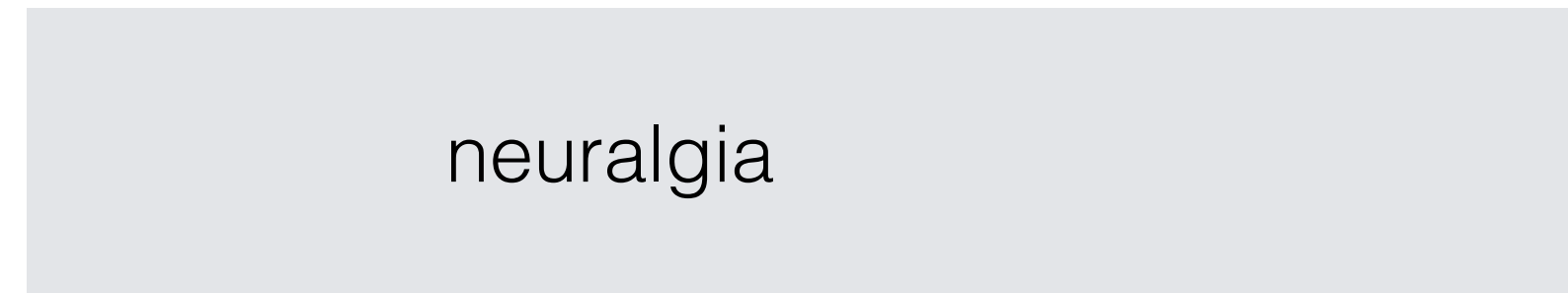
non-odontogenic

migraine

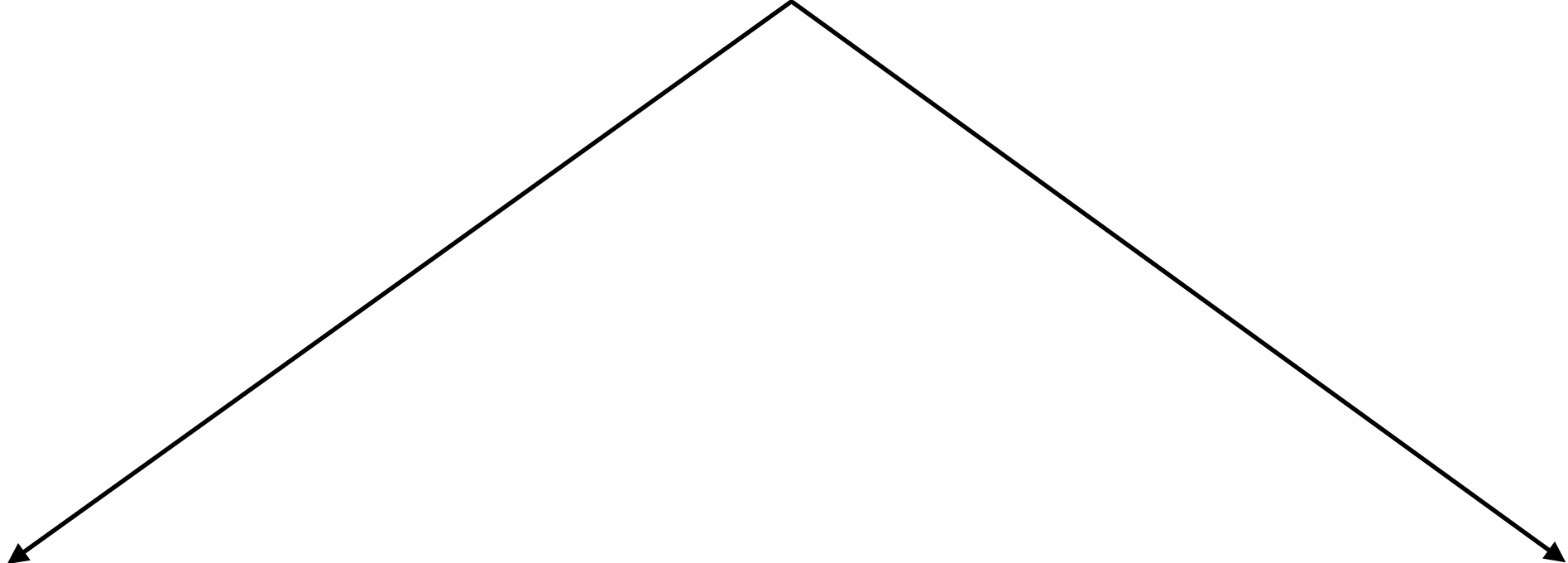
neuralgia

otitis

sinusitis



DIAGNOSIS



plulpal

reversible pulpits

irreversible pulpits

necrosis

periapical

Symptomatic apical periodontics

Acute apical periodontitis

Acute Apical abscess

Chronic Apical Abcess

