

Radiography

Radiography

- Roentgen tube – x- ray tube:

Cathode – Anode – Tension

Catode (heated) - Electrons – go against
Anode – brake - x ray originates



Radiography

- Imaging method completing clinical examination of patients

Radiography

Principle:

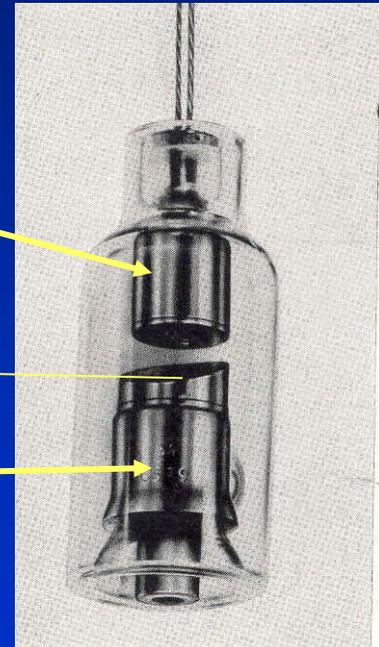
X- rays going through various materials
(tissues) are absorbed – image on the film
(a special suspension AgBr – silver bromide)

Roentgen tube X ray tube

Cathode
wolfram
(tungsten) filament inside
(heated – brought to white heat)

Focus – made of wolfram

Anode



Extraoral and intraoral radiography

- Extraoral:

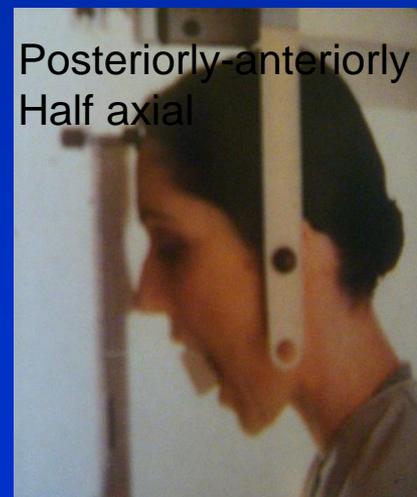
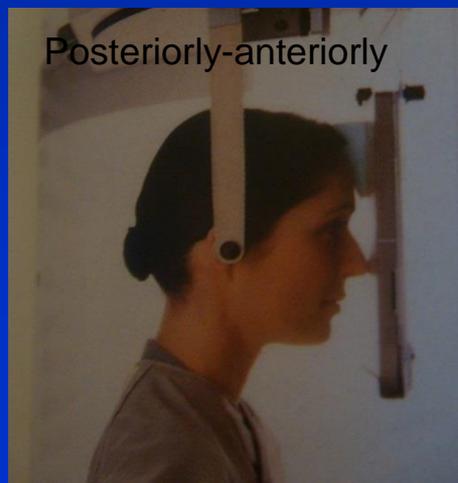
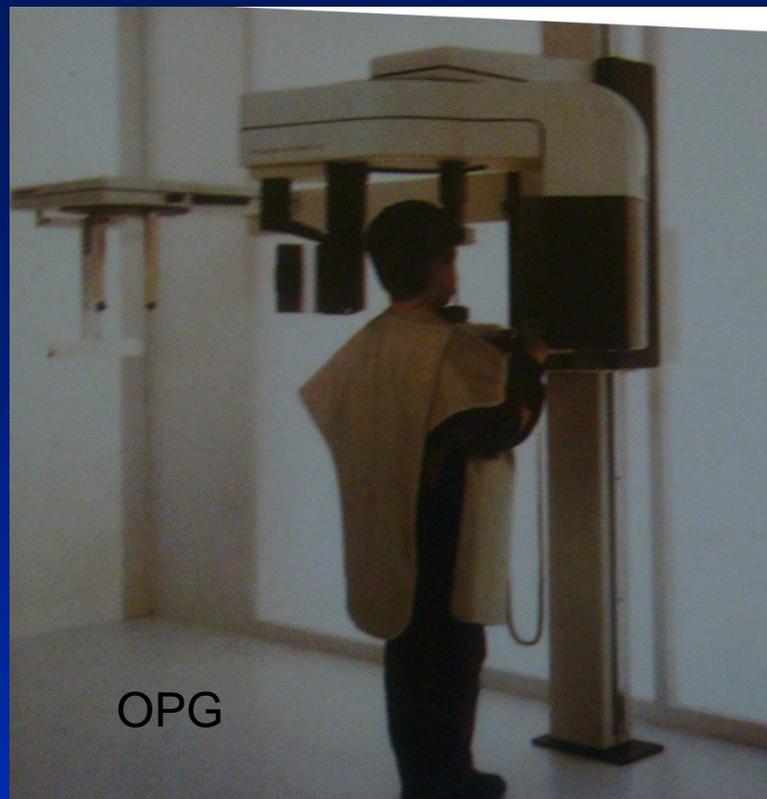
The film is placed outside of oral cavity

- OPG (orthopantomography)
- Teleradiography
- Special projections of a skull (posteriorly – anteriorly)
- Half axial
- Side projection (TMJ, mandible)
- CT

Extraoral and intraoral radiography

Intraoral – the film is placed into the oral
Cavity – a special x-ray apparatus.

- Teeth
- Alveolar bone
- Periodontal space
- Fillings
- Caries
- Level of endodontic treatment



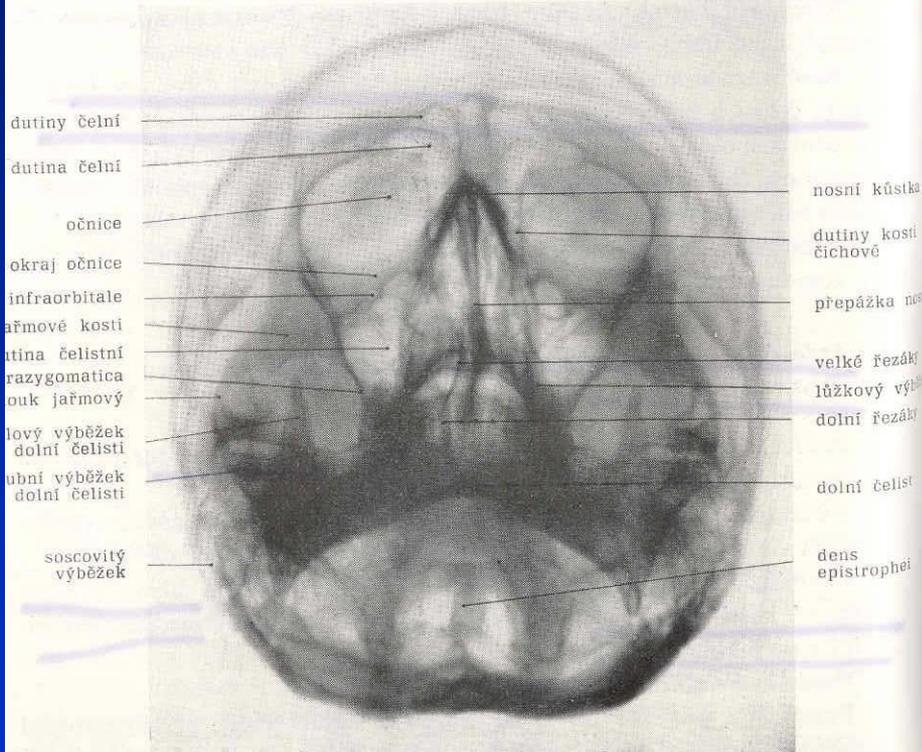
OPG



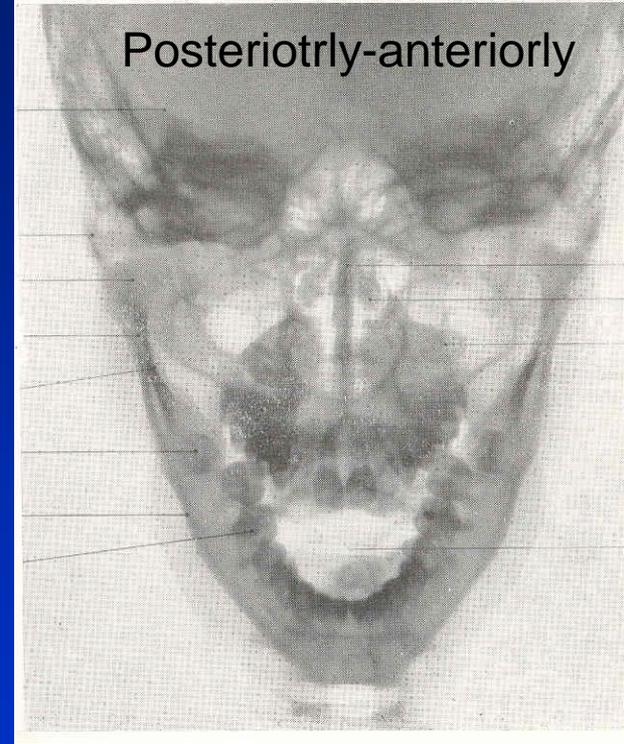
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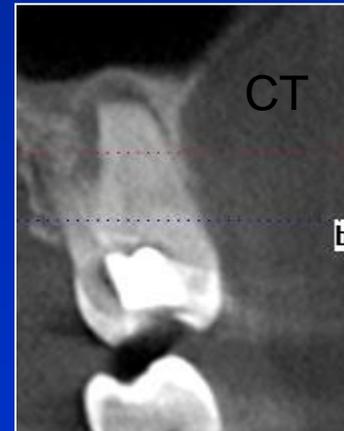
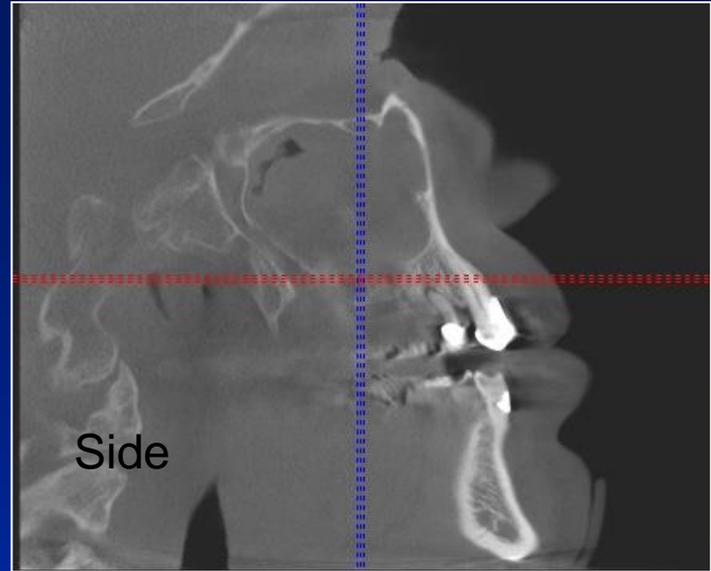
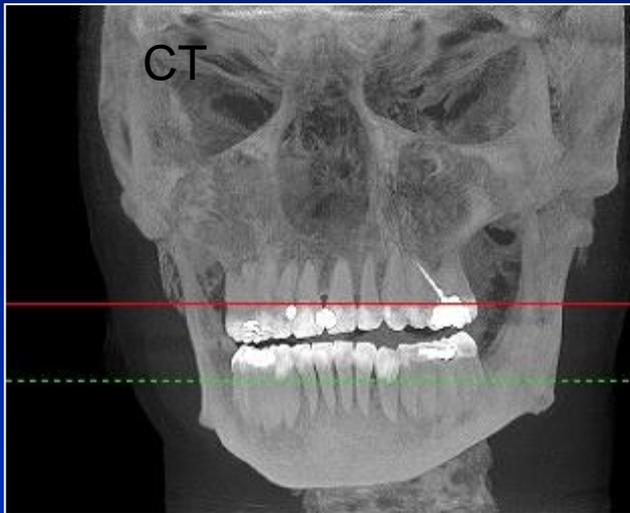
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Half axial



Posteriotrly-anteriorly





Intraoral radiography

Film or sensor placed in oral cavity

Special apparatus

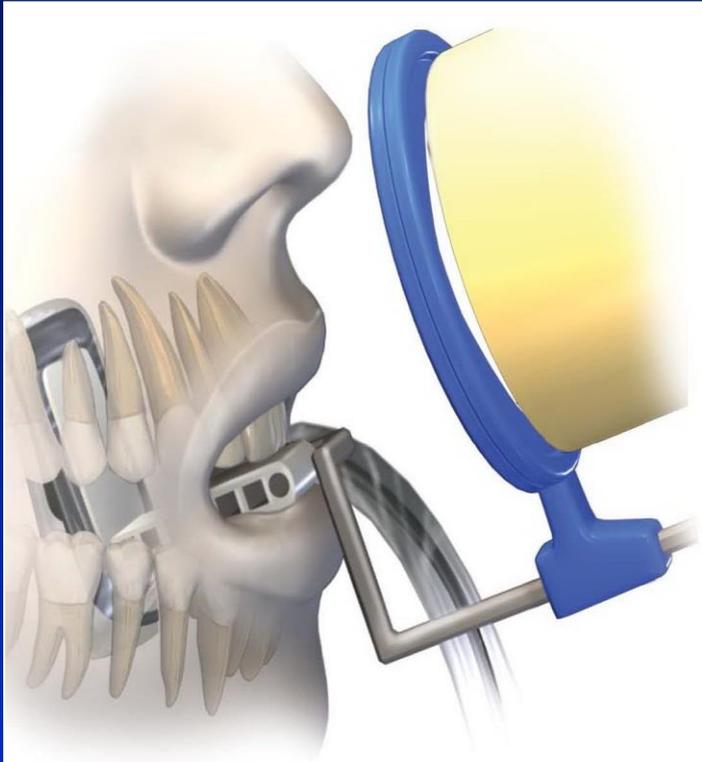
- Teeth
- Alveolar bone
- Periodontal space
- Fillings
- Caries
- Impacted teeth
- Level of endodontic treatment



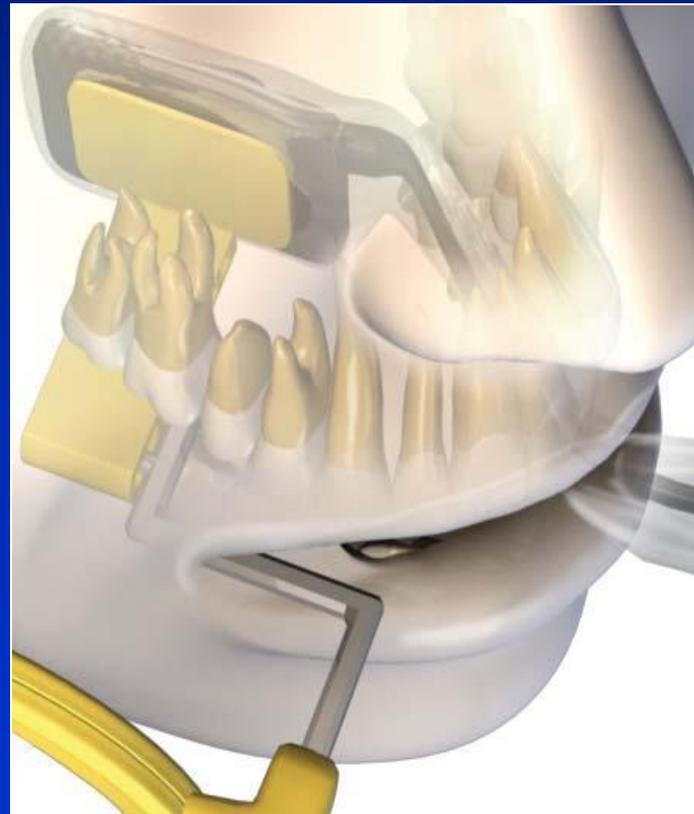
Position of the tubus

- In vertical plane
- In horizontal plane

In vertical plane



Parallel technique
Film or sensor in a special holder
Parallel to long axis of teeth



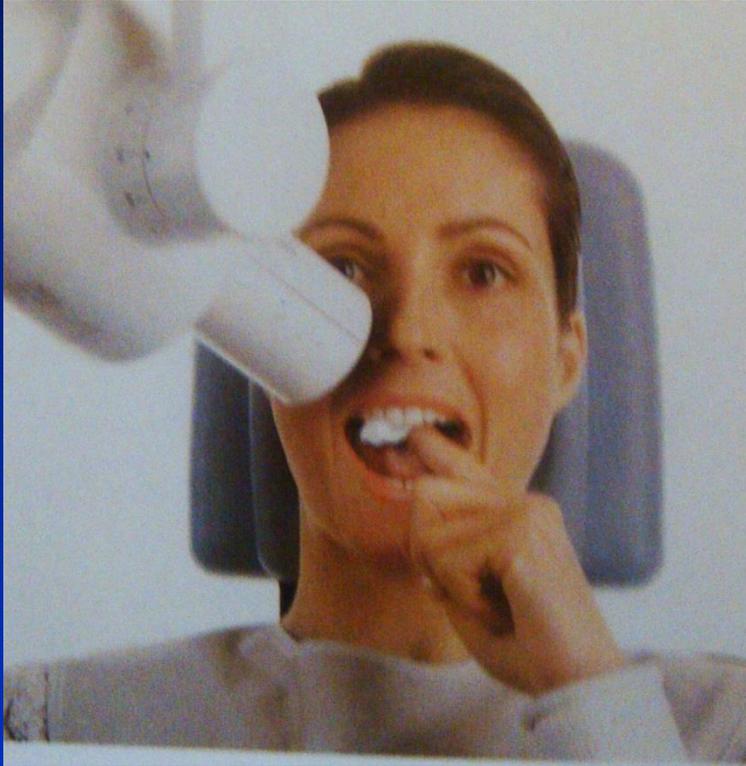
Vertikální zastavení správné

*Velikost obrázku odpovídá skutečnosti –
Snímek je
ISOMETRICKÝ*

Vertikální zastavení nesprávné

*the picture of the tooth is smaller– hypometric
or
the picture of the tooth is bigger than the tooth - hypermetric*

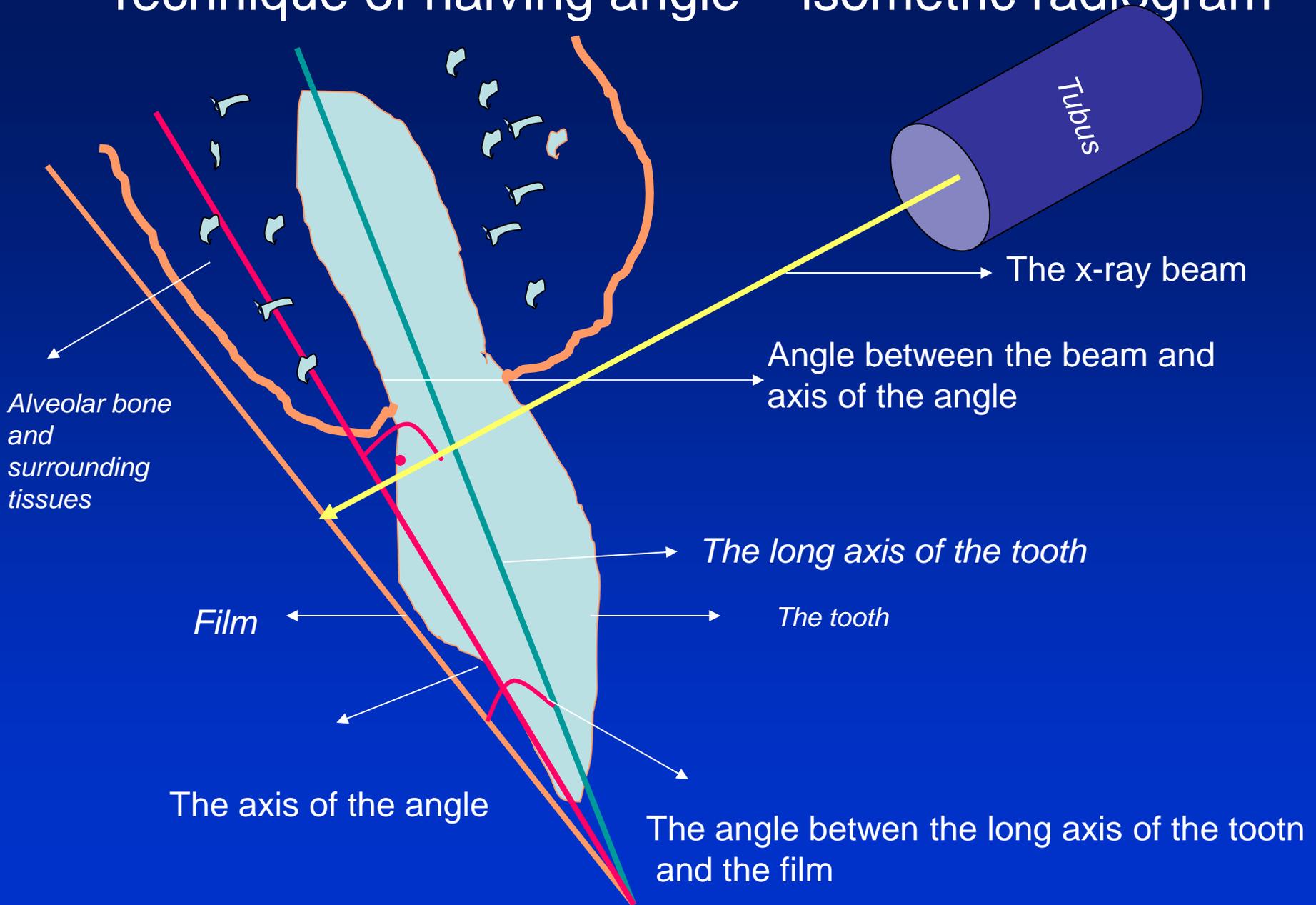
If parallel technique is not possible



The technique of isometric radiogram



Technique of halving angle – isometric radiogram

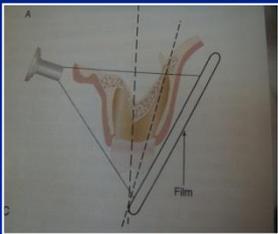


In horizontal plane

Hypometric and hypermetric picture

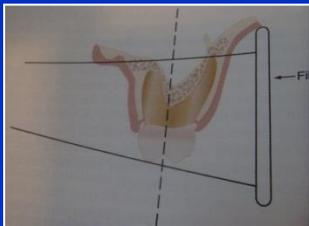
Hypometric – the picture is smaller

Central beam goes perpendicular on the tooth



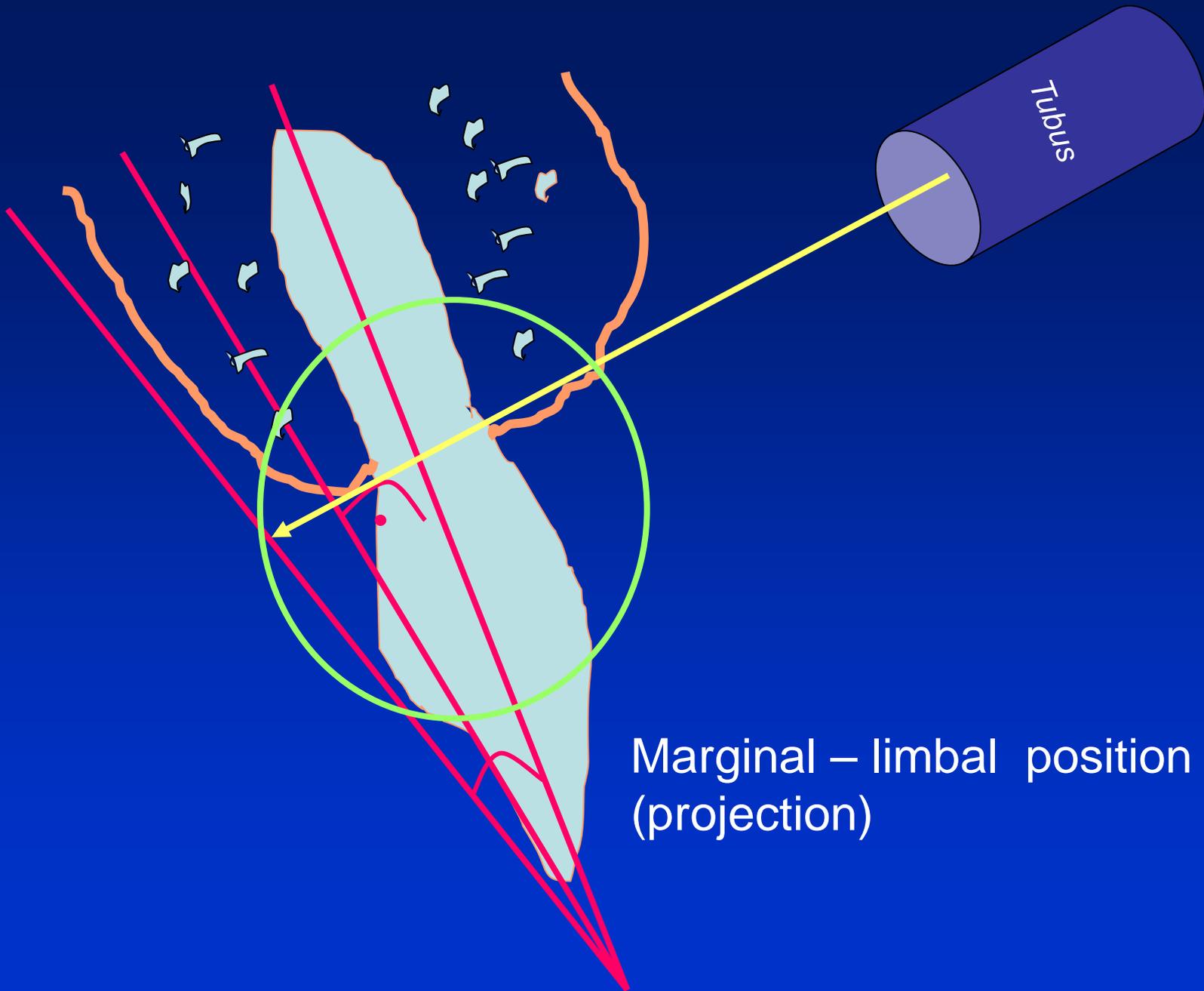
Hypermetric picture – the picture is bigger

– central beam goes perpendicular to the film paprsek goes perpendicular to the film.

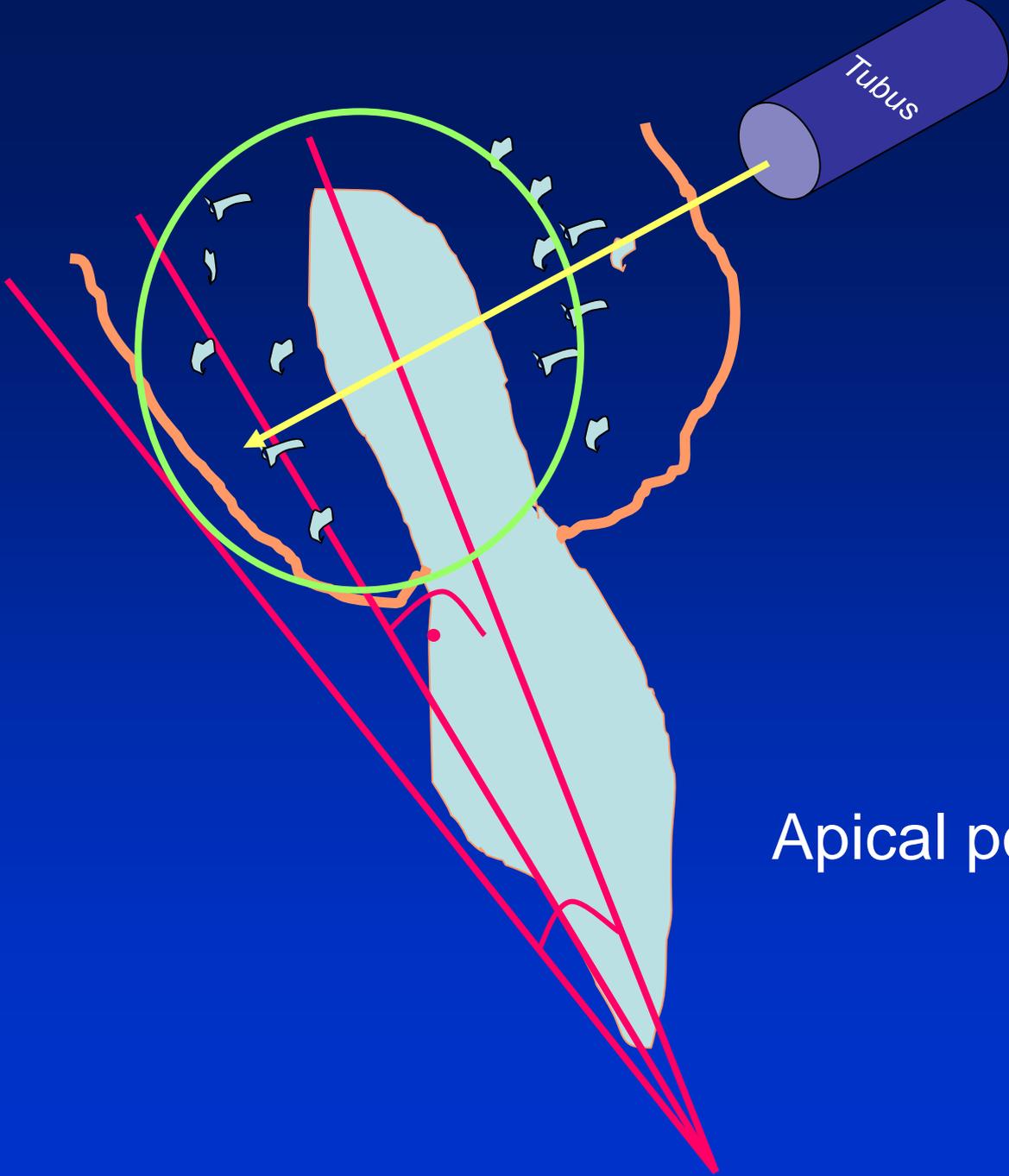


The tubus can have vairous position

- Apical projection: the central beam goes through the apex area
- Periodontal projection: the central beam goes through the uper third of the root
- Coronal projection: the central beam goes through the crown.



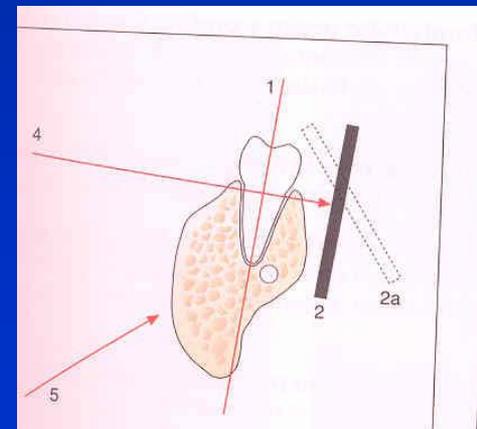
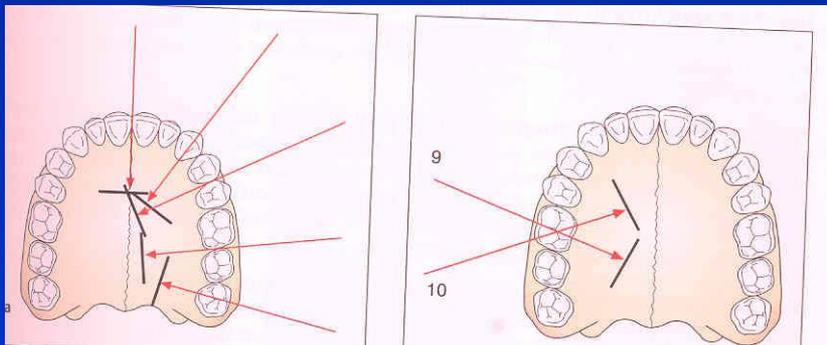
Marginal – limbal position
(projection)



Apical position - projection

Orthoradial and excentric projektion

- Orthoradial – the central beam goes parallel to interdental septa
- Excentric– the central beam goes from distal or mesial side.



Bitewing



Film or sensor is in a special holder,
patient bites into

The central beam goes parallel to
interdental septa

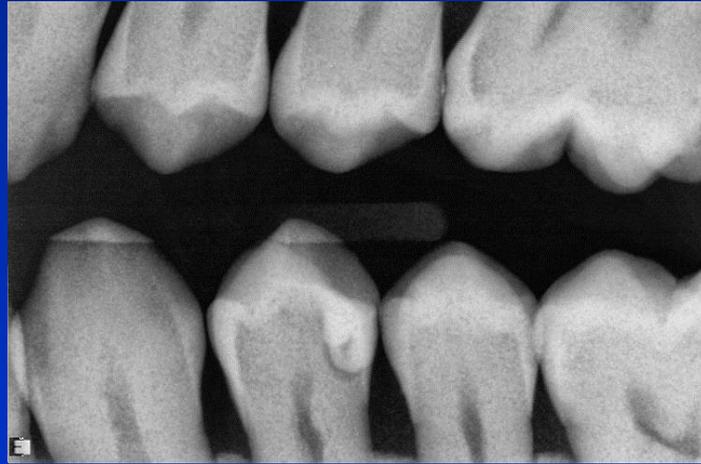
Crowns of teeth are well seen – good for
early diagnosis of dental caries

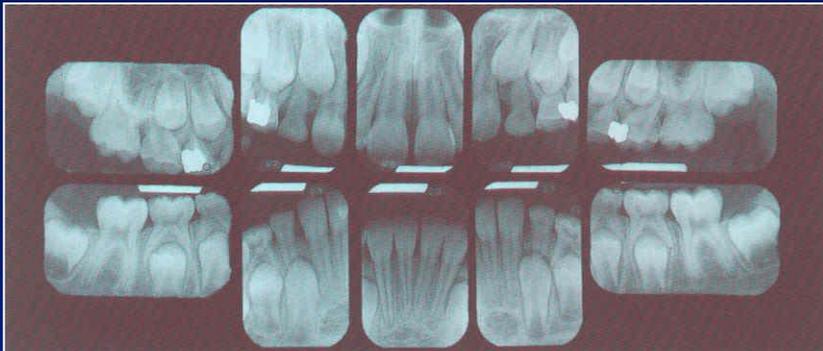
Principle of imaging

- Irradiation is absorbed in various materials esp. in hard tissues. Accc to amount of absorbed irradiation radioopacity or radiolucency can be seen.

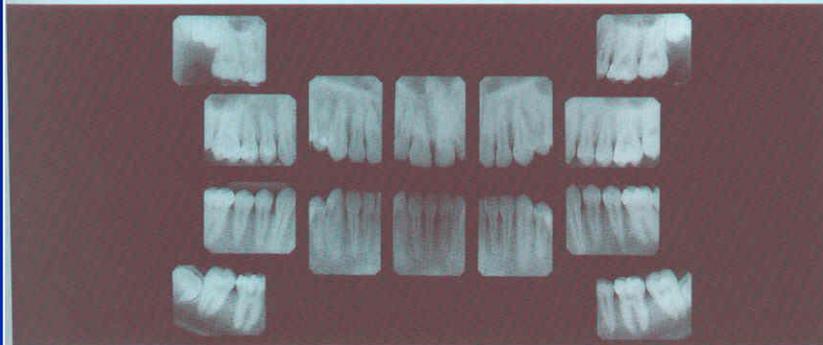
Radiolucency – dark

Radioopacity - white

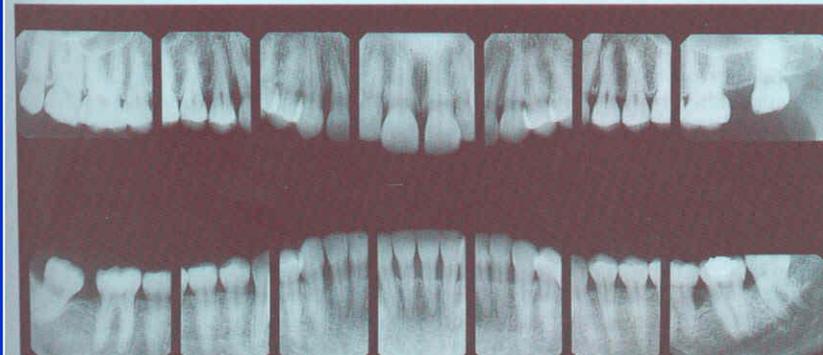




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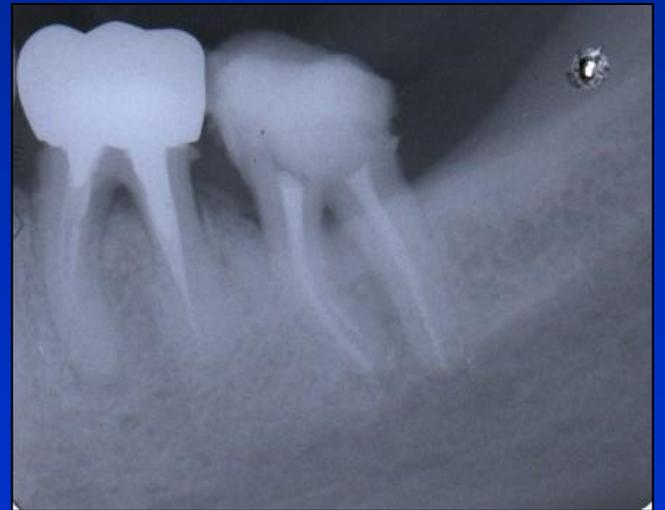
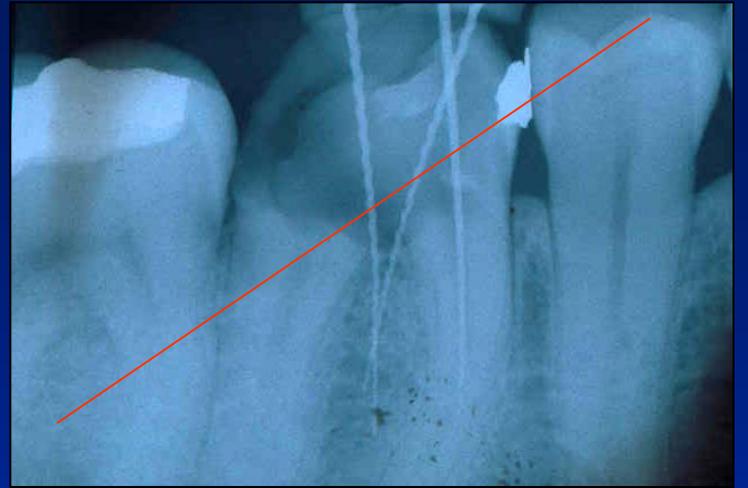
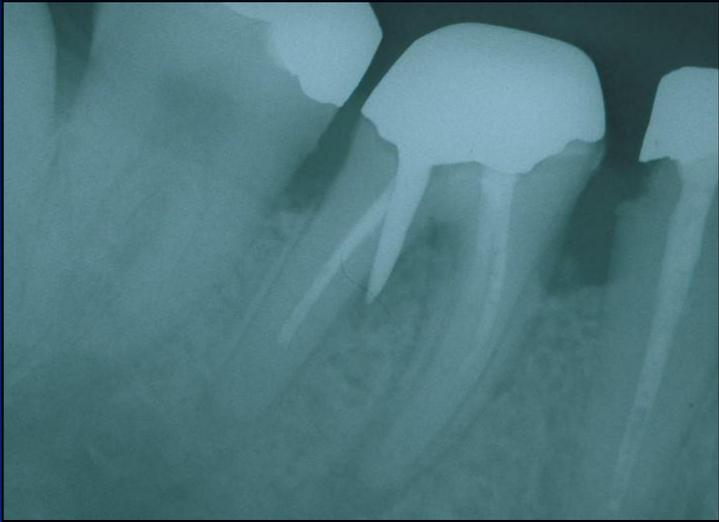


- Rtg status



i.o.



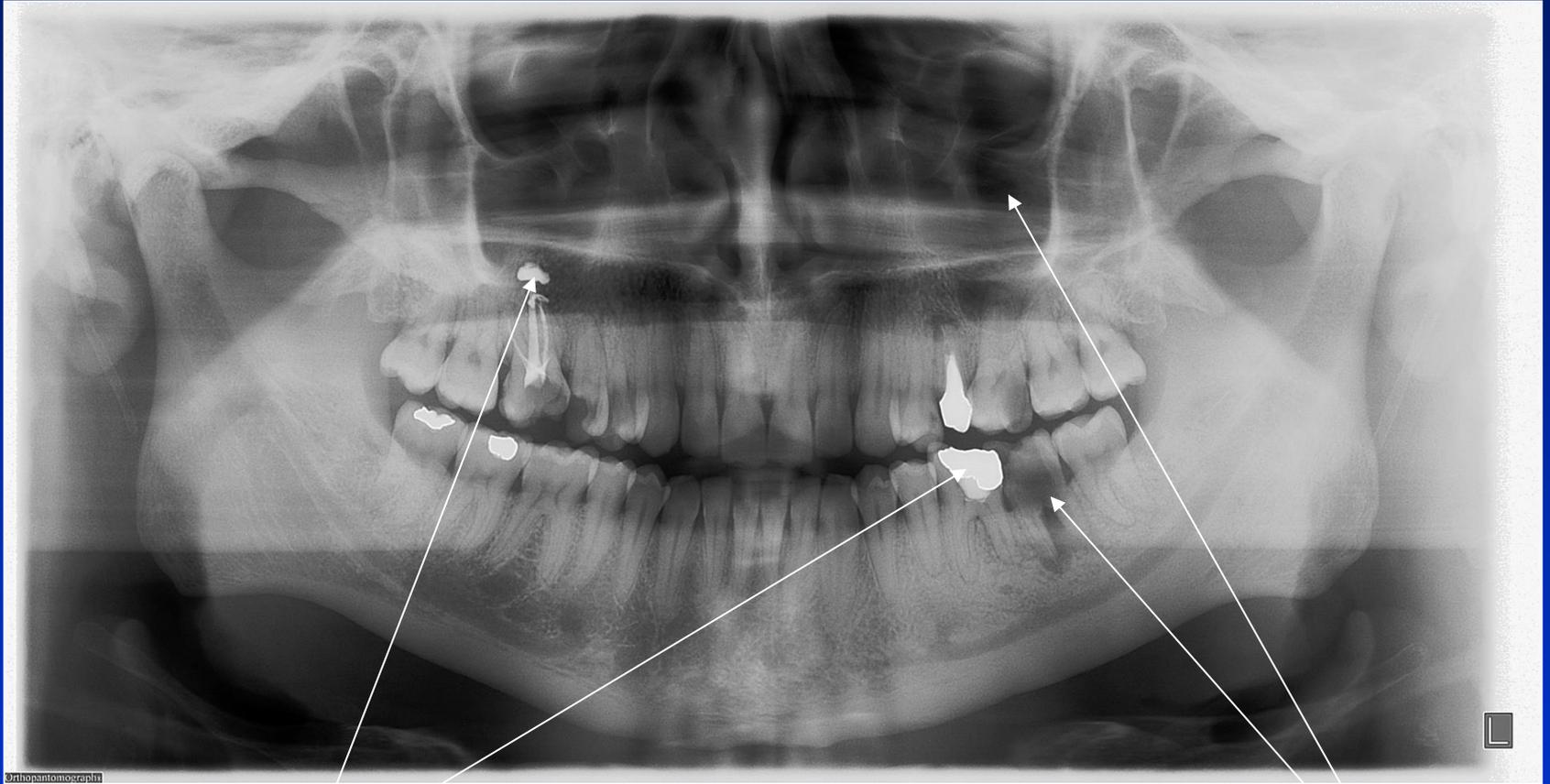




OPG



Orthopantomograph



Orthopantomograph

radioopacity

radiolucency

CBCT

