

The surgery of impacted teeth III.

Upper canines

Unerrupted teeth

- Terms
- Frequency

Unerupted teeth – order of frequency

- Lower wisdom
- Upper wisdom
- **Upper canine**
- Lower 2nd premolar
- Upper 2nd premolar
- Upper mesial incisor
- Lower canine

Retained teeth:

- **Upper canine**

Unerupted teeth - etiology

- Lack of tendency for eruption
- Eruption is obstructed by:
 - Neighbouring teeth, persistent deciduous tooth
 - Supernumeral teeth, odontoma
 - Hyperdense bone
 - Cicatricose soft tissues
- **Long way of eruption**
- General disorder combined with eruptional problems (e.g. hypothyreosis)
- ?

Unerupted teeth - etiology

- Length of dental arch - size of teeth—
dysharmony
 - Wisdom teeth – last in the order (topographical & chronological)
 - Upper canine – mesial & distal neighbouring teeth erupt earlier
 - 2nd or 1st premolar – the 1st molar can narrow its space

Indications of the treatment or the removal

- | | | |
|---|---|-----------------------|
| 1. Periodontal infection | } | on neighbouring tooth |
| 2. Caries | | |
| 3. Resorption | | |
| 4. Pericoronal infection (chronic or progressive) | | |
| 5. Pericoronal pathological process (follicular cyst , odontogenic tumours) | | |
| 6. Prosthetic indication | | |
| 7. Orthodontic disorders, help for orthodontic treatment | | |
| 1. Facial pain (unknown origin) | | |
| 2. Dental focus | | |
| 3. Trauma | | |



Unerrupted teeth – treatment plan

1. Diagnostics
2. Decision
3. Operative plan
4. Postoperative therapy
5. Treatment plan in the future

Unerrupted teeth – Warning signs:

- Absence of the concerned tooth, persisting deciduous tooth –
- Positional disorders of teeth, mobility of neighbouring teeth
- The shape of the alveolar process, rounded gingiva
- Infection of soft tissues, sinus tract, abscess

Diagnostics

- The developmental state of **tooth**, morphology, topography (neighbouring teeth & anatomical structures),
- Cariologic & orthodontic state of the set of teeth

Unerupted teeth - diagnostics

Radiological examinations:

Intraoral radiographs

- Coronal or periapical - orthoradial, **excentric**
- Occlusal (bite-on)

Extraoral radiographs

- OPTG
- PA, lateral direction

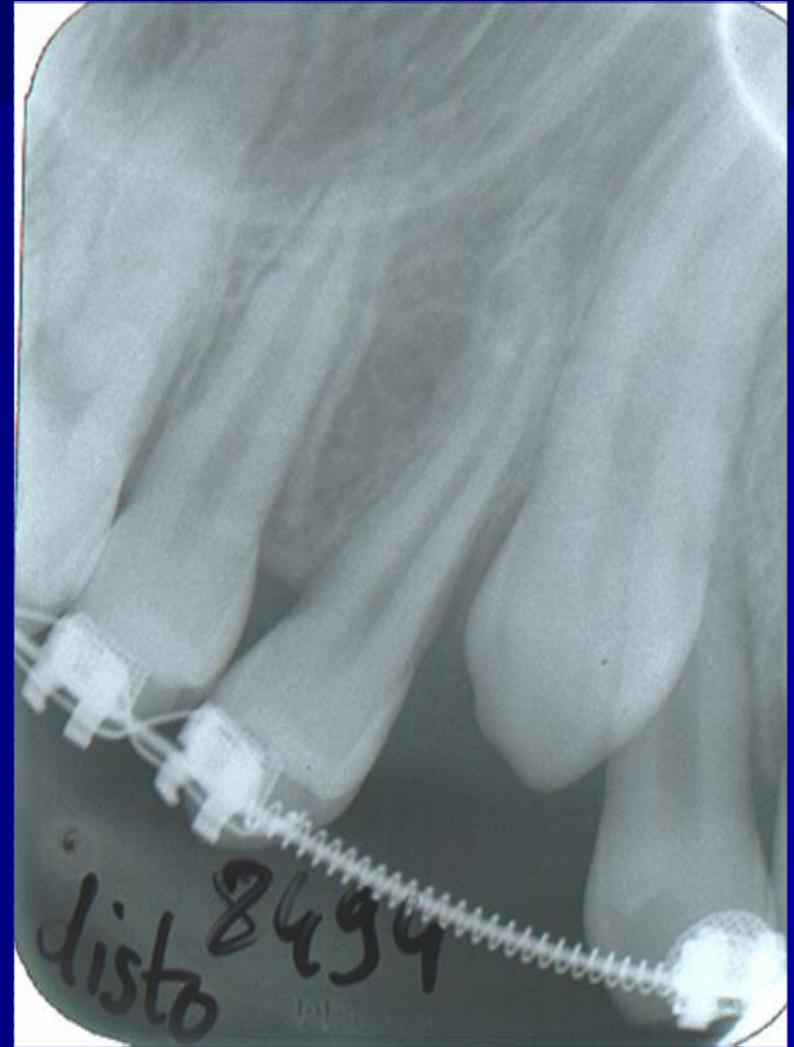
CT, CBCT – 3D imaging of jaws

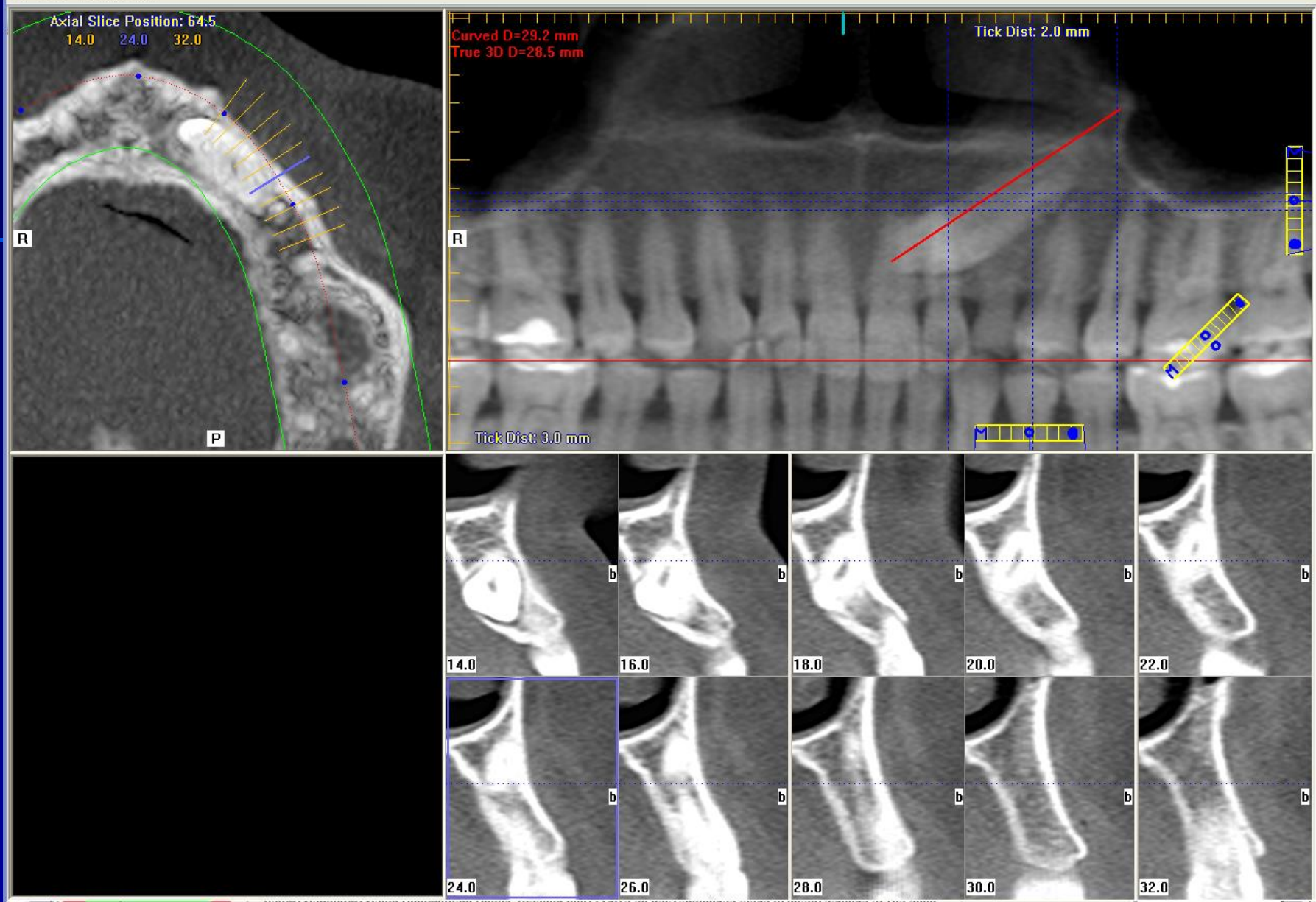
Upper canines

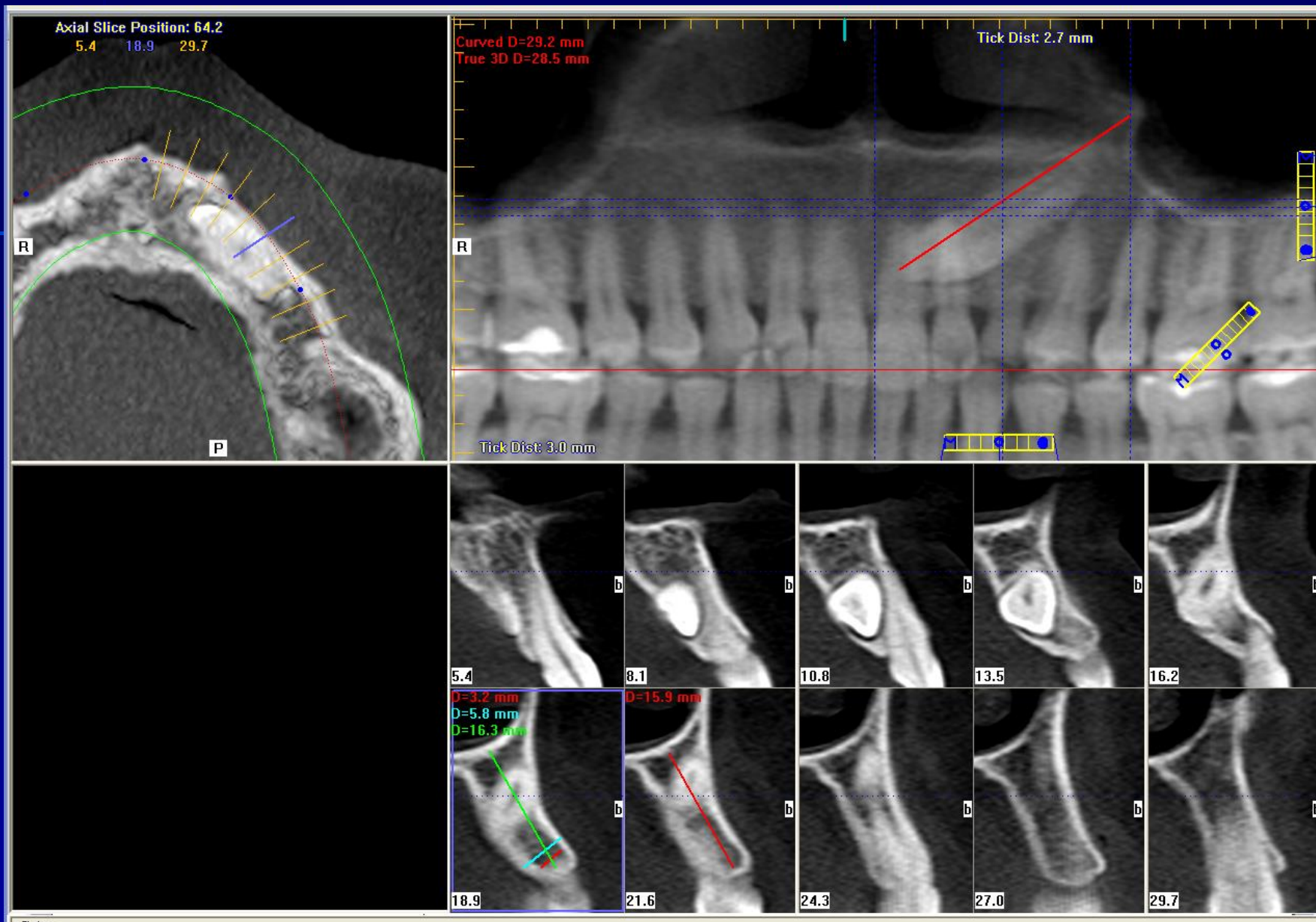
Localisation

- Intraoral picture (including excentric direction)
- Occlusal image
- Panoramic pictures (OP)
- palatal-85%, buccal-15%

Excentric radiographs: The relative movement of the palatal located objects is similar to the X-ray source







Unerrupted teeth – treatment plan

- Individually, but usually **the treatment is indicated**, according the indications, contraindications
- Early decision, before complications
- Written administration, information and consent of patient

Treatment plan

- Aim: First of all **preserve** the tooth, ensure the function
 - Important tooth – esthetically & functionally
- Removal of the tooth
 - Contaction of lateral incisor & 1st premolar
 - No real chance for placing in the order
- Neglection of the treatment
 - Contraindication
 - Lack of collaboration, reject of treatment

Unerupted teeth – treatment plan - preserve or remove ?

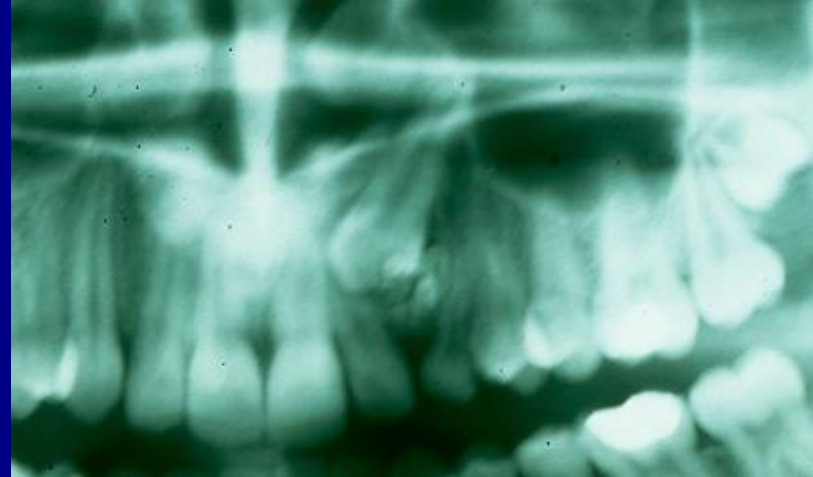
- According to the developmental state of **tooth**, morphology, topography (neighbouring teeth & anatomical structures), cariologic & orthodontic state of the set of teeth
- Age of **patient**, readiness for collaboration (oral hygiene, acceptance of orthodontic treatment, surgical interventions, possible complication, chance of failure)

Treatment

1. Orthodontic
2. Surgical - orthodontic
3. Surgical - removal
4. Surgical - transplantation

Important features for successful treatment

- Site of the tooth
 - **Palatal or buccal position?**
 - **Pericoronal space?**
- Direction of the tooth
- Shape of the root
- Position of neighbouring teeth
 - **Distance to neighbouring teeth?**
- Obstacles of eruption
- Age, bone density



Treatment

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Orthodontic treatment

- If there is chance for spontaneous eruption,
combined with permanent or deciduous tooth extraction if needed

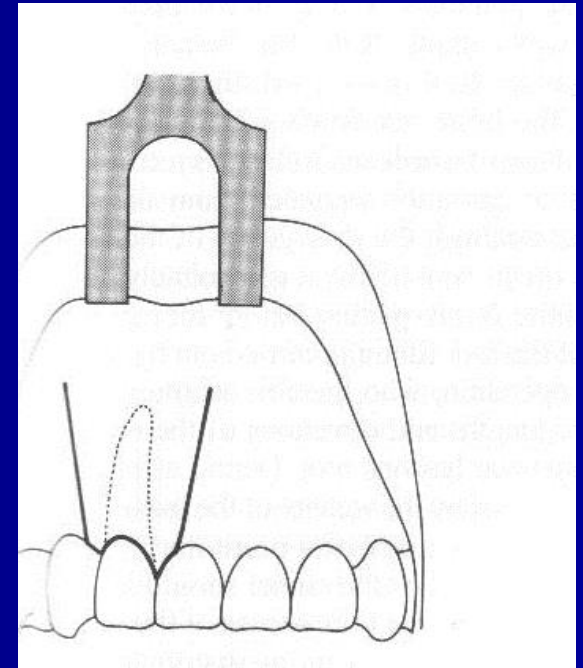
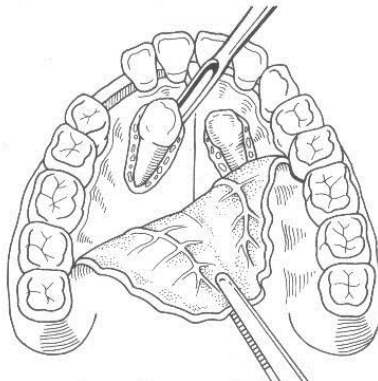
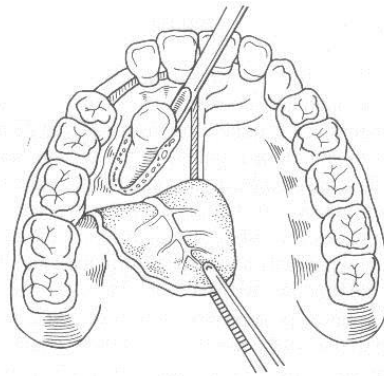
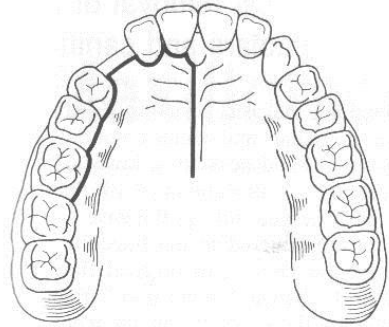
Surgical-orthodontic treatment

- 1. Make space by extraction or**
- 2. Remove the obstacle**
- 3. Surgical approach of crown, bracket bonding (combined by corticotomy)**

INTRAORAL FLAPS

PALATAL-PICHLER

Buccal-Wassmund

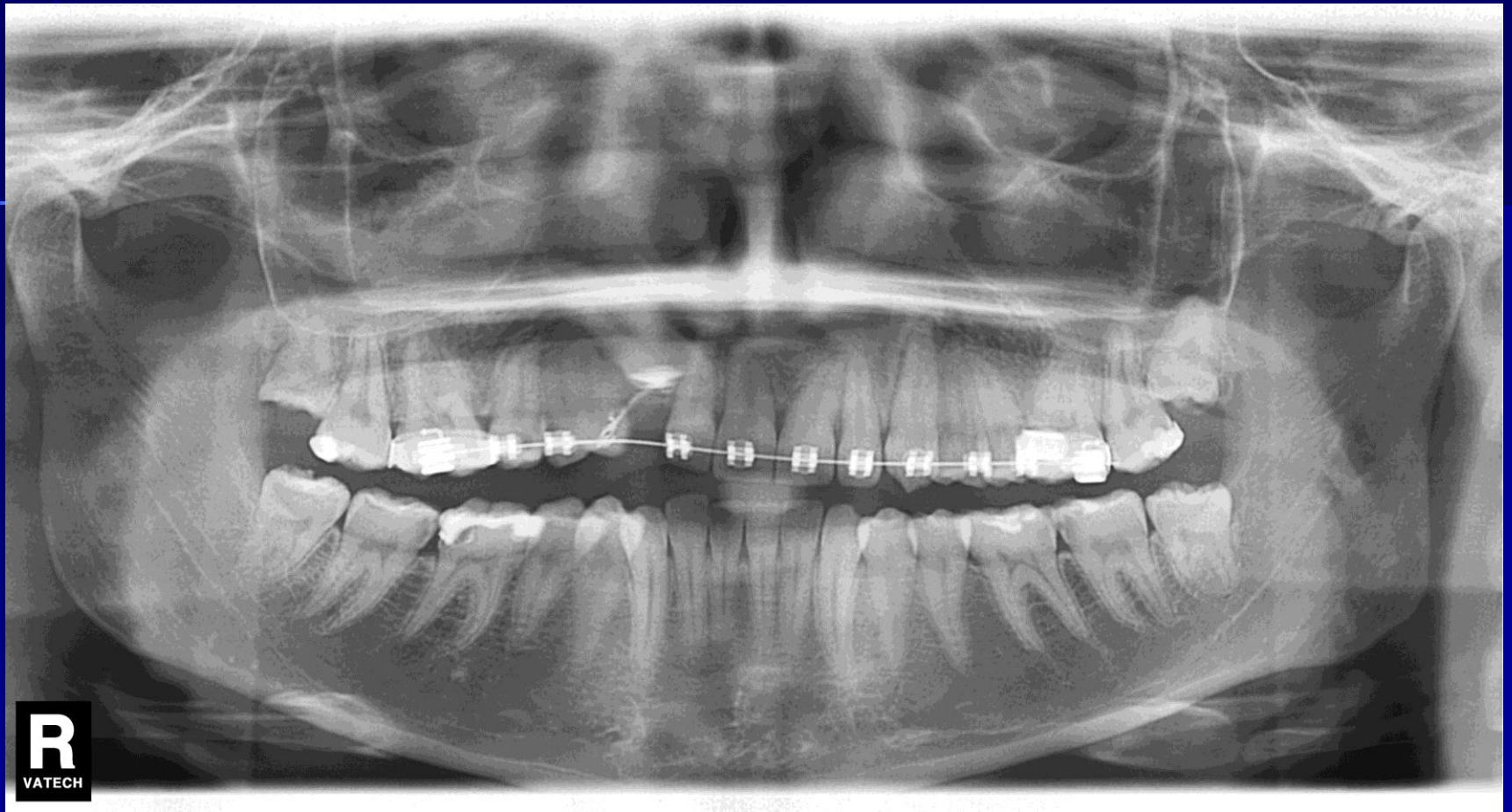


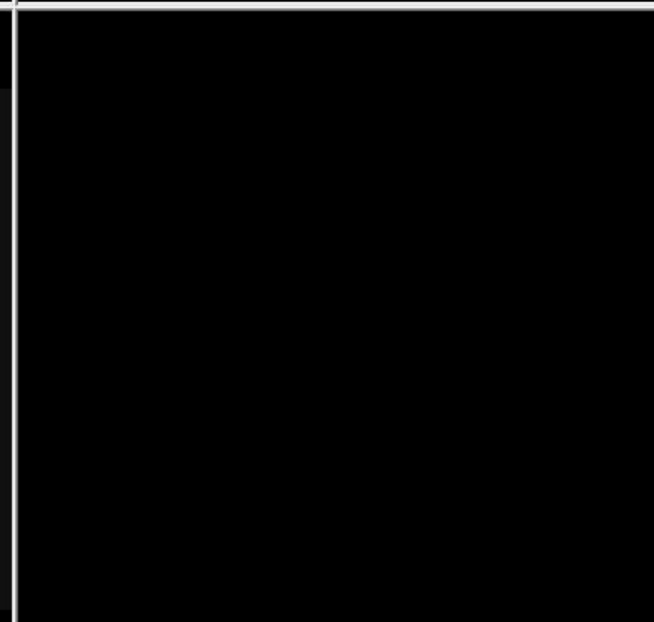
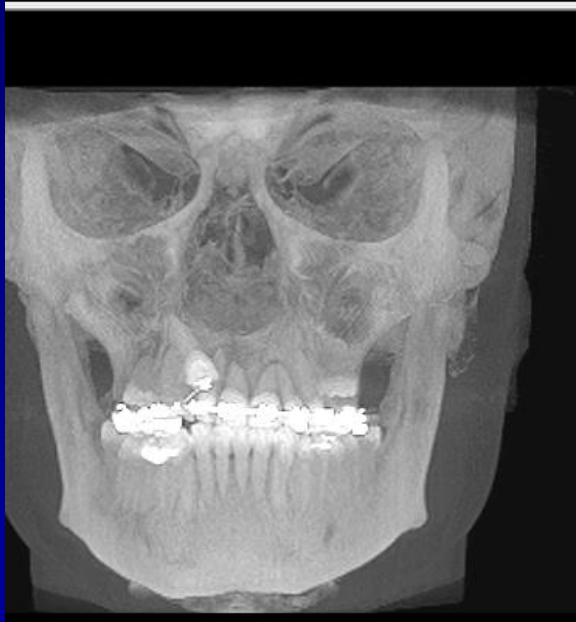
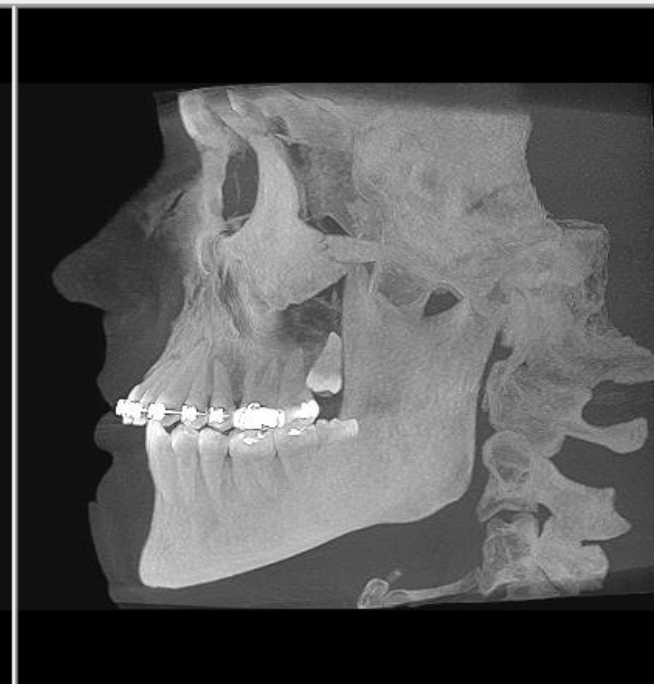
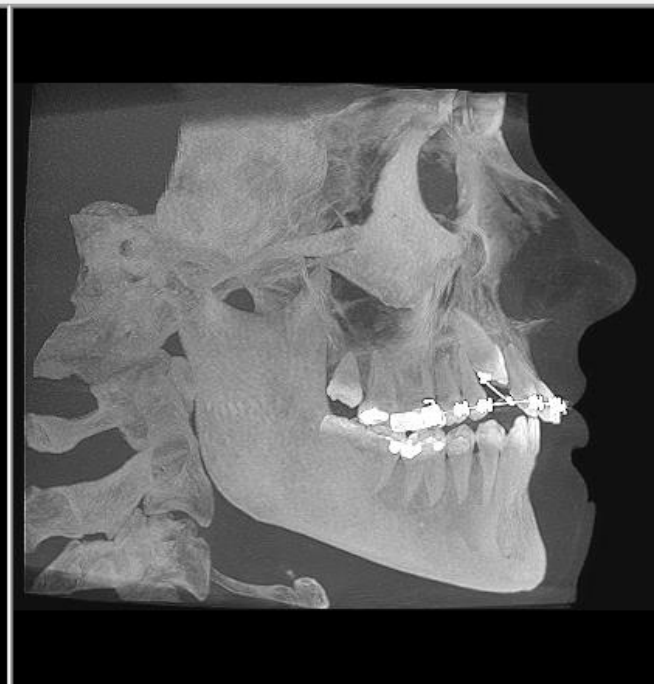
INTRAORAL FLAPS

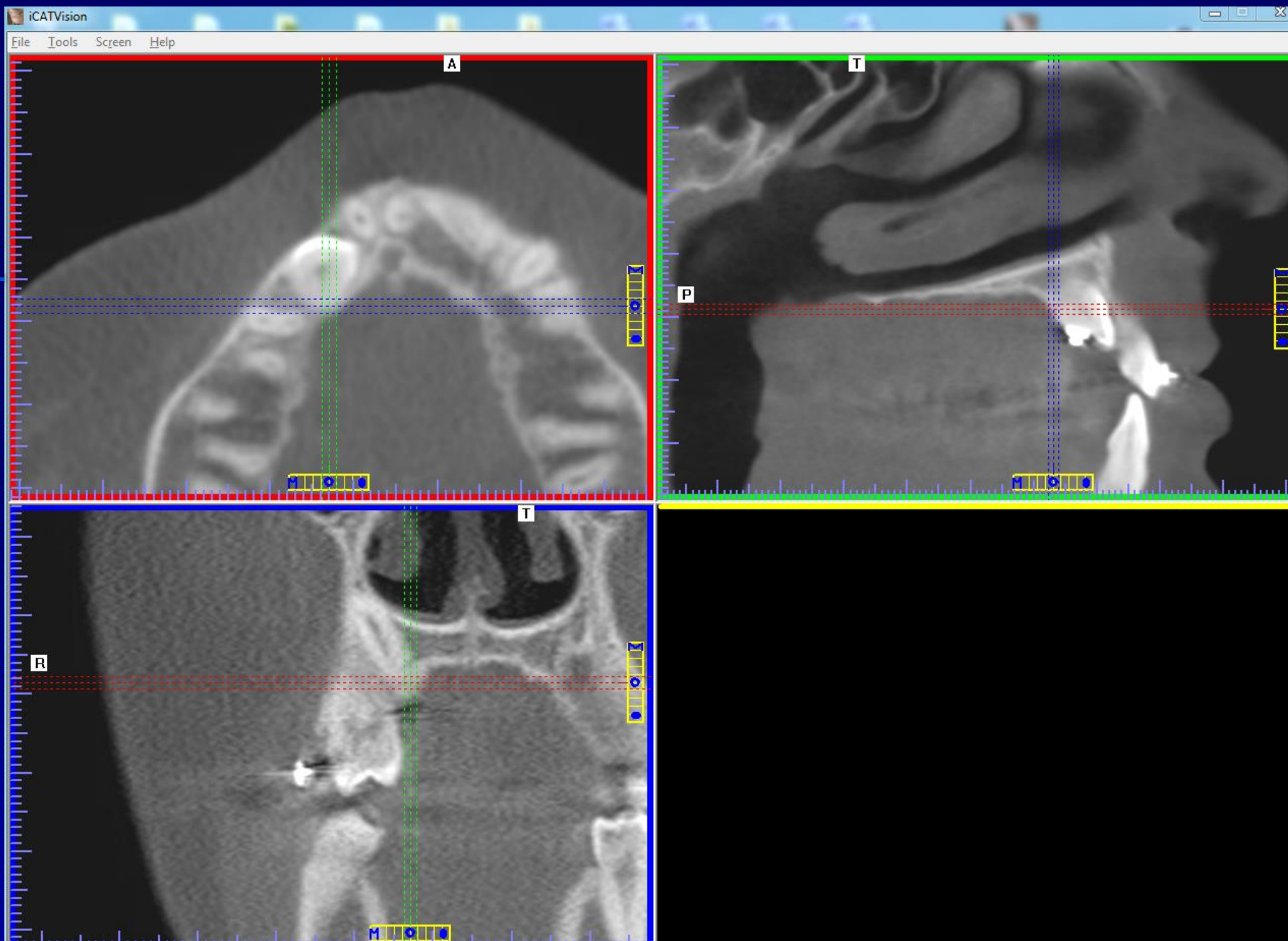
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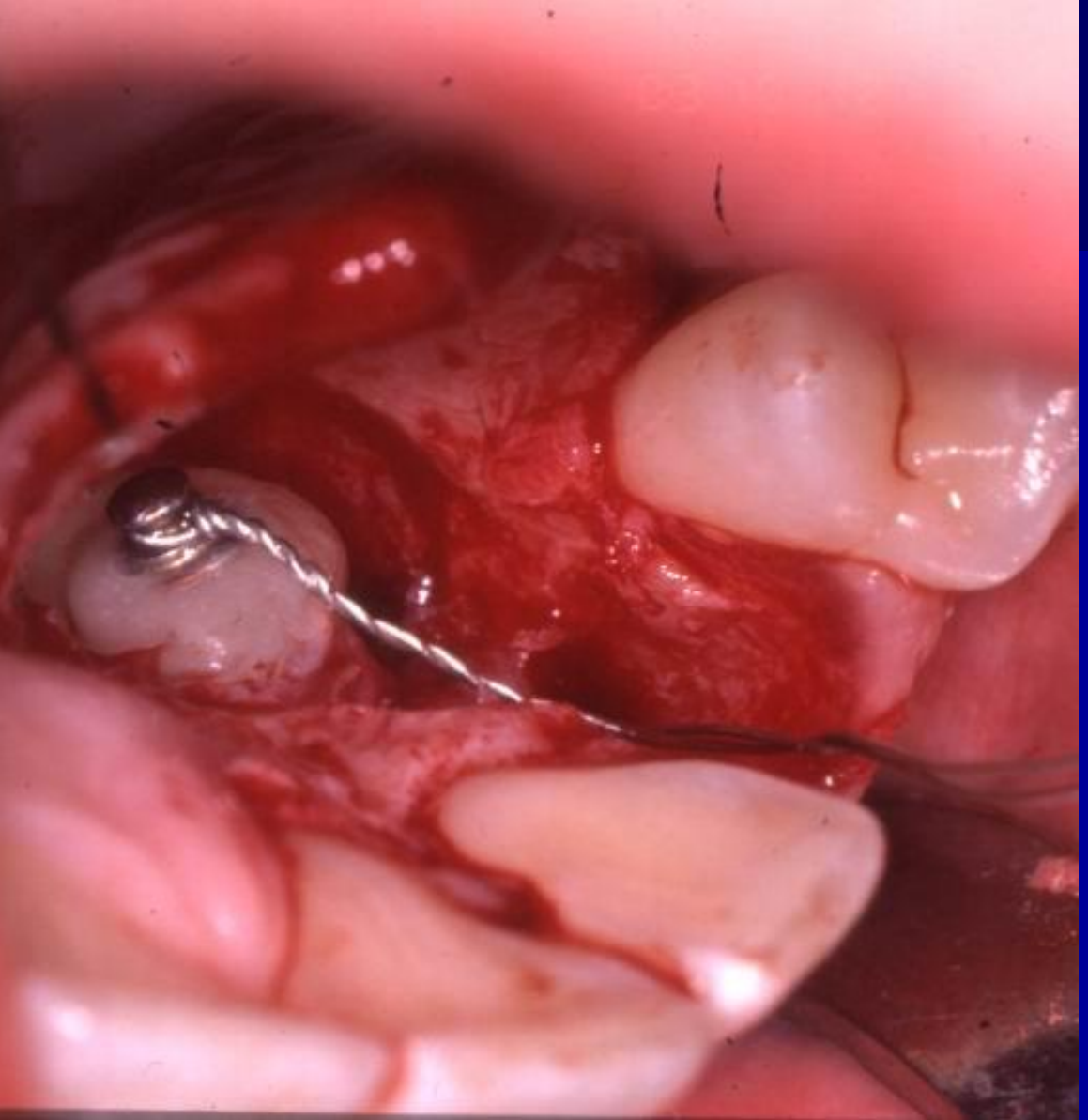
Buccal-Wassmund











Treatment

1. Orthodontic
2. Surgical - orthodontic
3. Surgical - removal
4. Surgical - transplantation

Surgical removal

- 1. Incision, flap preparation**
- 2. Removal of bone**
- 3. Removal of tooth**
- 4. Closure of wound**

Treatment

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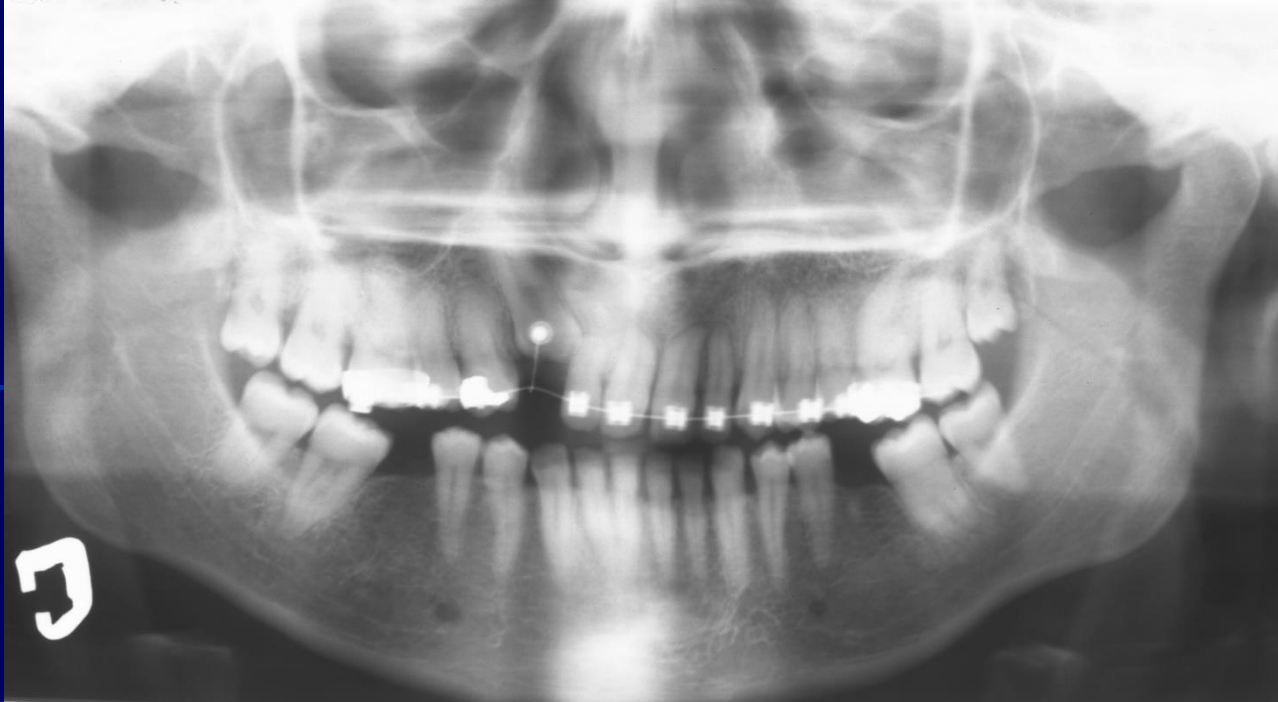
Surgical - transplantation

- In case of missed conditions for surgical-orthodontic treatment or after unsuccessful surgical-orthodontic treatment
- Less experience about success rate

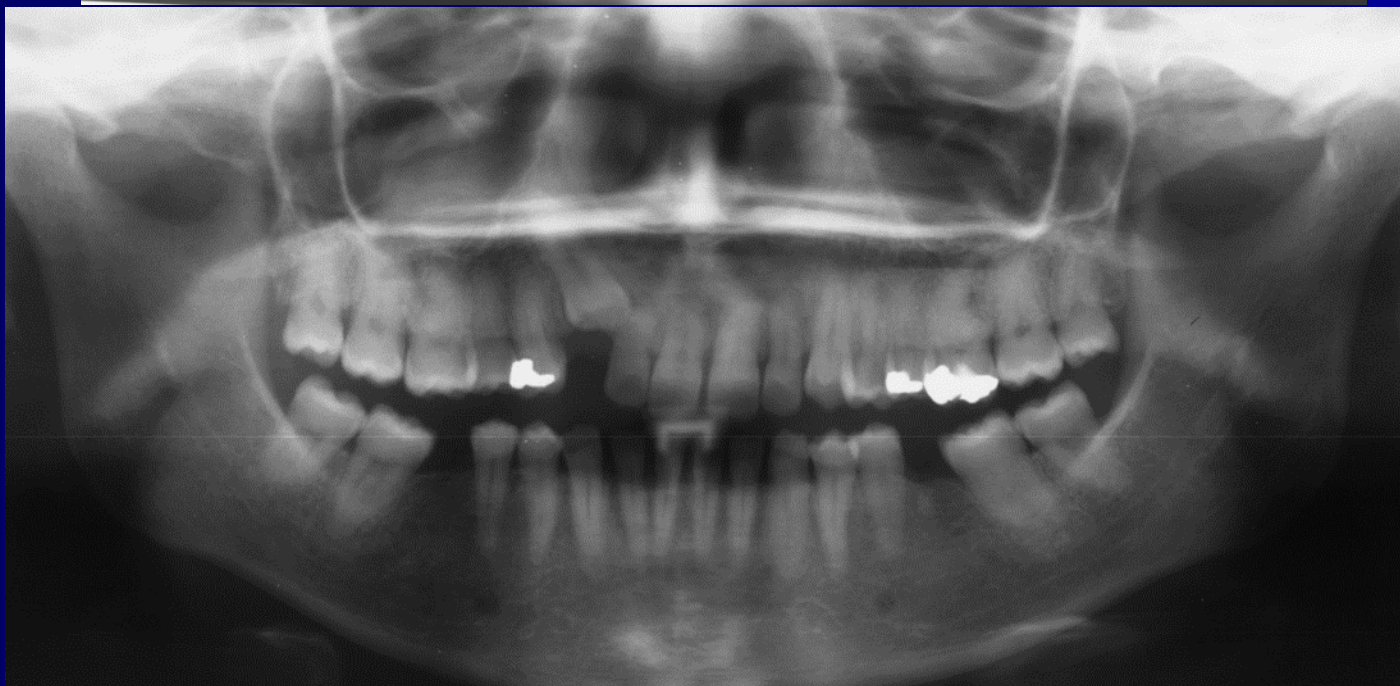
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1996



1997



2005



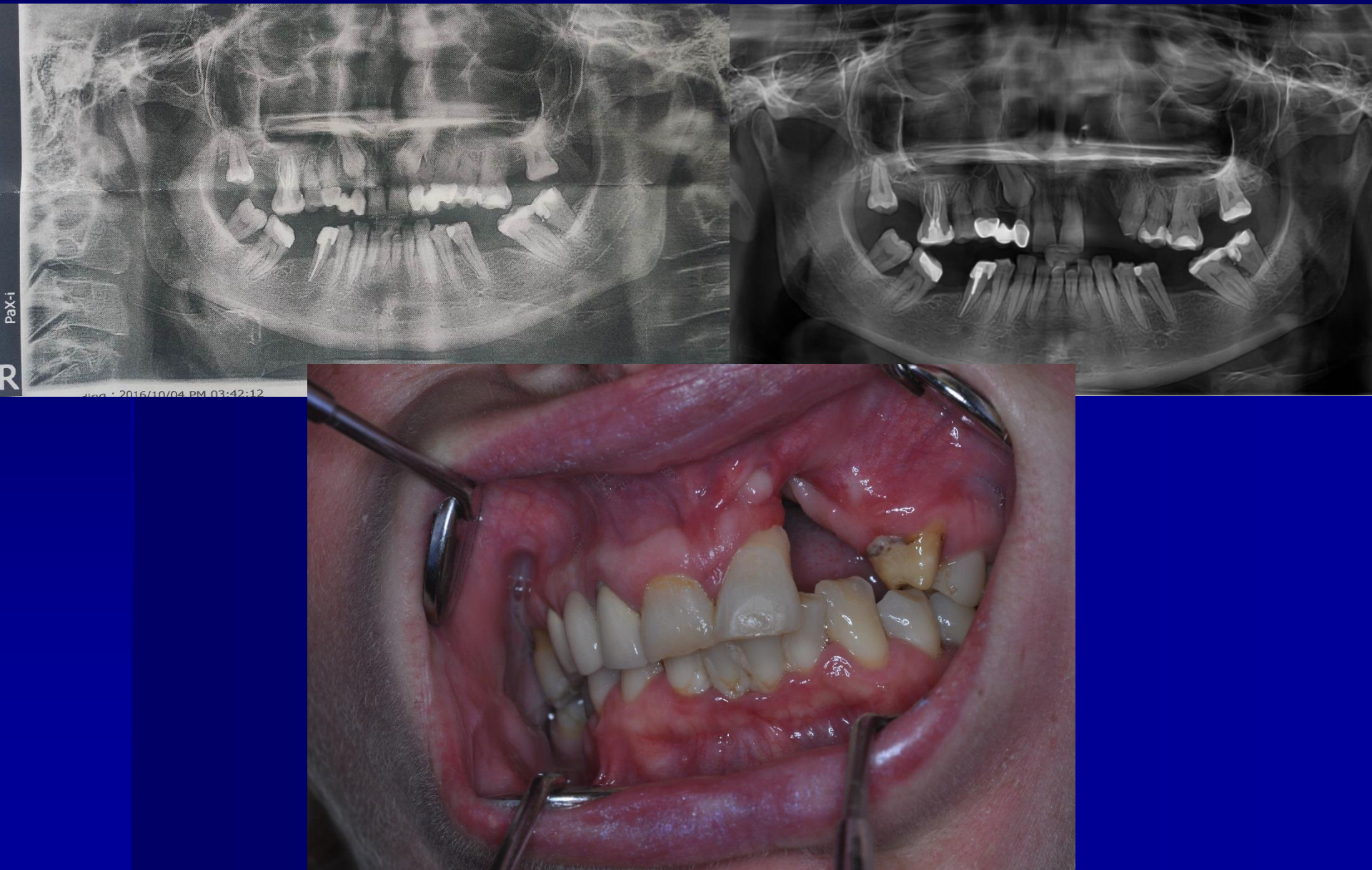
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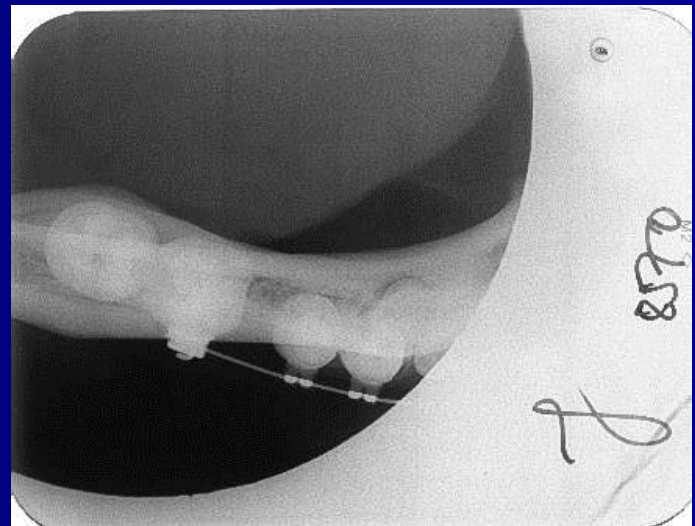
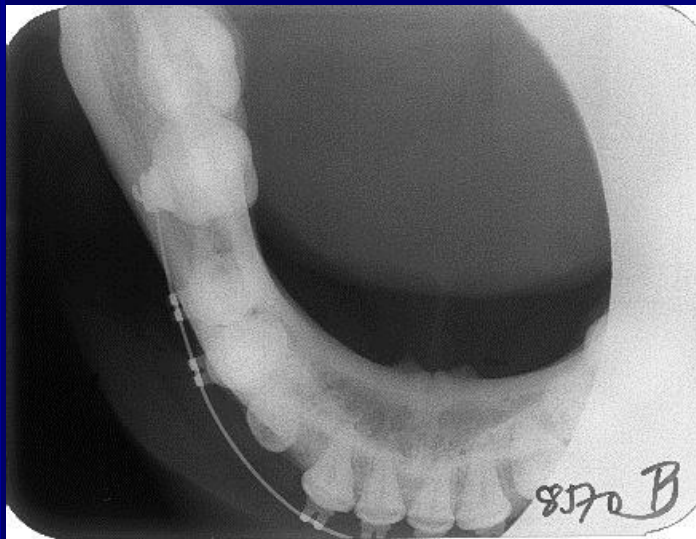
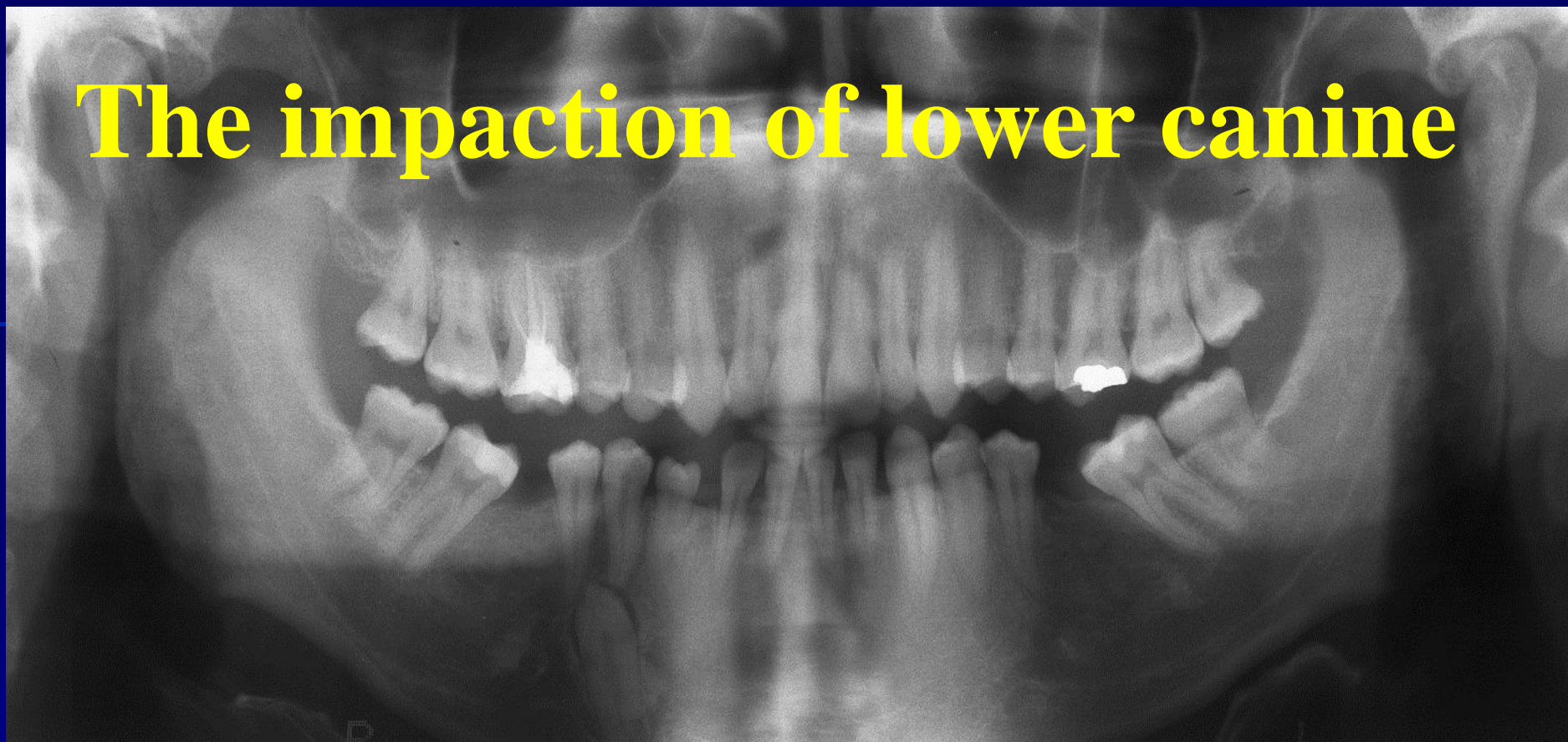
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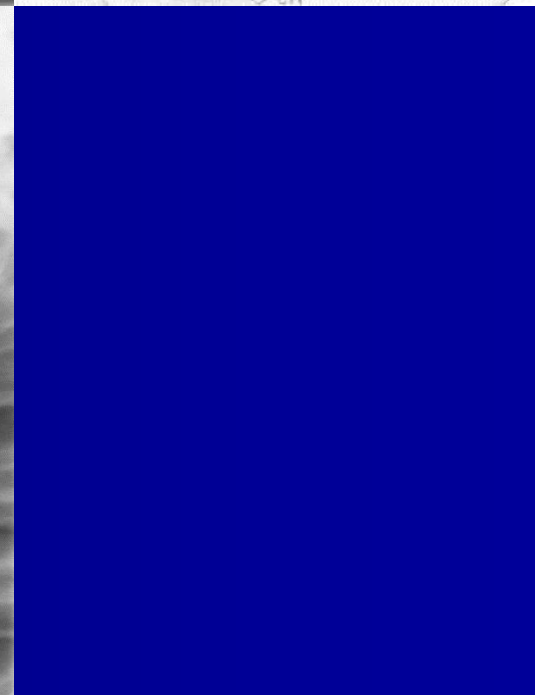
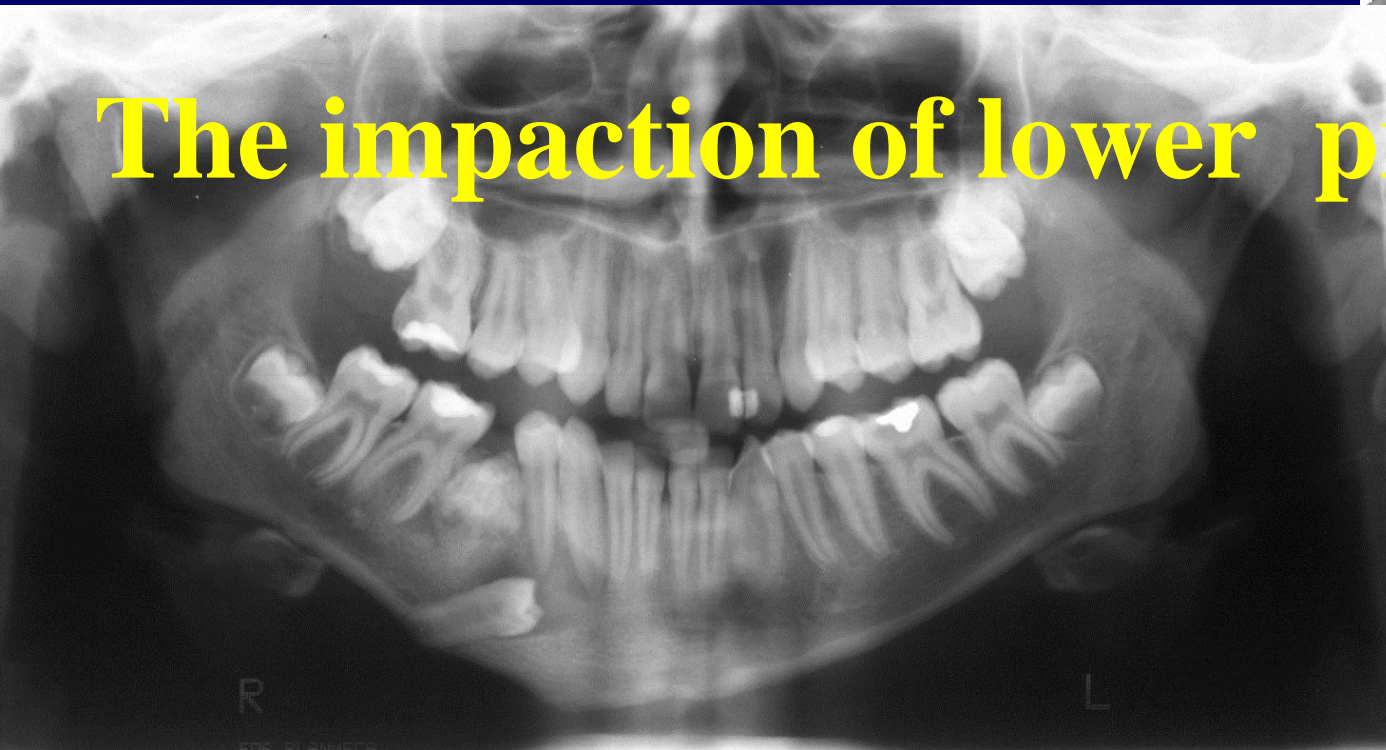
The complications of removal



The impaction of lower canine



The impaction of lower premolar



The impaction of upper front teeth

Mesiodens:

Atypical shape supernumerary tooth in the upper front region (between the mesial incisors)

