

Treatment of Oral & Maxillofacial Infection

1. General supportive measures
 2. Antibiotics
 3. Heat therapy
 4. Surgical treatment
5. Treatment of the cause
6. Treatment of complication





Purposes of Treatment

- Promote body resistance
- Destroy or inhibit the infection
- Localization of infection
- Elimination of infection and its cause
- Emergency measures to save life of the patient, when needed



Treatment Modalities

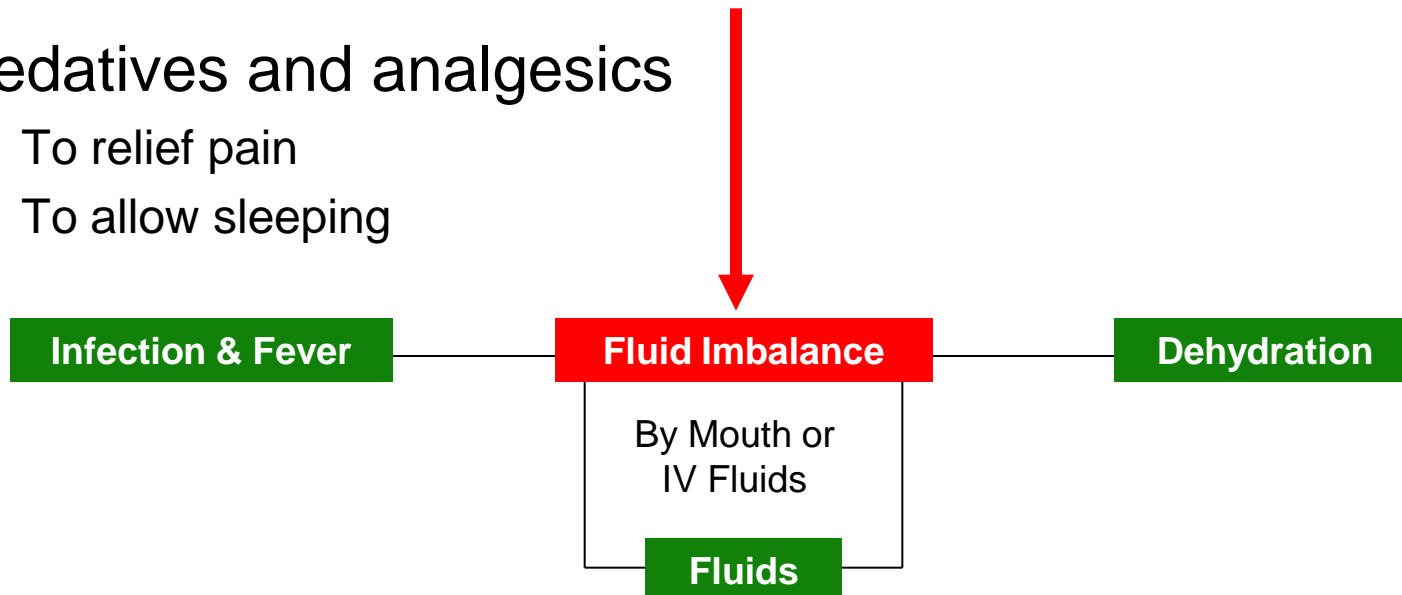
- General Supportive Measures
- Antibiotics
- Heat Therapy
- Surgical treatment (incision and drainage)
- Treatment of the cause
- Treatment of complication, if occurred

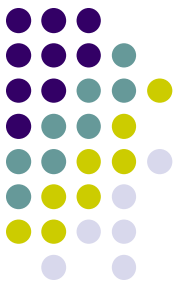


I. General Supportive Measures

(Helping the body to overcome infection)

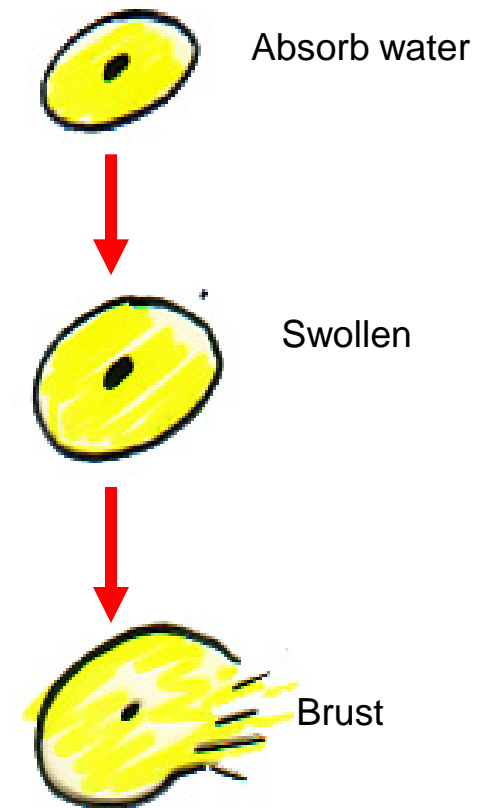
- Bed rest and hospitalization
- Adequate nutrition
 - High caloric and vitamins diet
 - Excessive fluids to compete dehydration
- Restoration of fluid balance
- Sedatives and analgesics
 - To relief pain
 - To allow sleeping

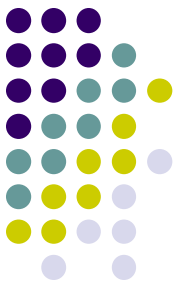




II. Administration of Antibiotics

- Types of antibiotics
 - Bacteriostatic
 - Inhibit bacterial growth
 - Bactericidal
 - Kill bacteria
- Action of antibiotics
 - Interfere with cell protein synthesis
 - Affect cell membrane
 - Escape of essential metabolites result in osmotic difference
 - Bacteria absorb water, swollen and finally burst





Dose All Cases Need Antibiotics

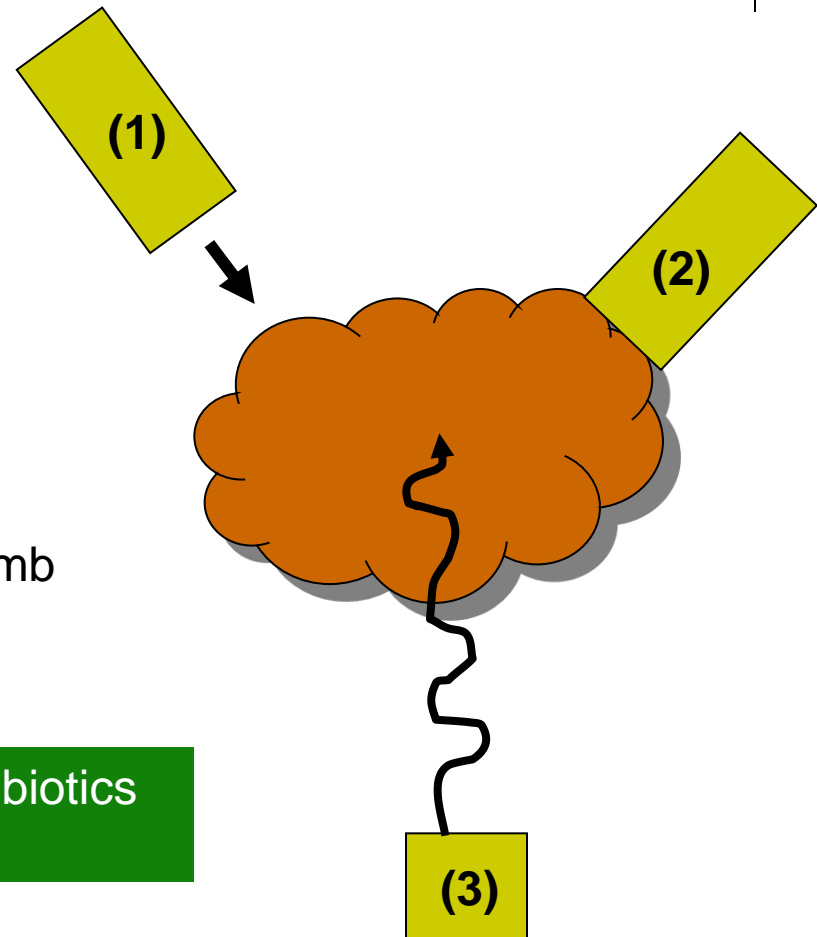
- Simple localized abscess
 - I&D is enough
 - No need for antibiotics
- Spreading type of infection
 - Administration of antibiotics will
 - Help localization
 - Affect resolution or pus formation
- Before Surgery
 - Antibiotics will guard against infection and prevent spreading
- If PUS is formed antibiotics will
 - Limits spread of infection
 - Relief pain and pyrexia
 - Decrease swelling
 - But **“PUS will never be eliminated”**
(Antibiotic Abscess)





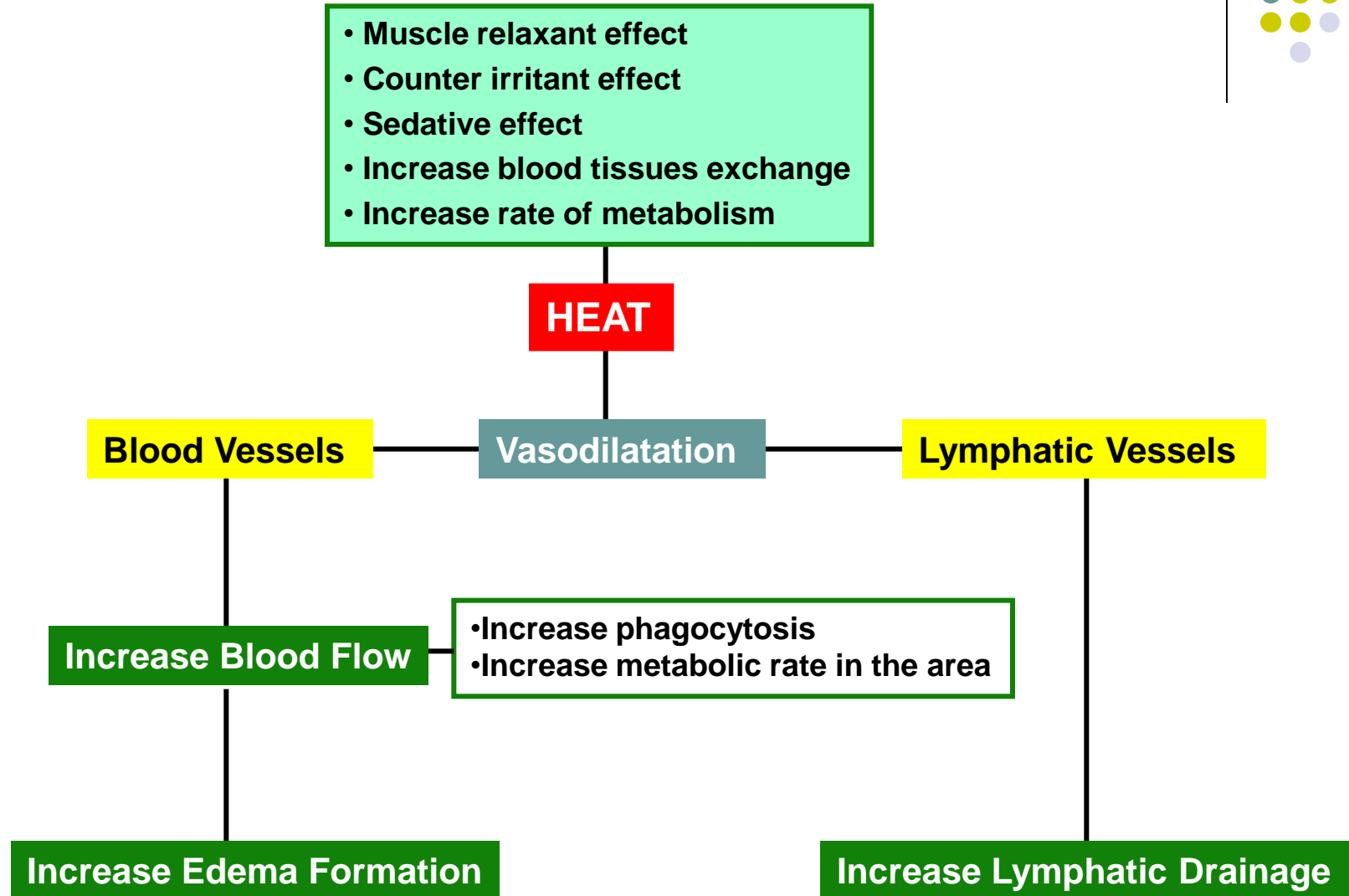
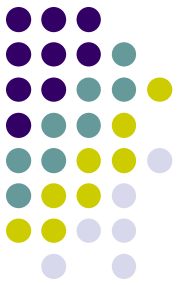
III. Heat Therapy

- Types
 - Conductive heat (1)
 - Mouth washes & Gargles
 - Bags, Bottles & Politics
 - Convective (2)
 - Water or Paraffin wax
 - Conversive heat (3)
 - Tungsten lamb & Carbon lamb



Remember that heat without antibiotics has very little or no effect

Effect of Heat



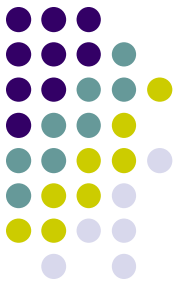
IV. Surgical Treatment (I&D)

(Surgical Evacuation of Pus)

- What is the OPTIMAL Time for I&D
 - No hard rule to follow
 - Too EARLY evacuation
 - Little pus
 - No harm
 - Late evacuation
 - More spread will occur
 - Spontaneous drainage may occur
- When in doubt
 - Do Aspiration
 - Be familiar with S&S of pus under deep fascia



**NEVER
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PUS**

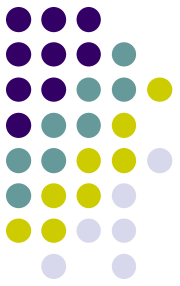


Signs of PUS under deep fascia

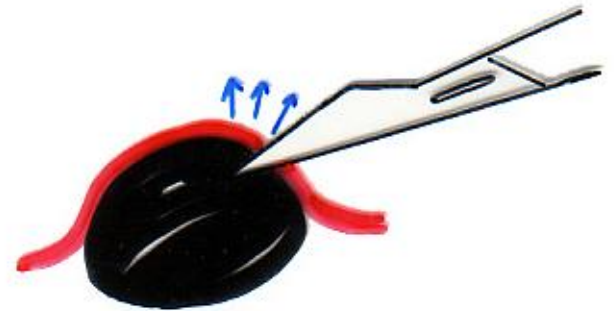
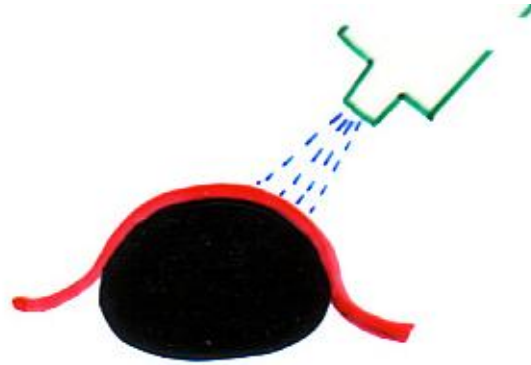
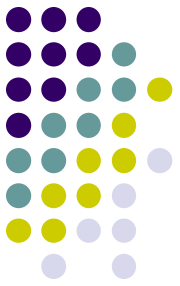
- Localized dusky redness in the general redness of the swelling
- Pitting edema
- Recurrent pyrexia or sudden raise in temperature
- Lack of improvement with adequate treatment

Surgical Evacuation of Pus

(Incision & Drainage – I&D)



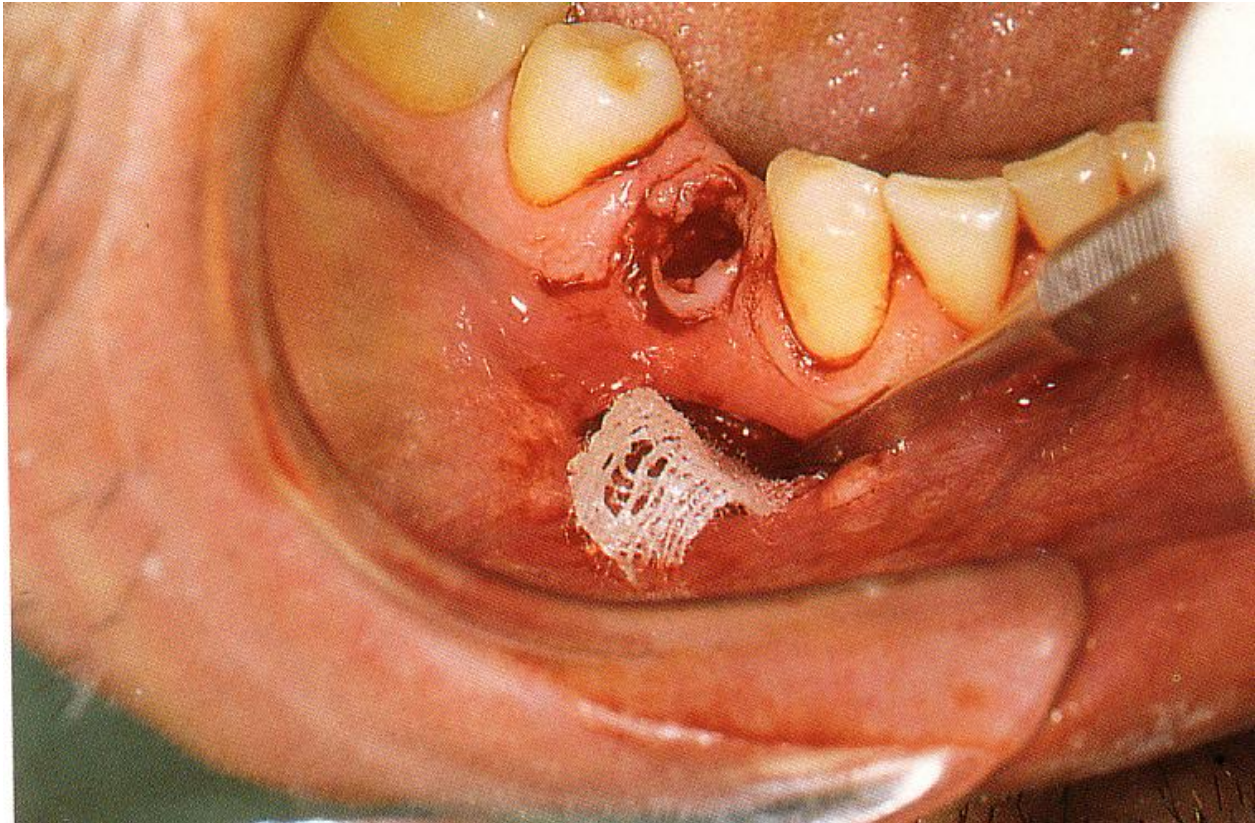
- Incision should be placed
 - Over area of maximum fluctuation
 - In an area that affect maximum drainage
 - Over the most direct route to pus
- Skin incision
 - Should be placed in one of the lines of skin creases (tension lines of the skin) or parallel to it
- Mucoperiosteal incision
 - Should be paced parallel to the alveolar bone in the palate and in the floor of the mouth
 - Should avoid injury to the mental nerve in the lower premolar region



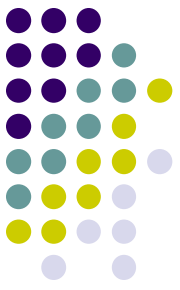


The Drain

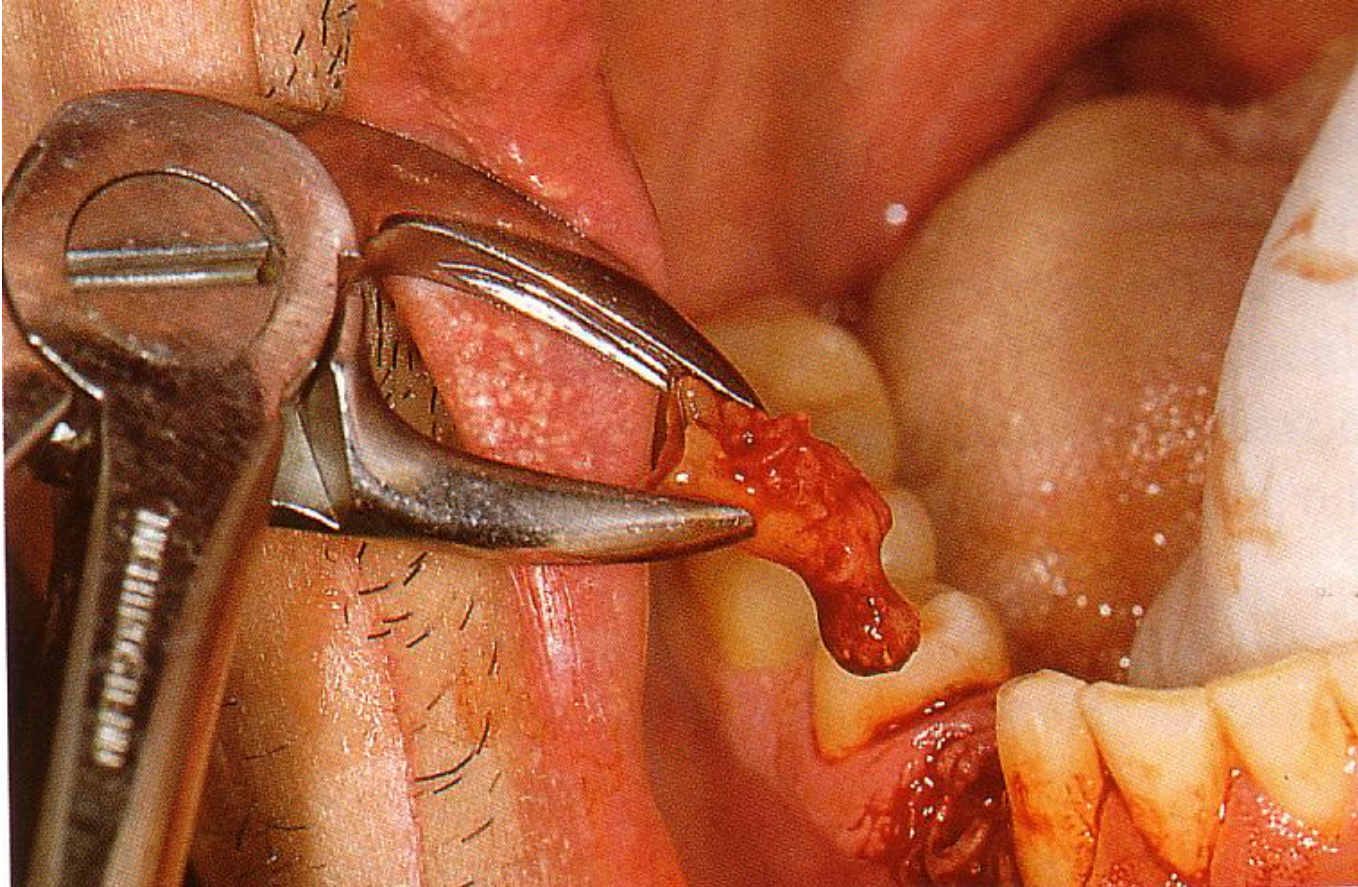
- Function of the drain
 - Keep the incision opened
 - Allow the escape of pus or inflammatory exudates from the lesion
 - After surgery
 - Remove serum, exudates and foreign materials
 - Prevent hematoma or seroma formation
 - Decrease the chance of postoperative infection
- Types of drains
 - Intra-oral drains
 - Gauze strips drain
 - Rubber dam strips drain
 - Extra-Oral drains
 - Gauze and rubber dame strips
 - Penrose drain
 - Rubber catheter



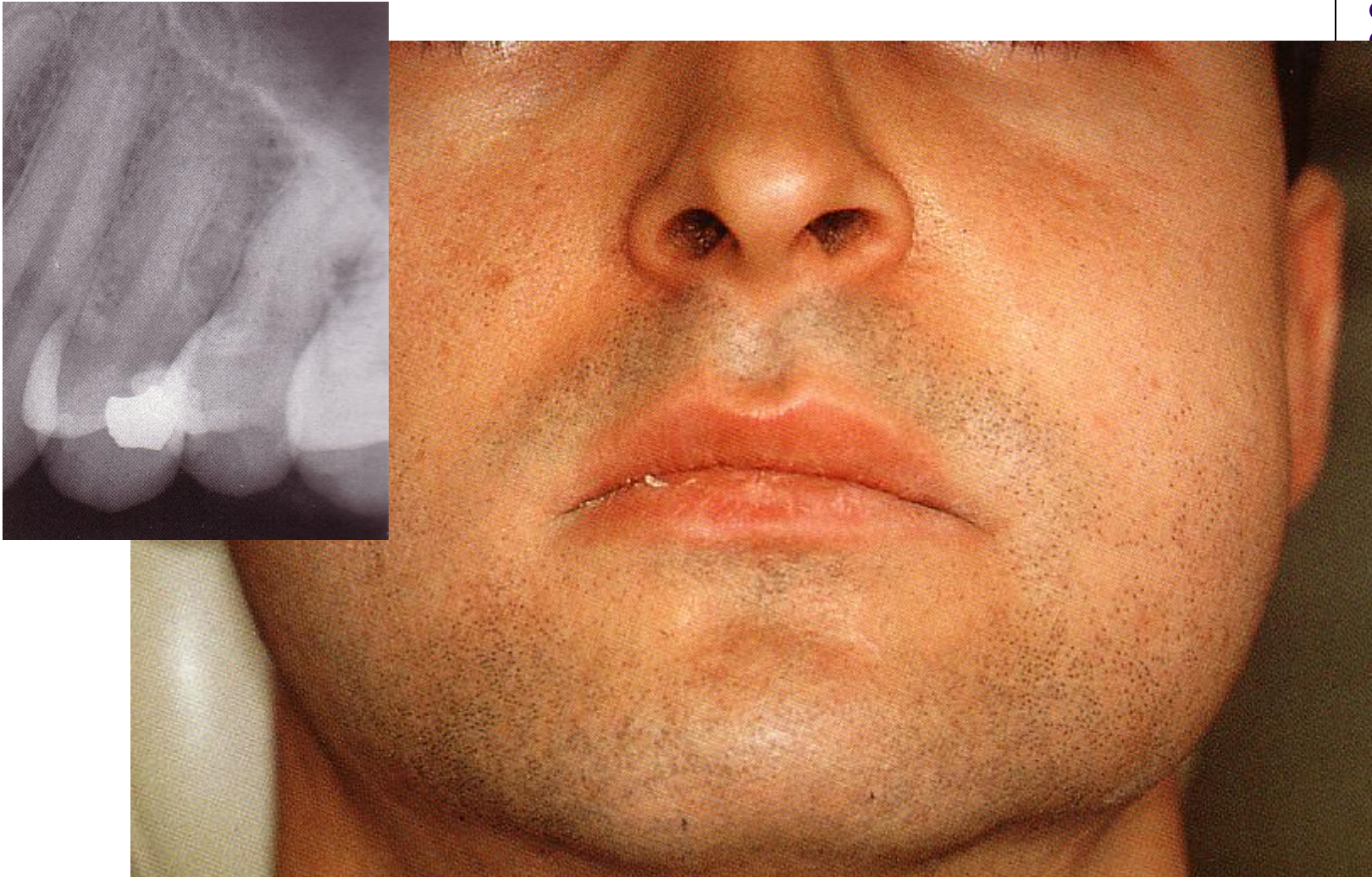
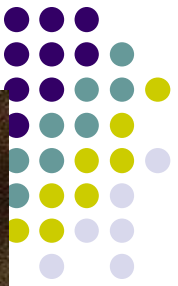
- Insertion of the drain
 - Applied loosely
 - Reach the deepest part of the abscess
 - Part of the drain should project from the incision
 - Changed every 24-48 hours
 - Remove when there is no drainage (non-productive)



V. Treatment of the Cause

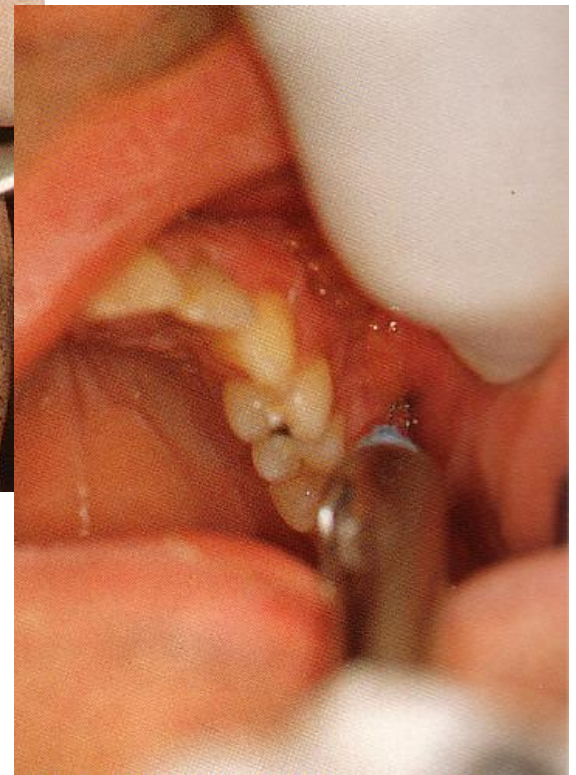
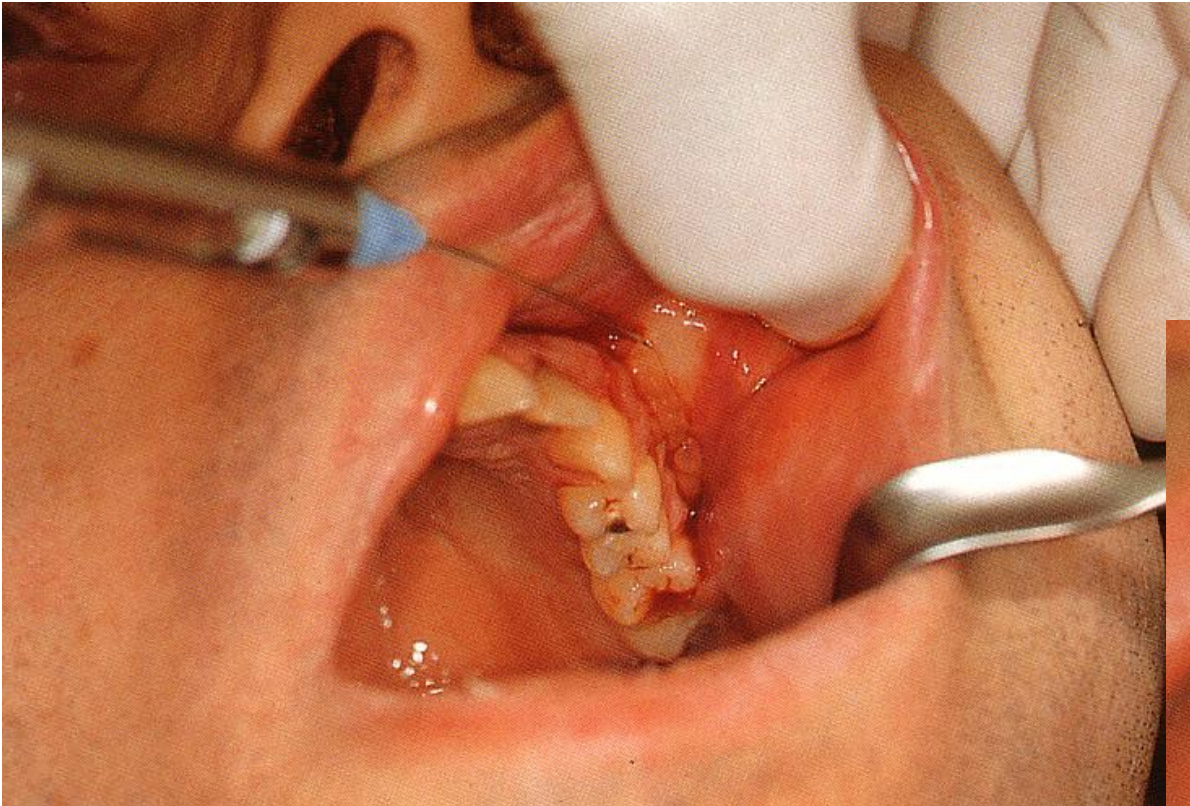
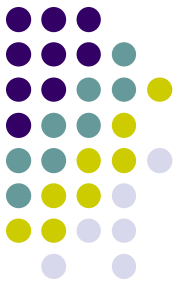


The causative tooth is either RCT or extracted

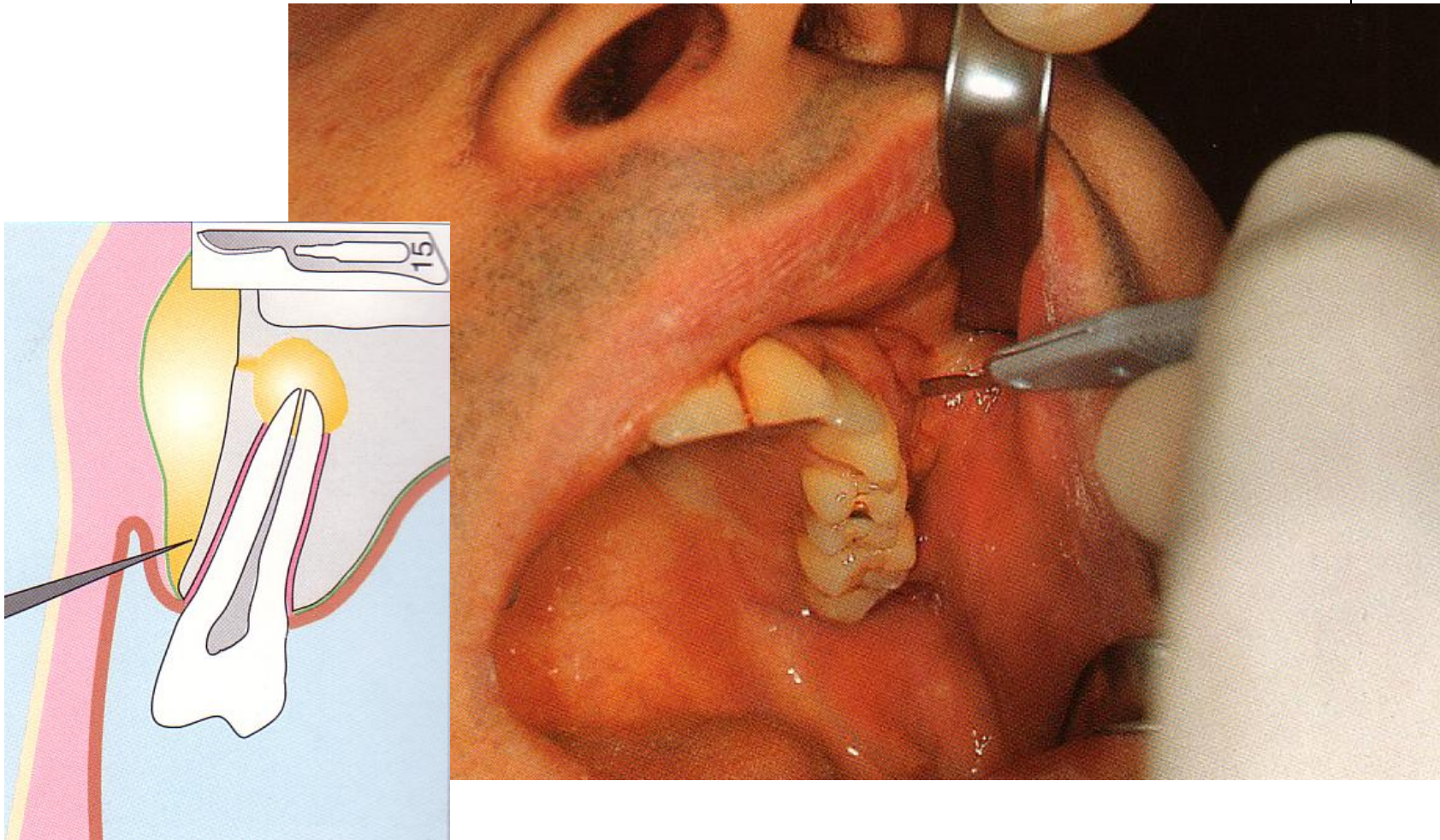


Vestibular abscess on the maxillary alveolar process

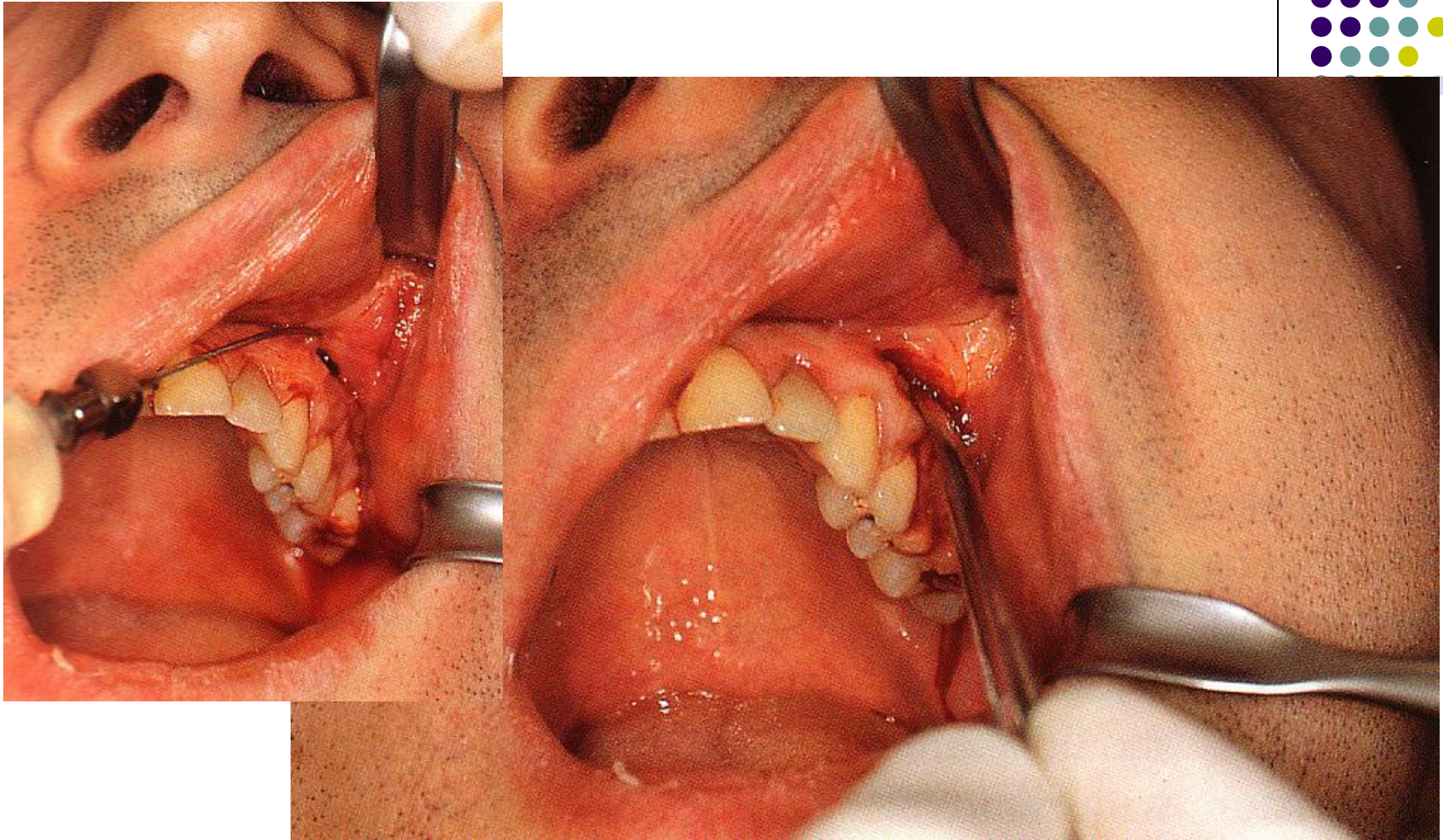
A 31-year-old man with increasing dental pain in the left maxilla. Pain initially was heat dependant but becomes continuous the previous night. This was accompanied by swelling in the left cheek. X-ray was negative at this stage



Infiltration anaesthesia is given within the mucosa only. Infiltration injection is given near the tuberosity beyond the extent of the abscess

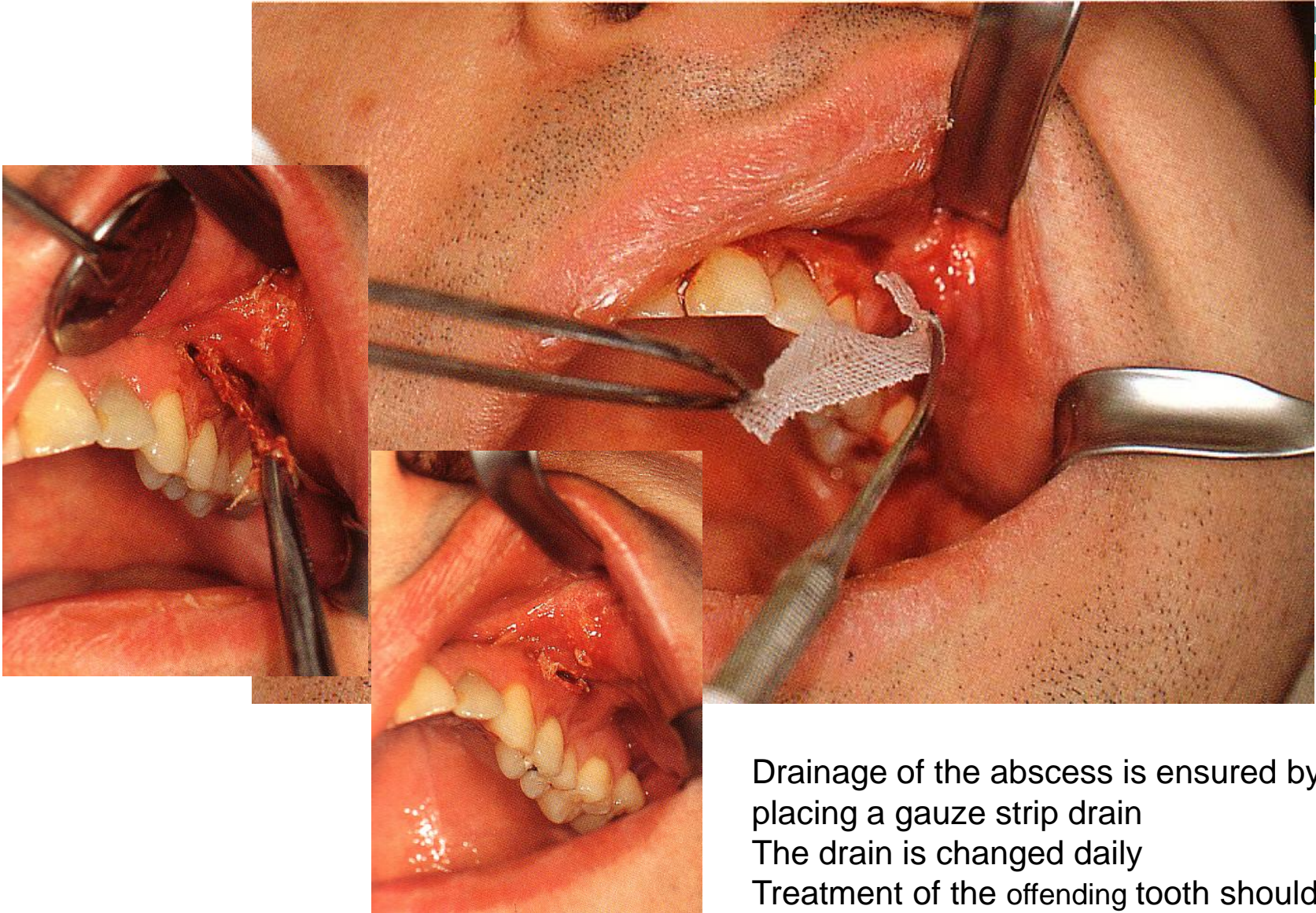


The blade is guided horizontally, perpendicular to the osseous surface approximately at the muco-gingival border. Diagram shows the correct orientation for the primary incision

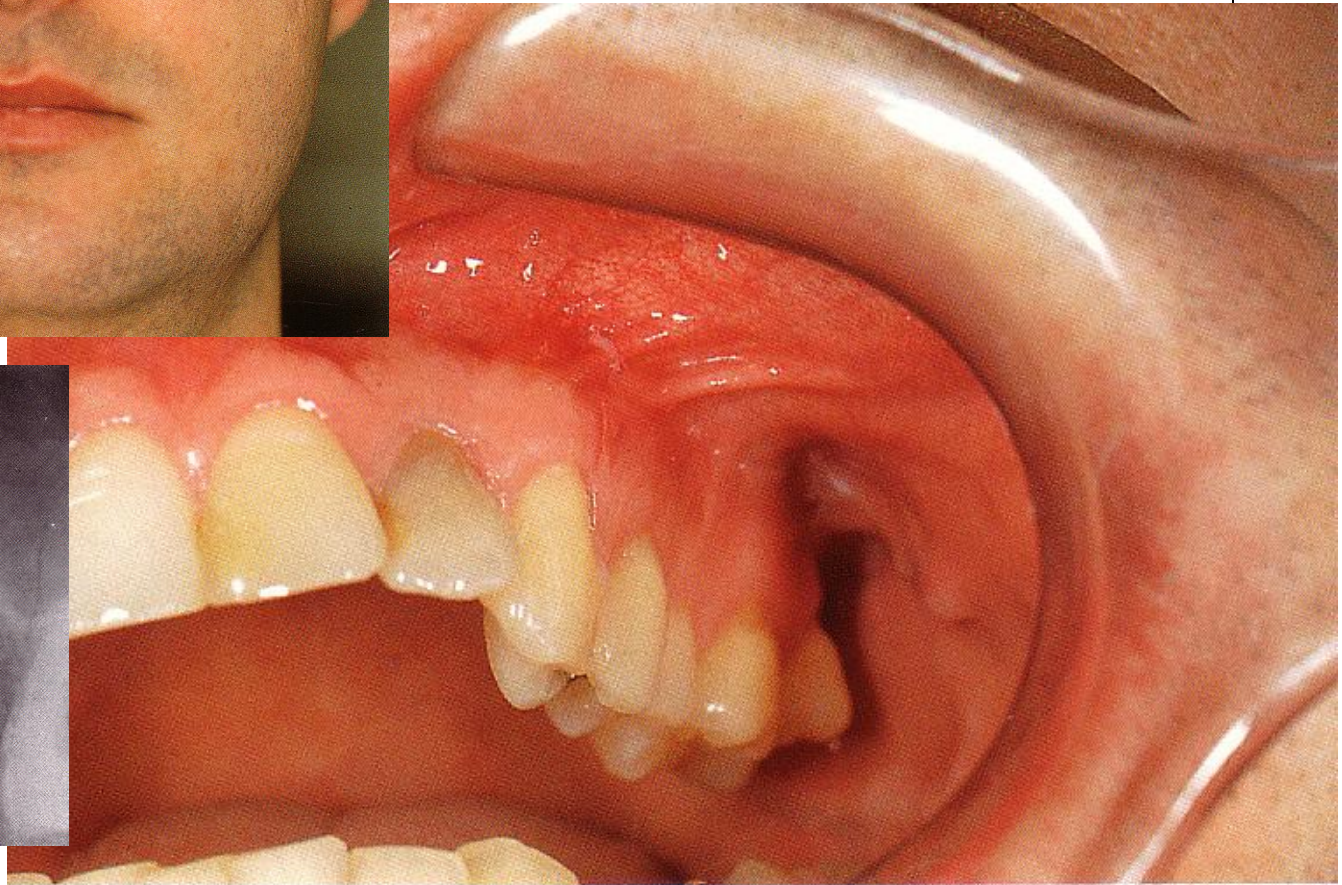
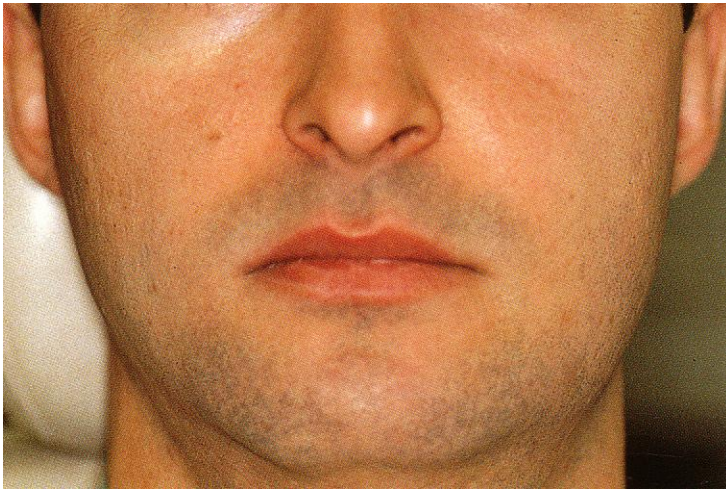


The entrance into the abscess cavity is widened using a periosteal elevator or a blunt hemostat, and the pus is pressed out.

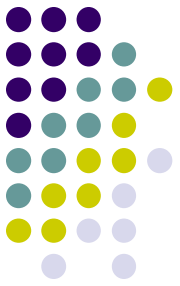
Rinsing the abscess cavity with normal saline or antibiotic solution may be useful



Drainage of the abscess is ensured by placing a gauze strip drain
The drain is changed daily
Treatment of the offending tooth should be started before the end of treatment of the abscess

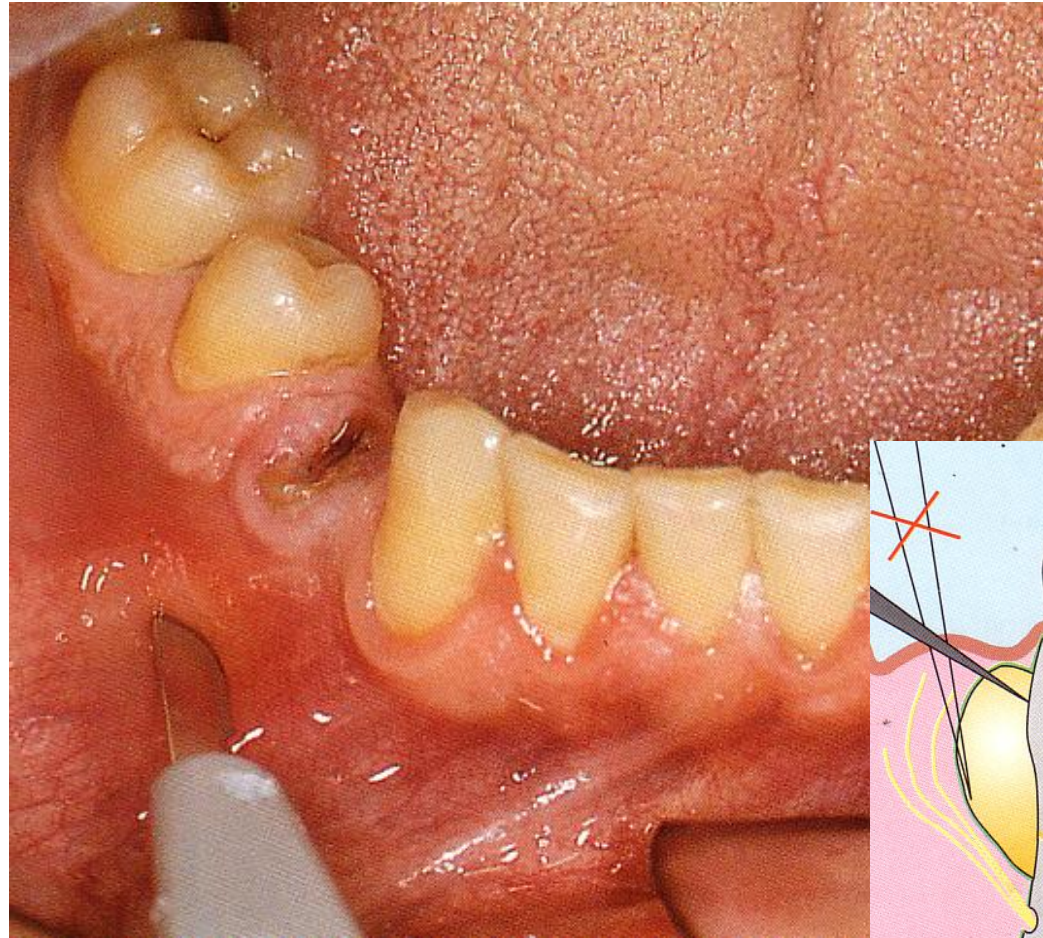
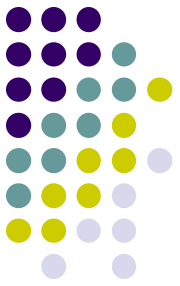


Treatment of the abscess was completed 14 days postoperatively
The radiograph shows successful root canal treatment of the offending tooth

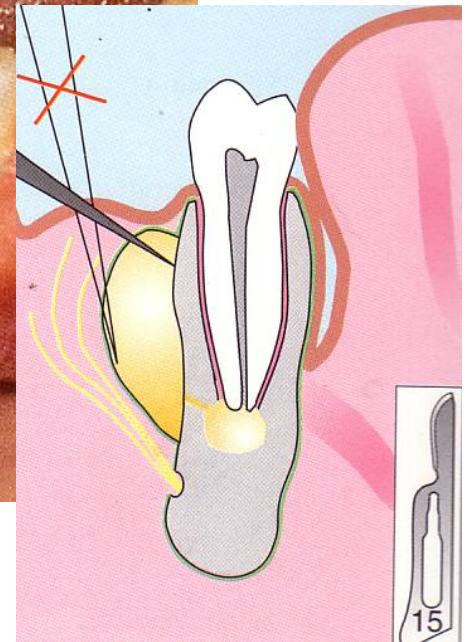


Mandibular Buccal Sub-periosteal Abscess

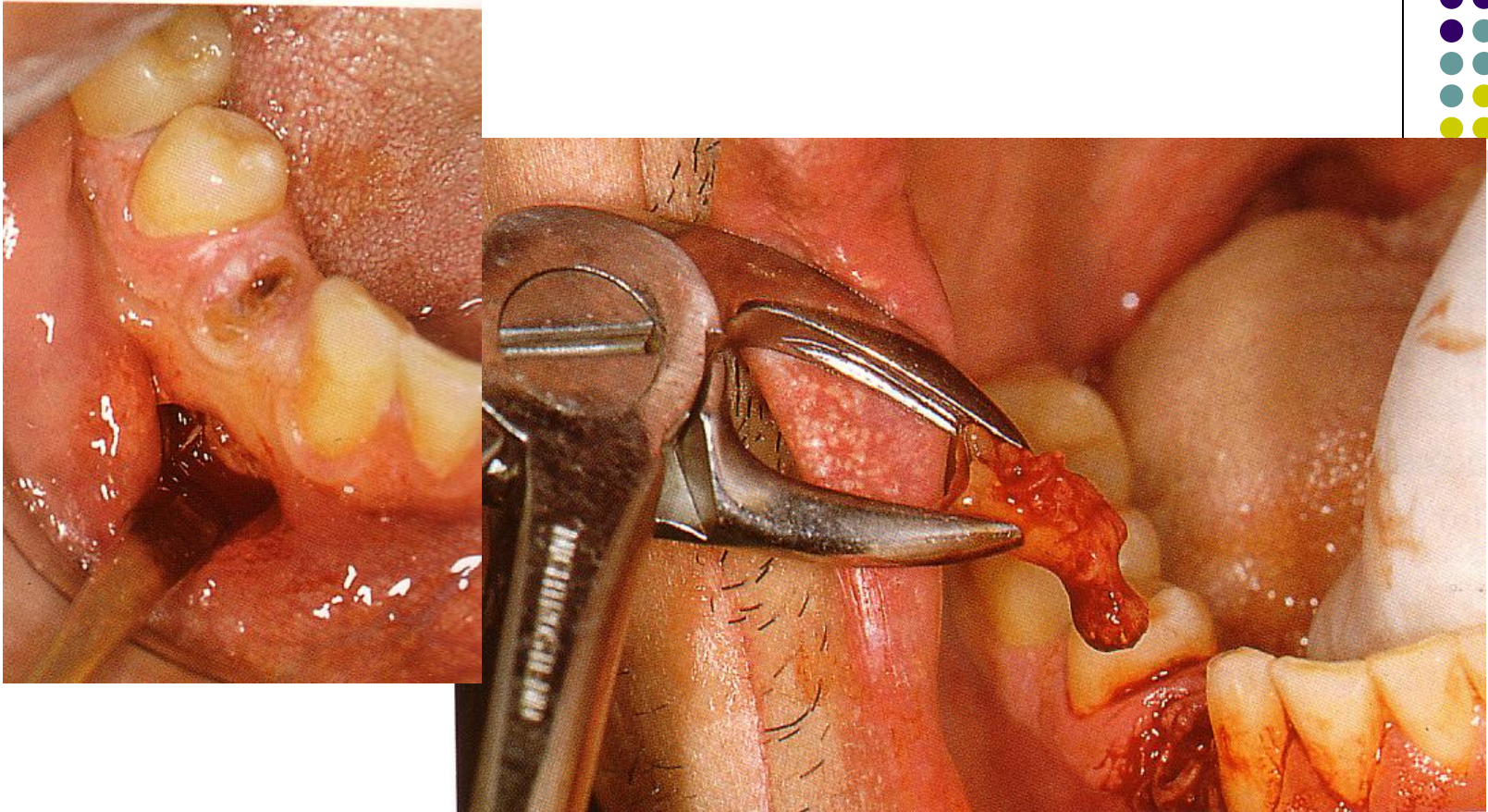
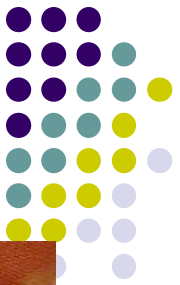
22-year-old girl suffering from pain in the lower right premolar region for several weeks. The pain subsided and swelling began to occur three days later on the right side of the mandible. X-ray shows an area of bone resorption related to a remaining root of lower right first premolar surrounded by a partial zone of reactive sclerosis



Anaesthesia: In addition to nerve block anaesthesia topical anaesthesia is applied to mucosa. This help to decrease pain with the incision

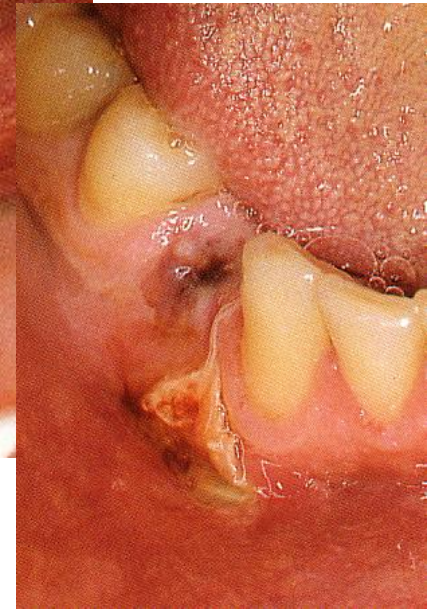
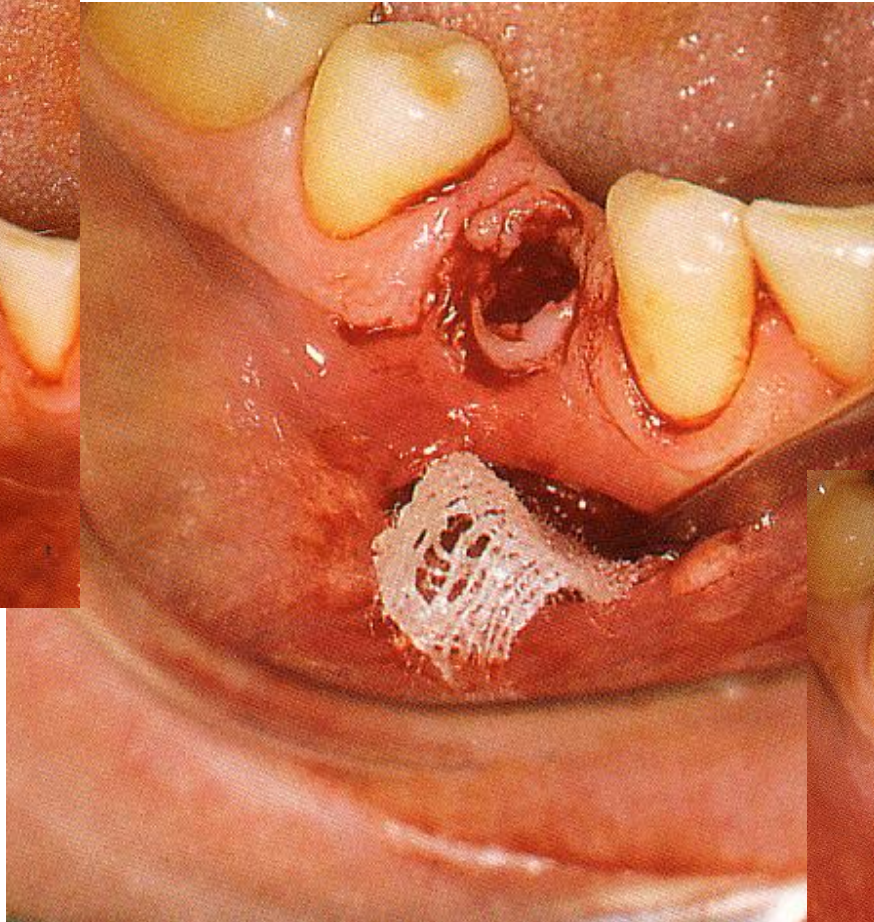
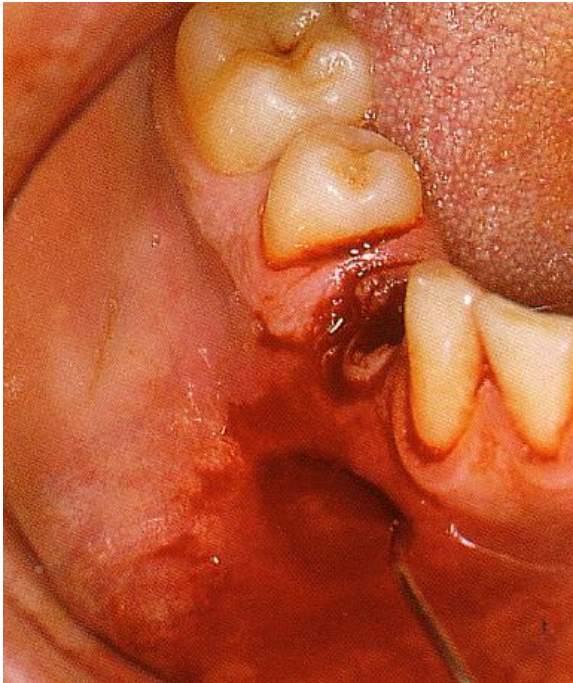
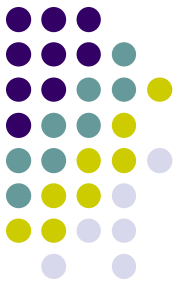


Incision: Scalpel cut through both the mucosa and the periosteum as it is guided perpendicular to the bone surface
The diagram demonstrate the correct orientation of the scalpel



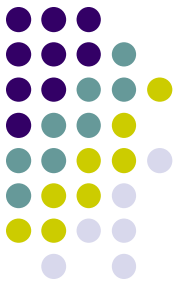
The periosteal elevator is used to **widen** the opening to the abscess cavity, allowing adequate drainage of pus

Extraction of the offending root is performed after incision and drainage of the abscess. This is to prevent pus from spreading submucosally when pressure is applied to the alveolar process as the tooth is extracted



The abscess cavity is rinsed using warm normal saline

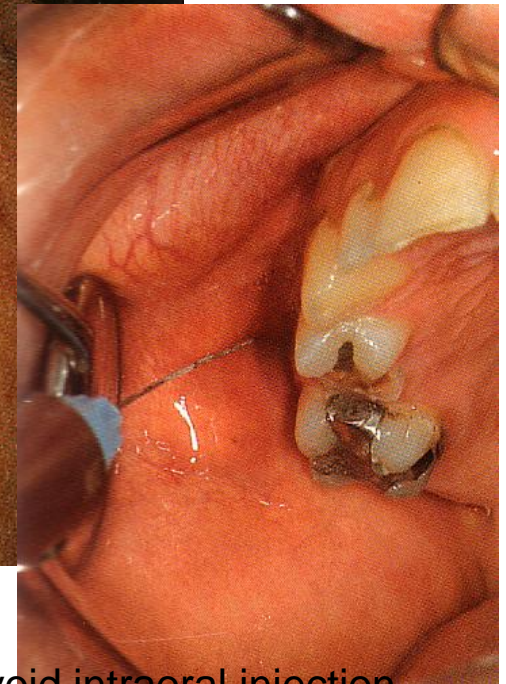
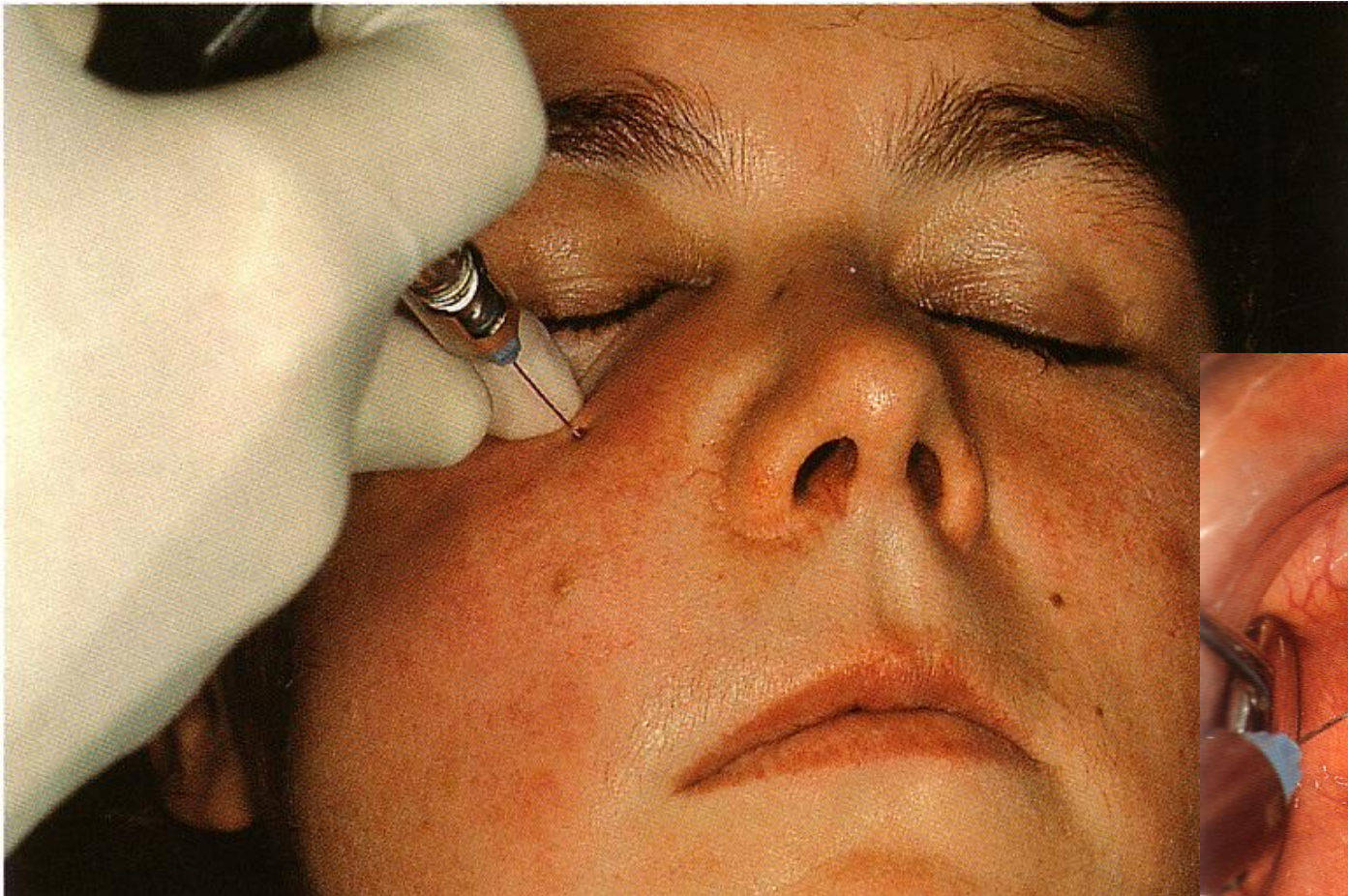
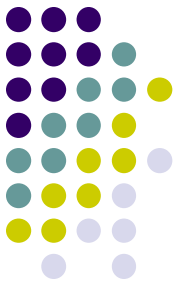
Drainage: Strip of gauze is placed in the abscess cavity. The drain can be saturated with disinfectant solution
Follow-up: First follow-up appointment should be 24 hours after surgery, the drain is removed, abscess cavity is rinsed and a new drain is reinserted



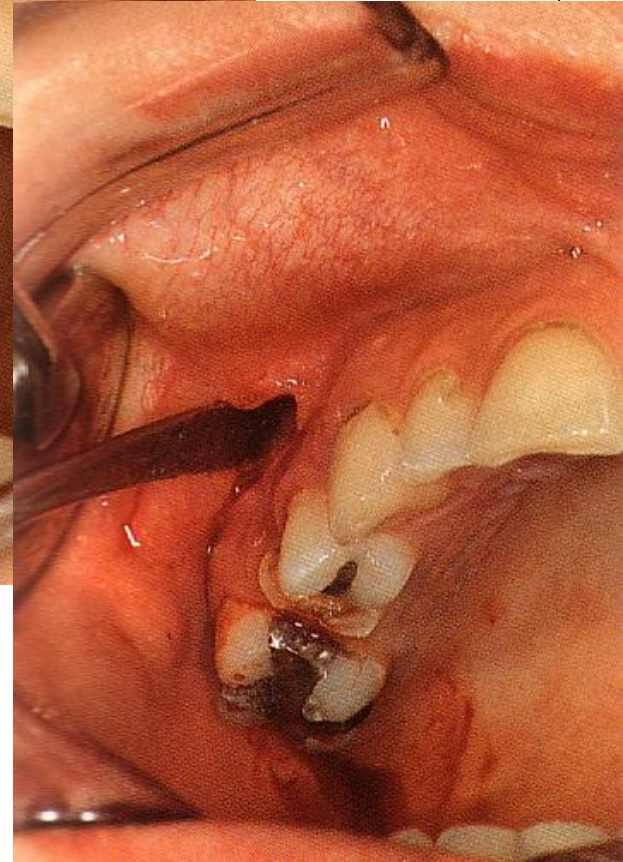
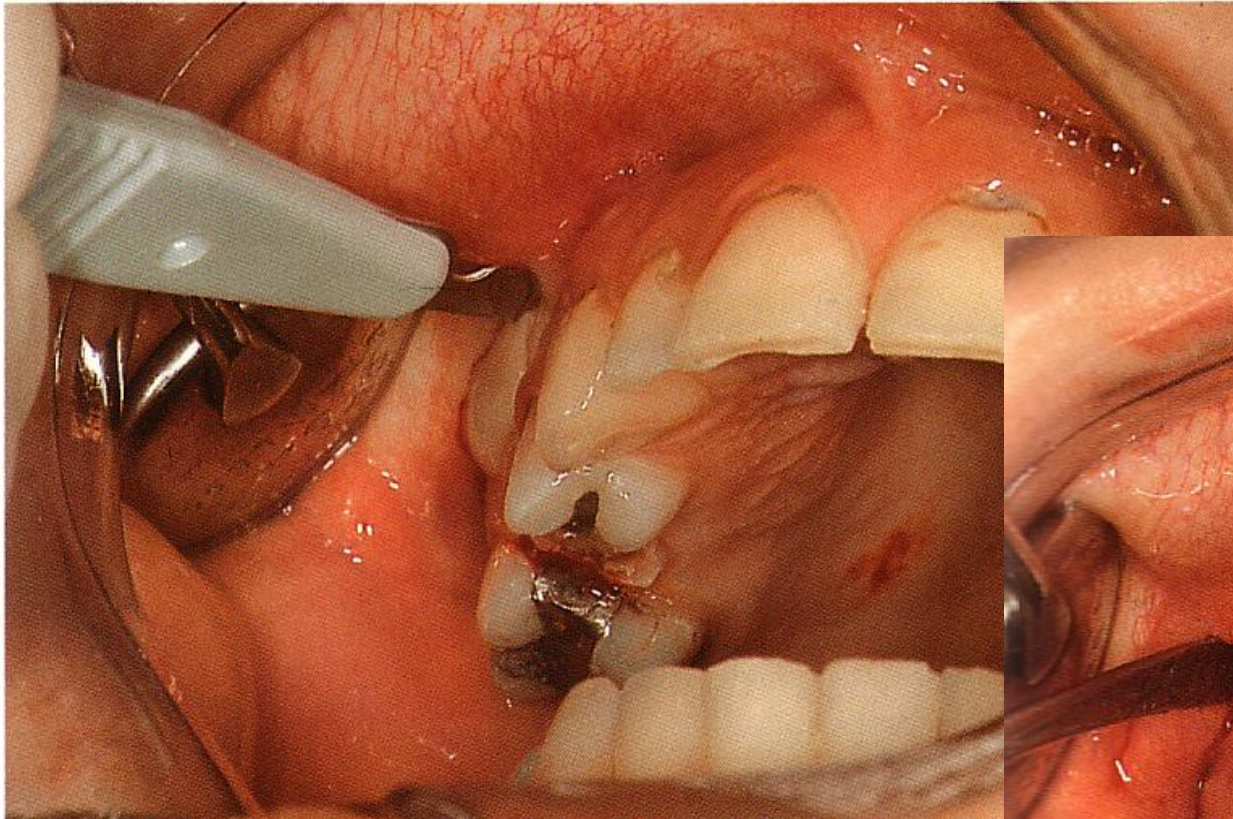
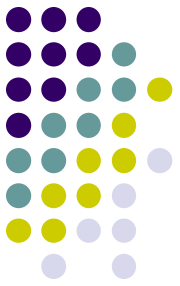
Canine fossa (infraorbital) abscess:

Palpation in the right upper buccal vestibule revealed a discrete well demarcated and indurated swelling

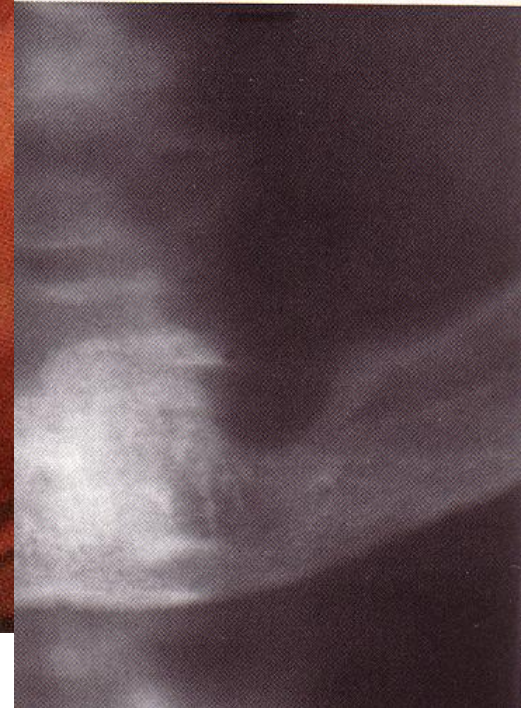
X-ray shows a non-vital upper right second premolar

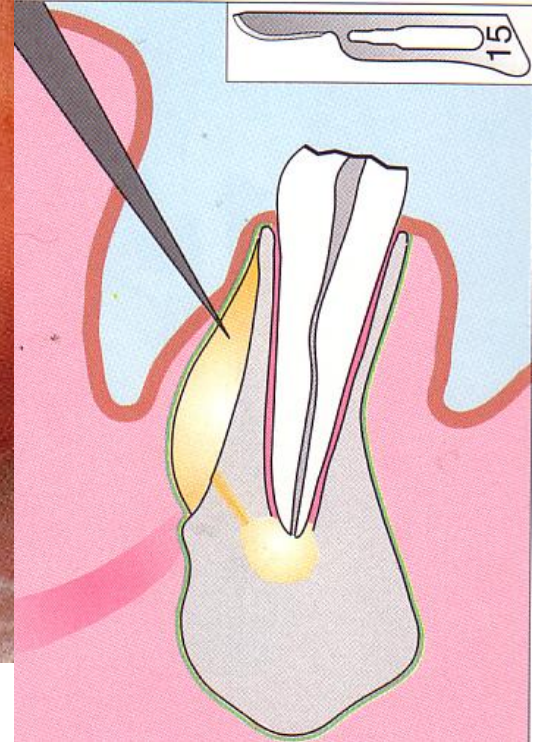
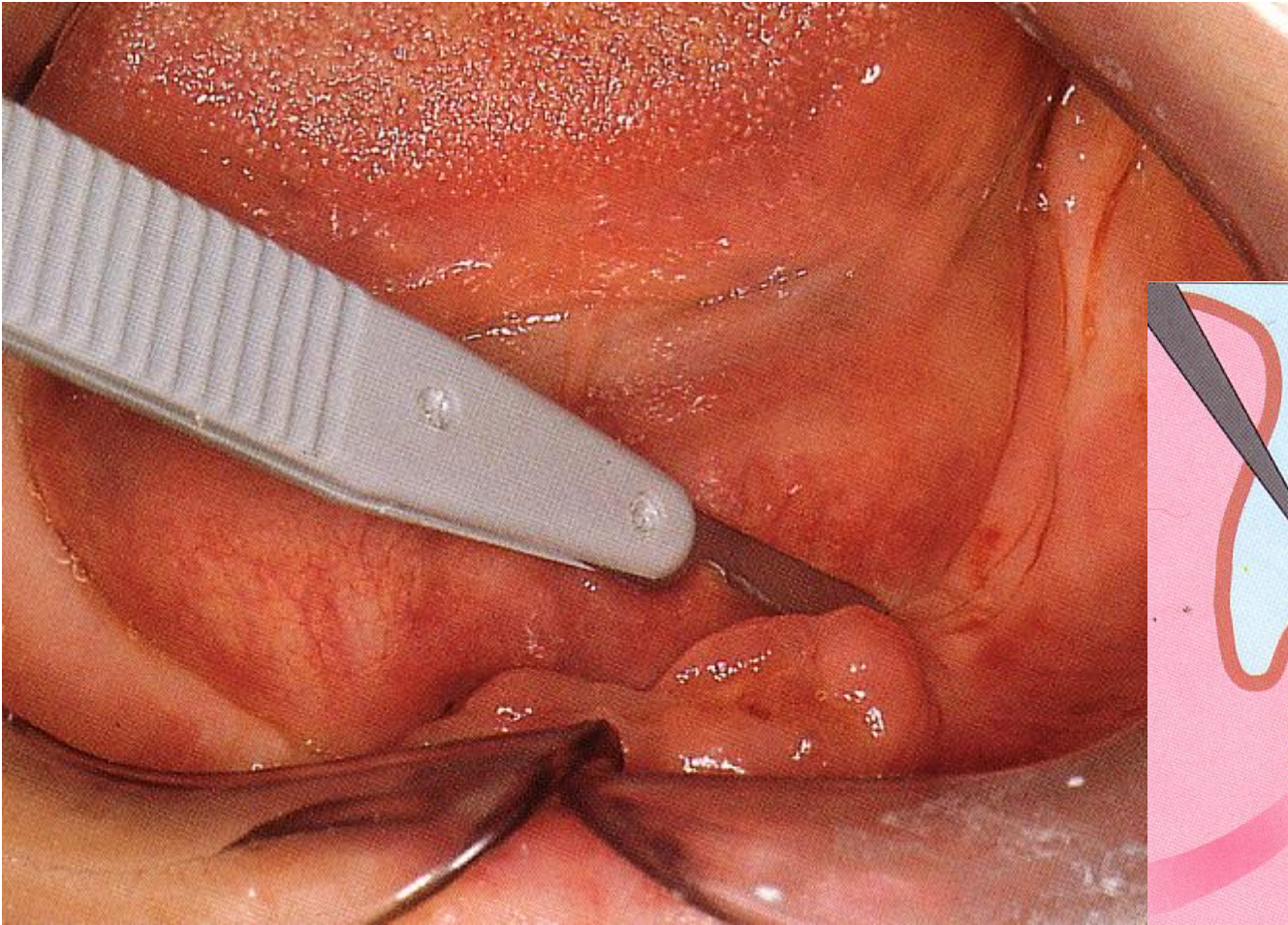
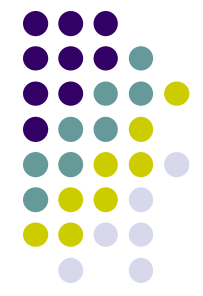


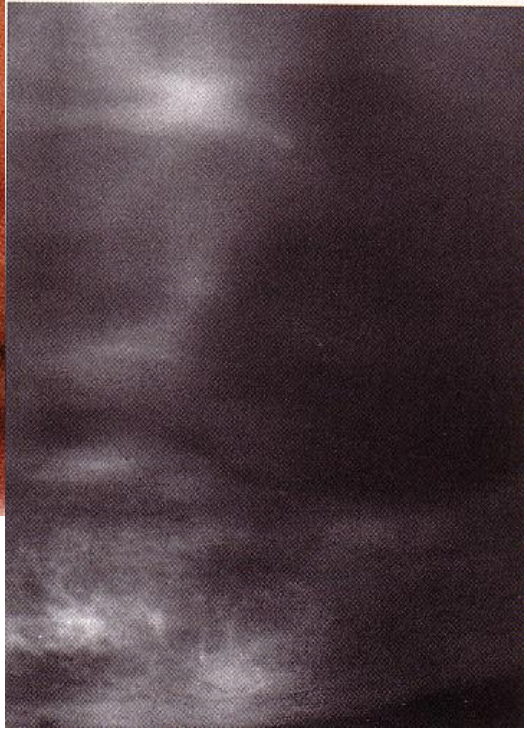
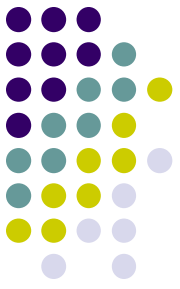
Anaesthesia: Extraoral infaorbital nerve block is essential to avoid intraoral injection which has to pass the needle through the abscess
Intraoral infiltration injection distal to the inflamed area

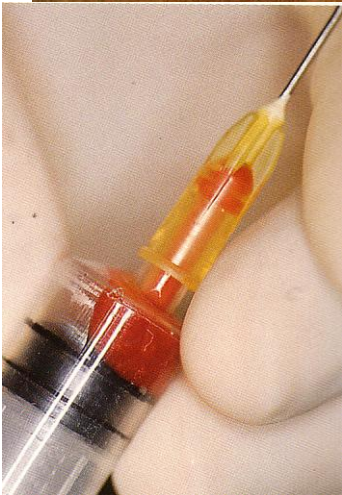


Incision: The incision is made in a horizontal direction with the scalpel blade perpendicular to the bone surface
A periosteal elevator is used to widen the opening



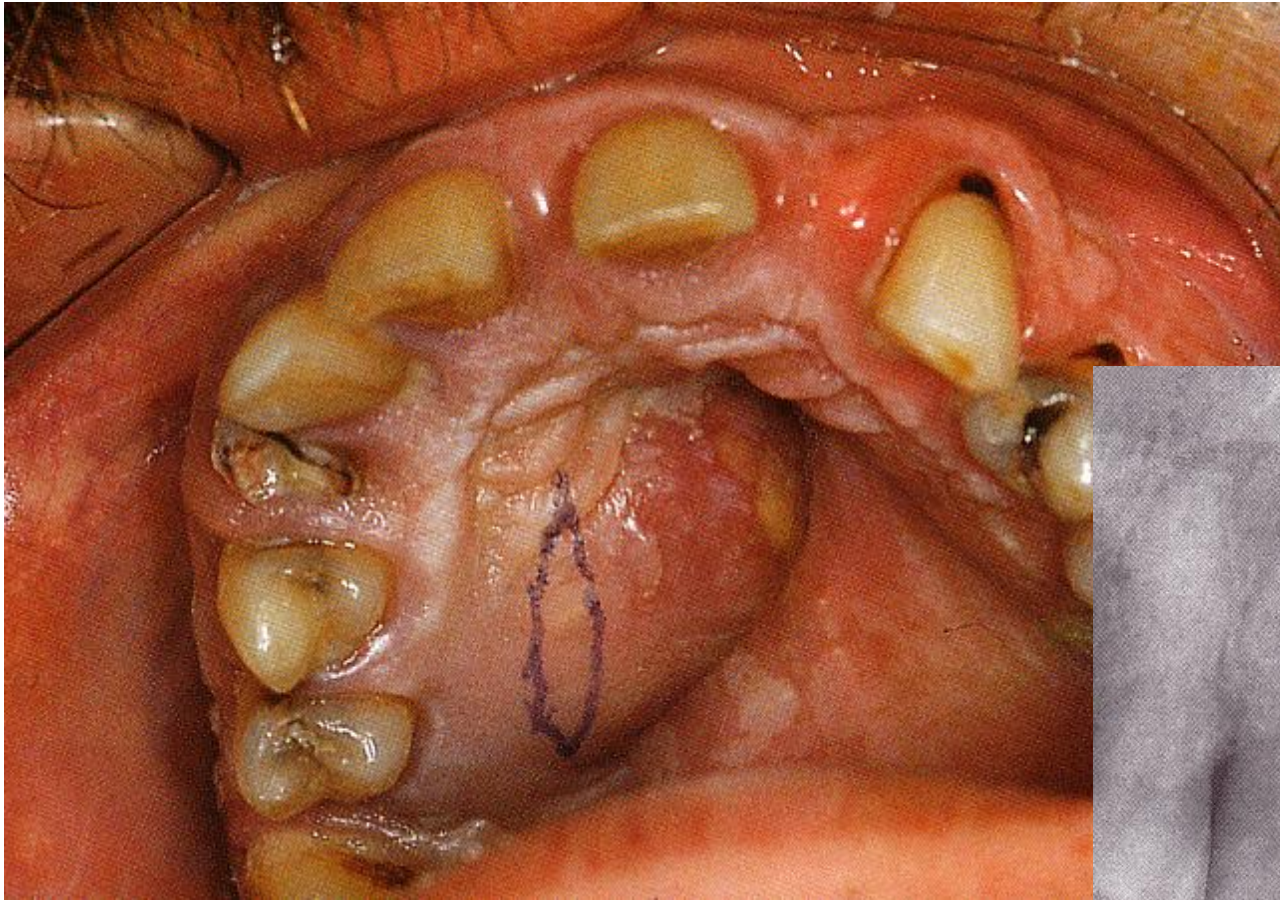




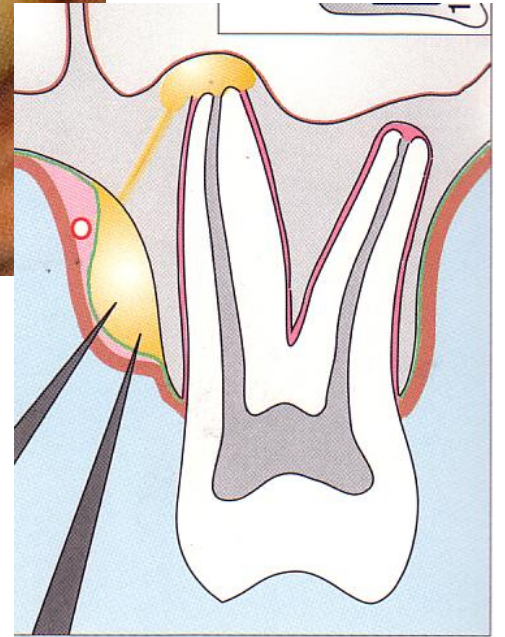
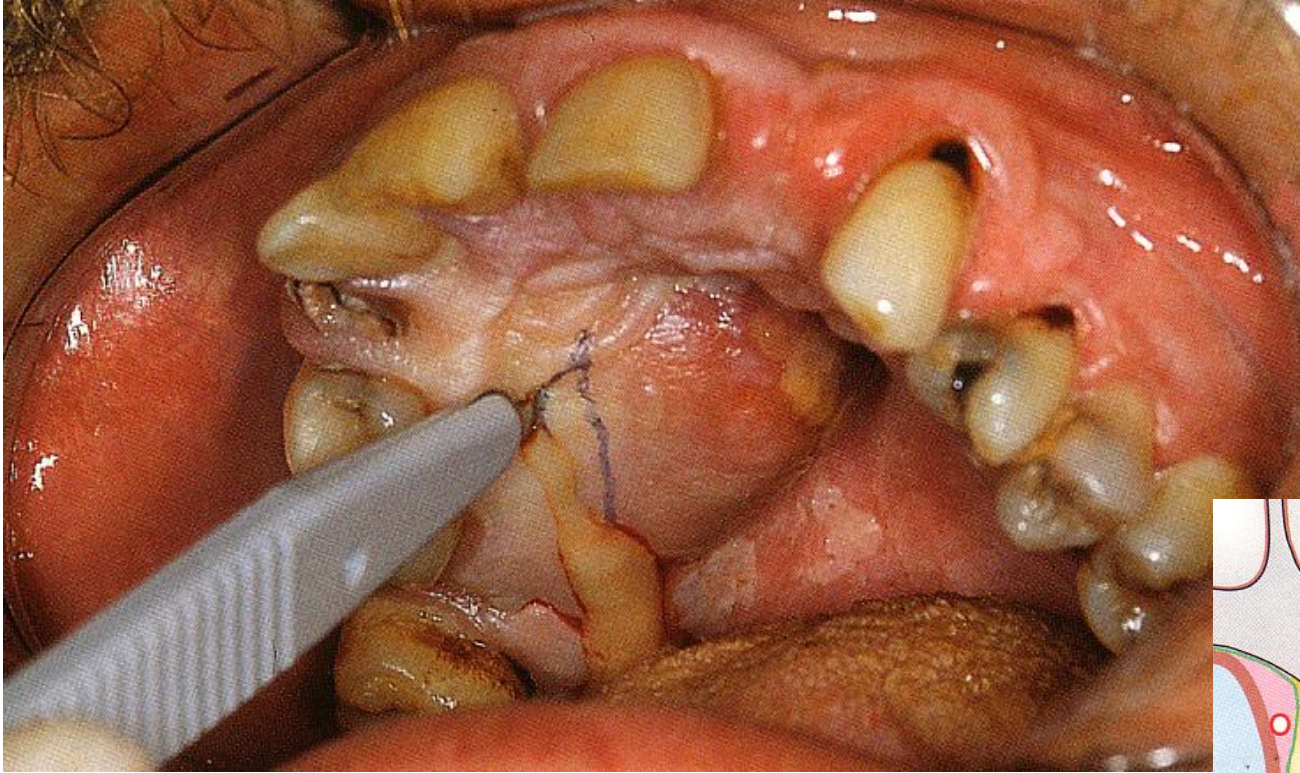
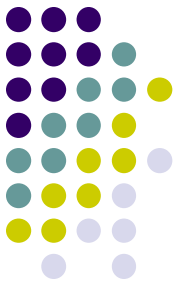


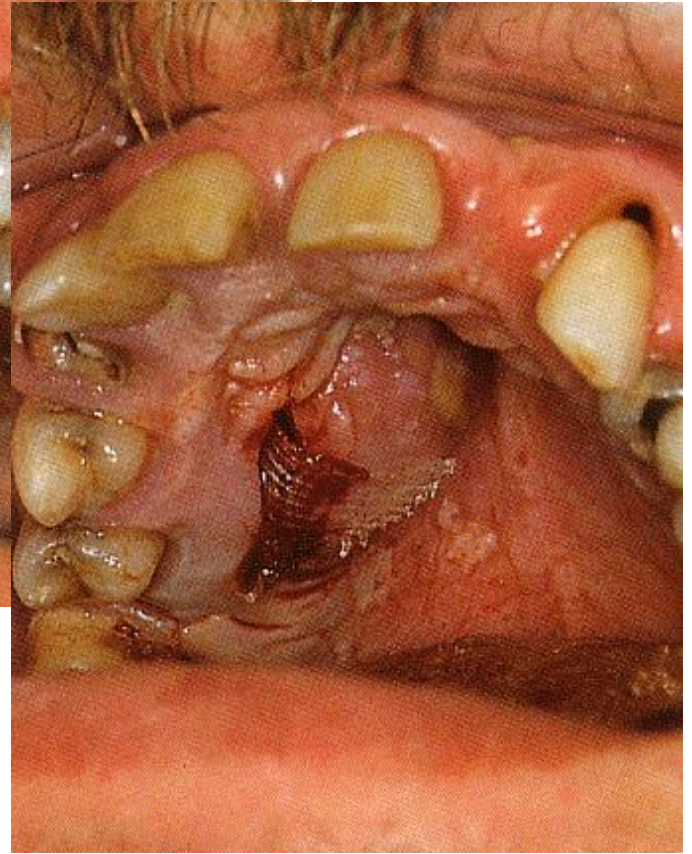
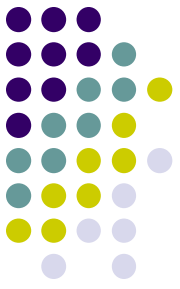
Extra-oral skin abscess

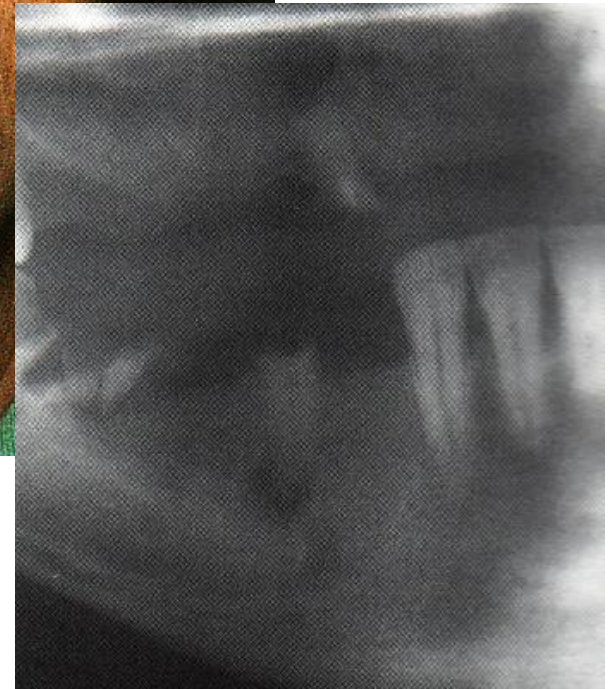
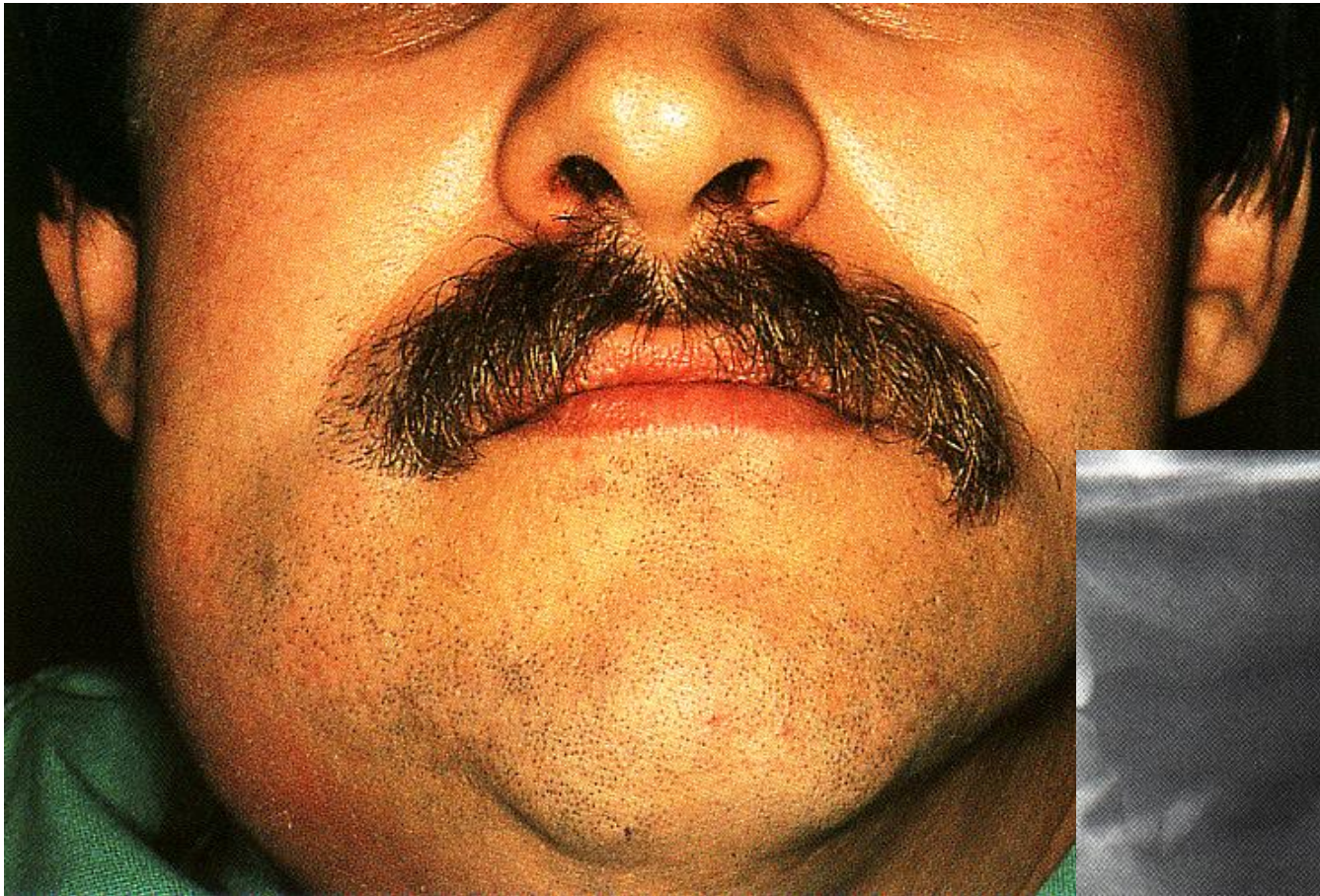
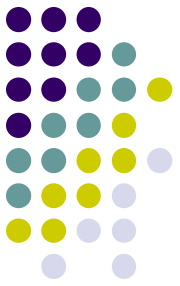




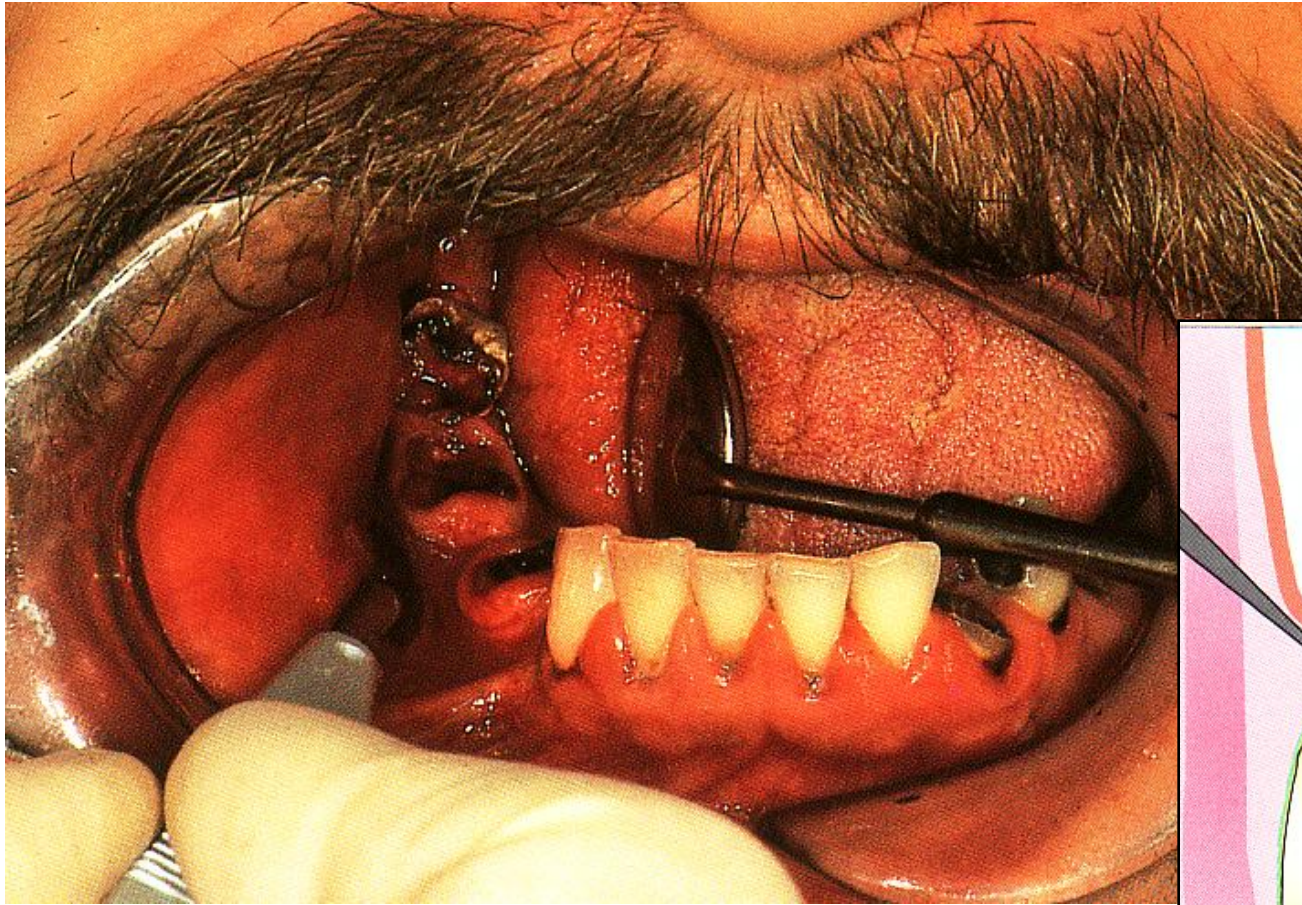
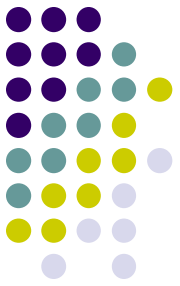
Palatal sub-periosteal abscess

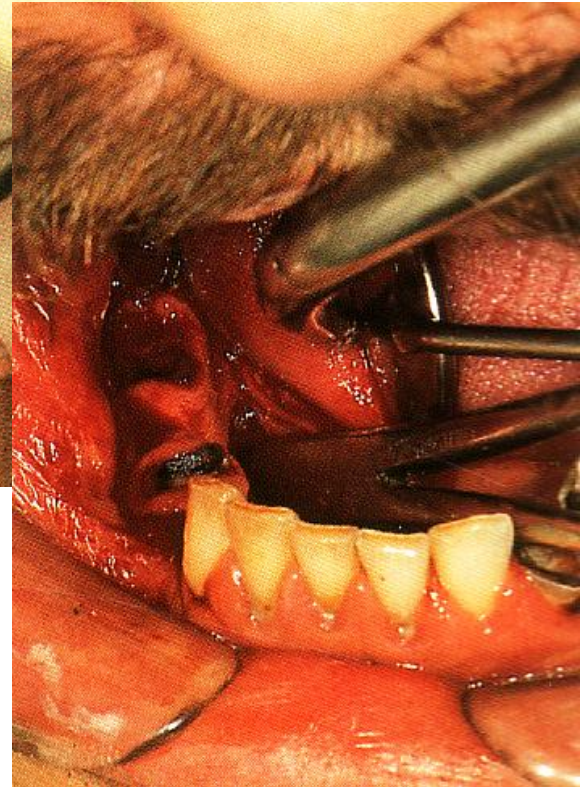
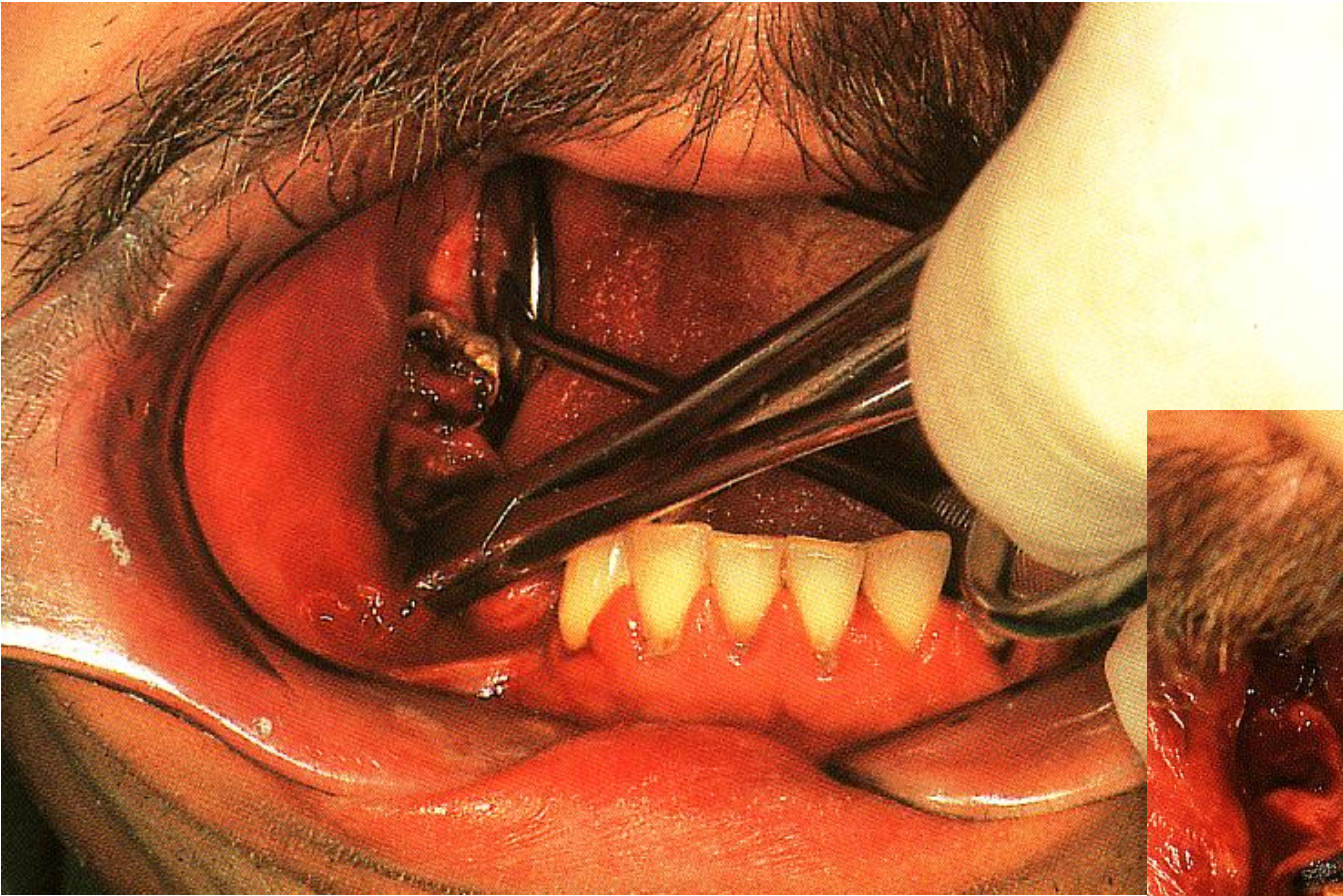
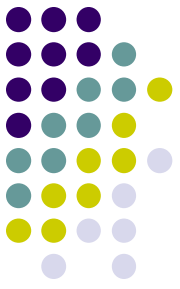


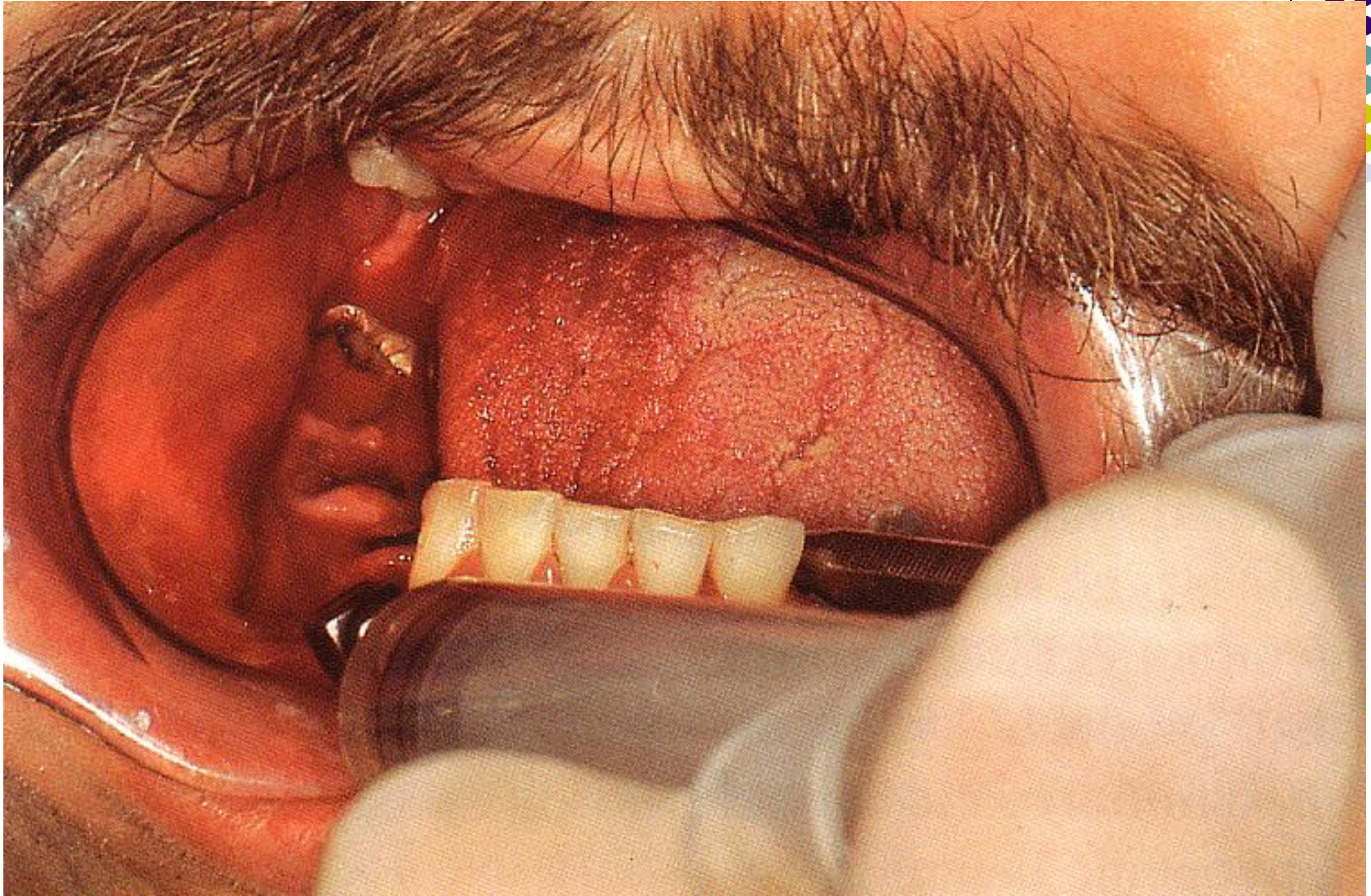


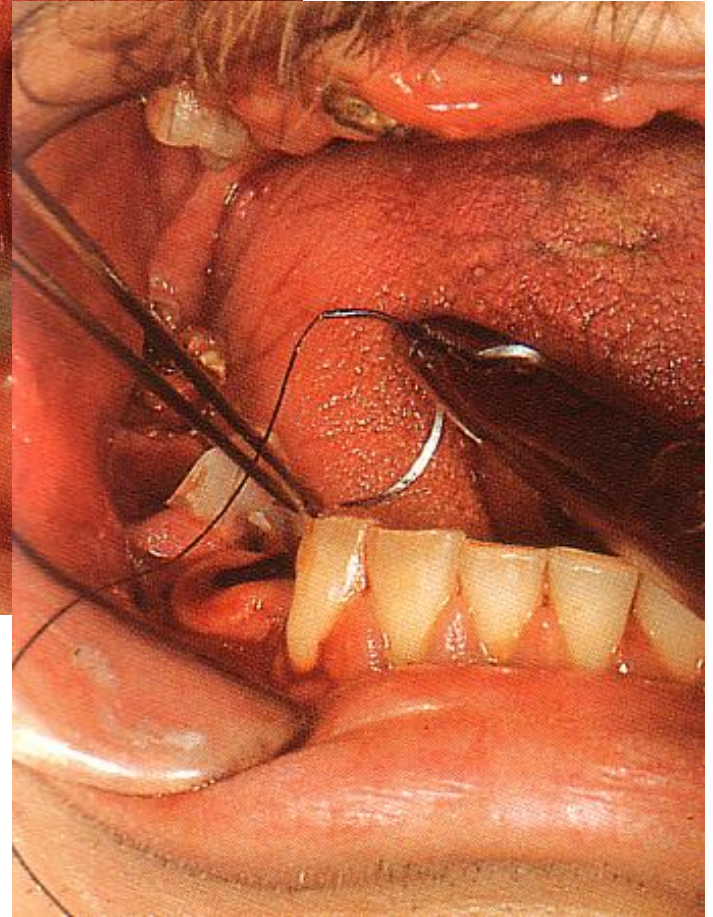
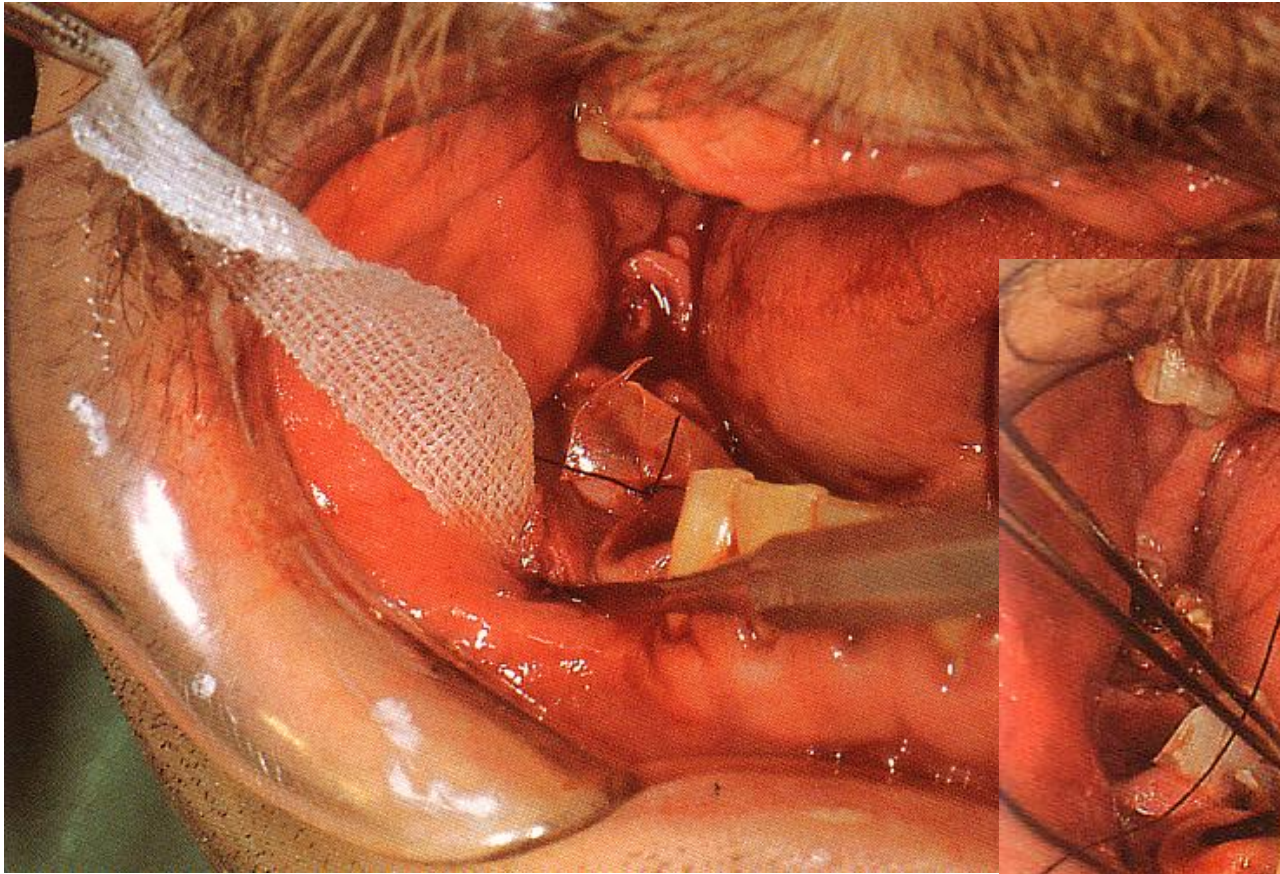


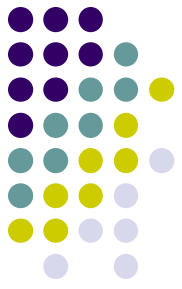
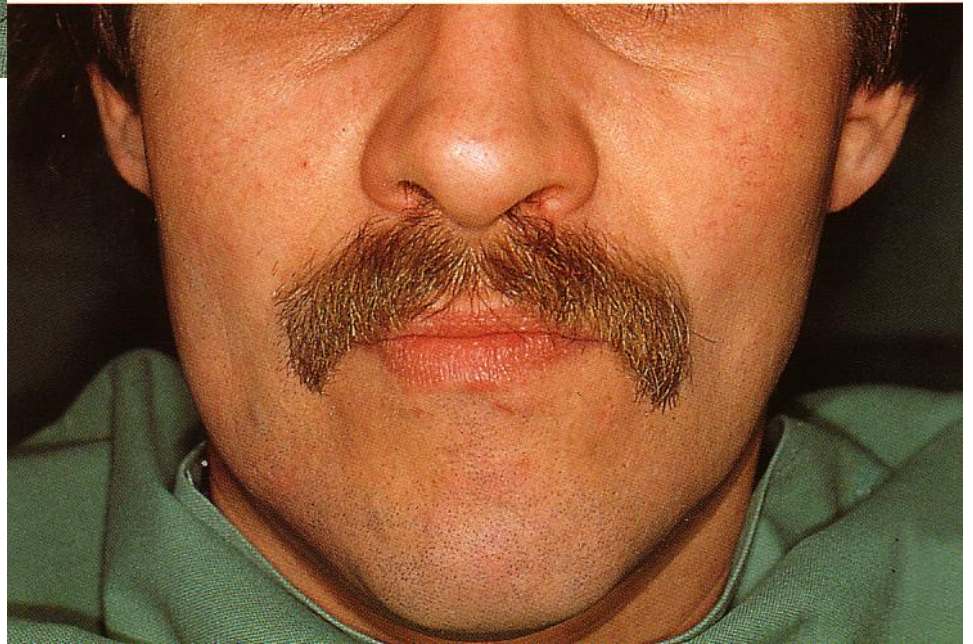
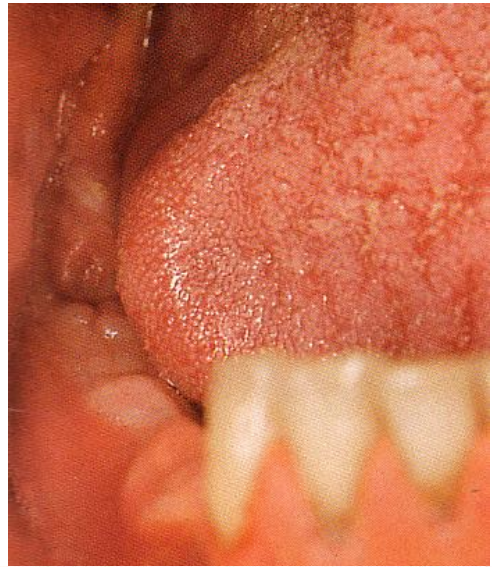
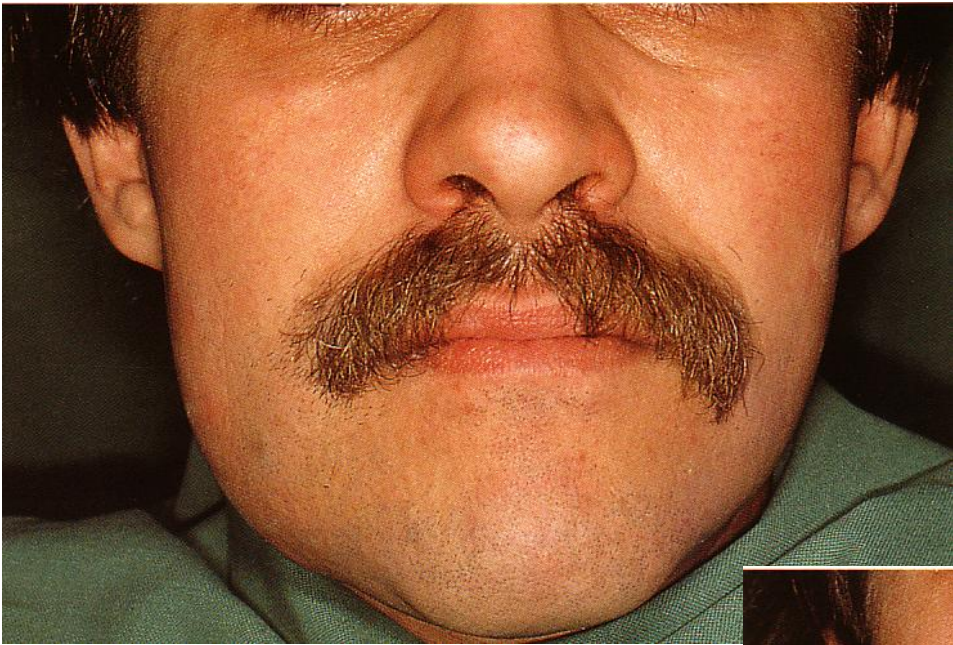
Para-Mandibular abscess

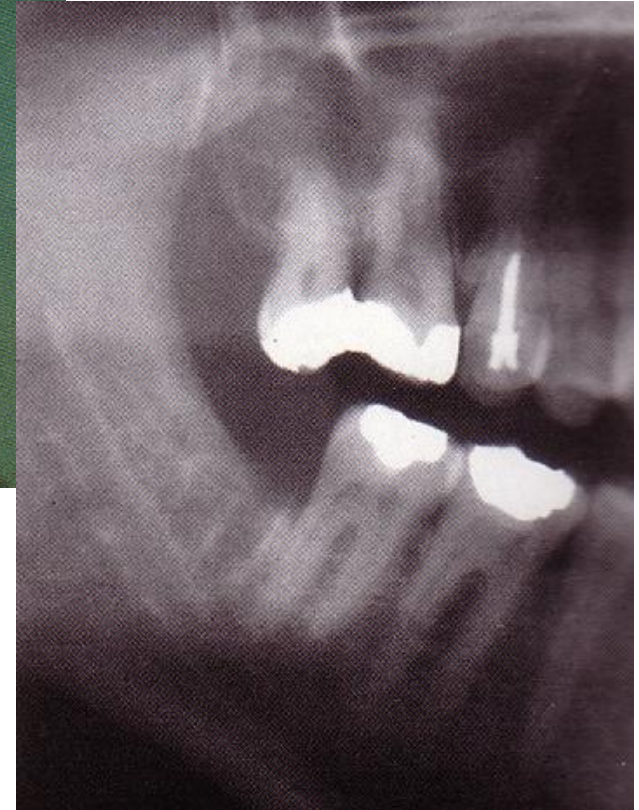
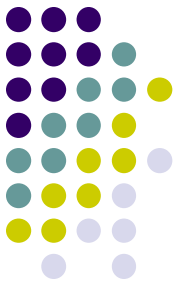




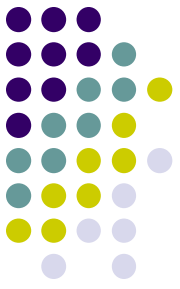


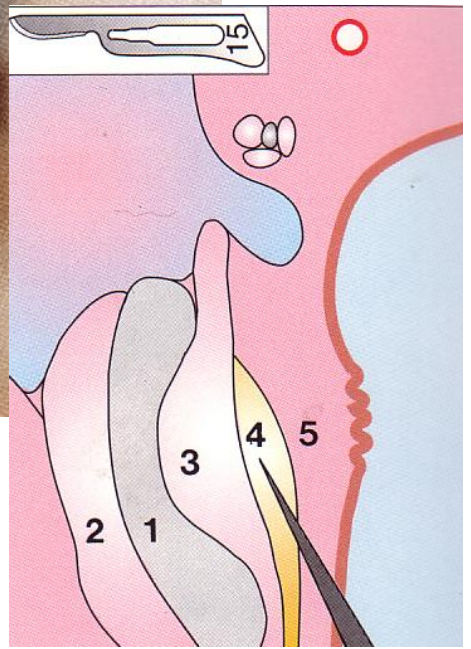
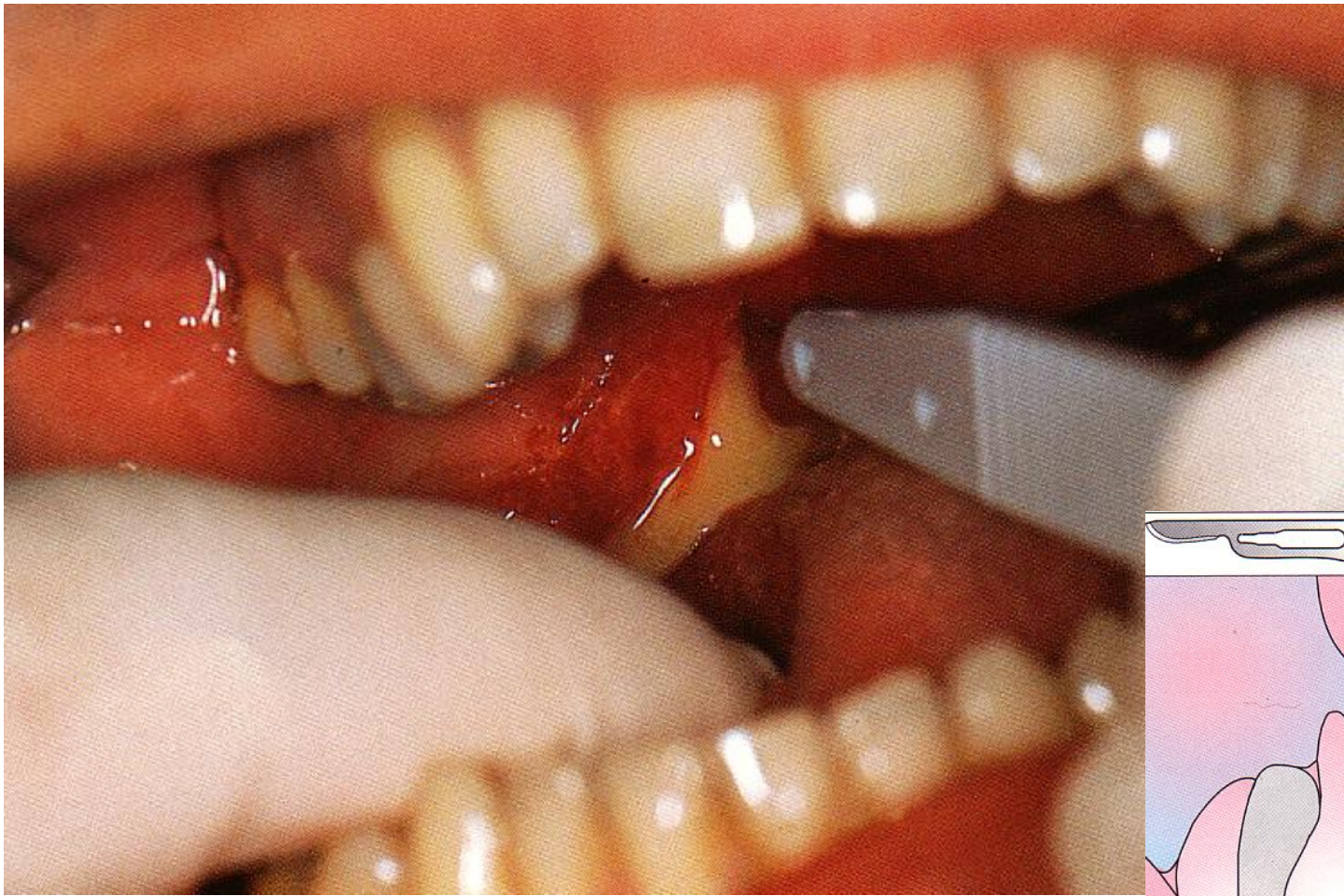
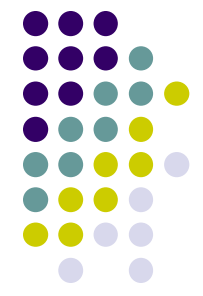


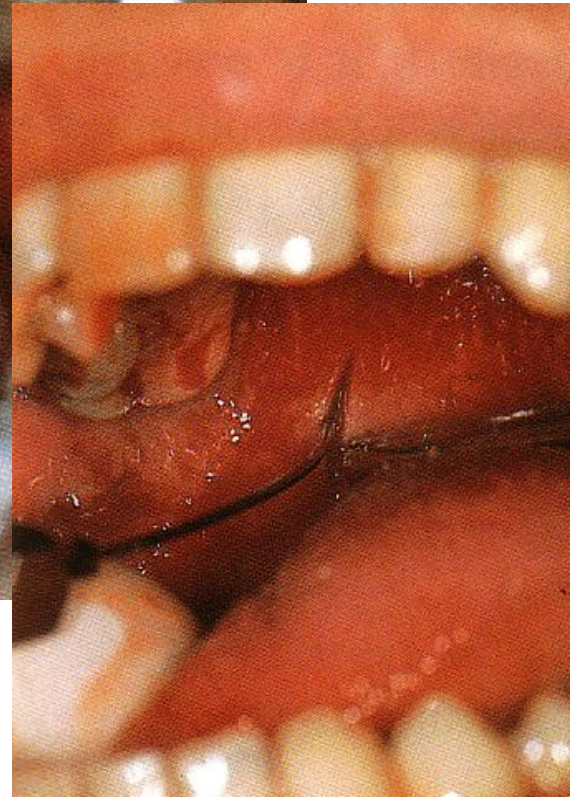
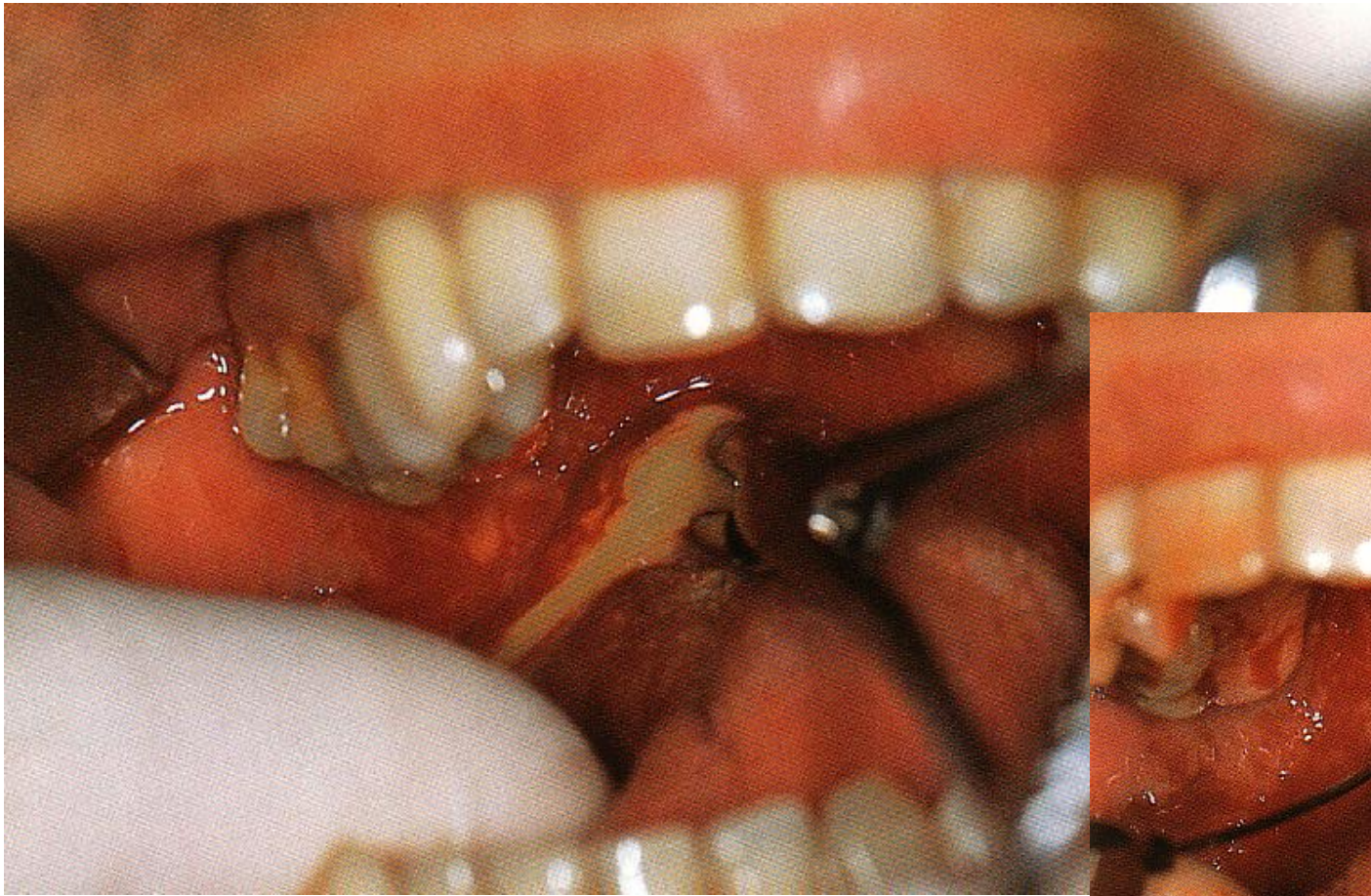
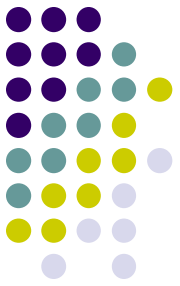


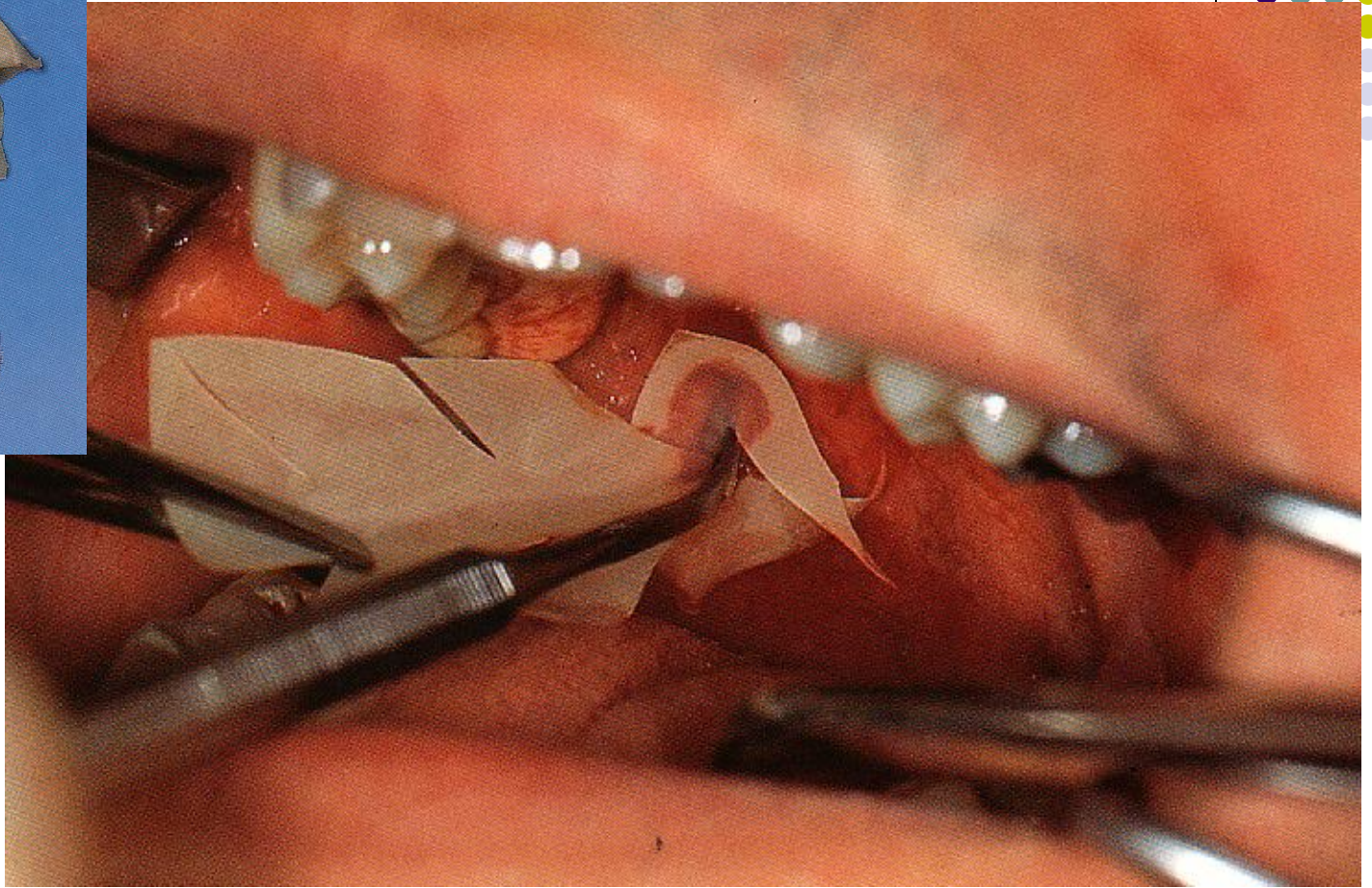
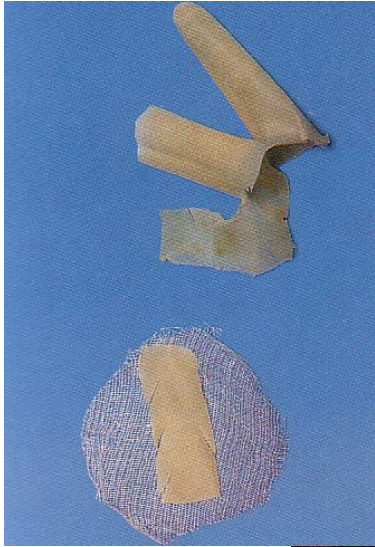


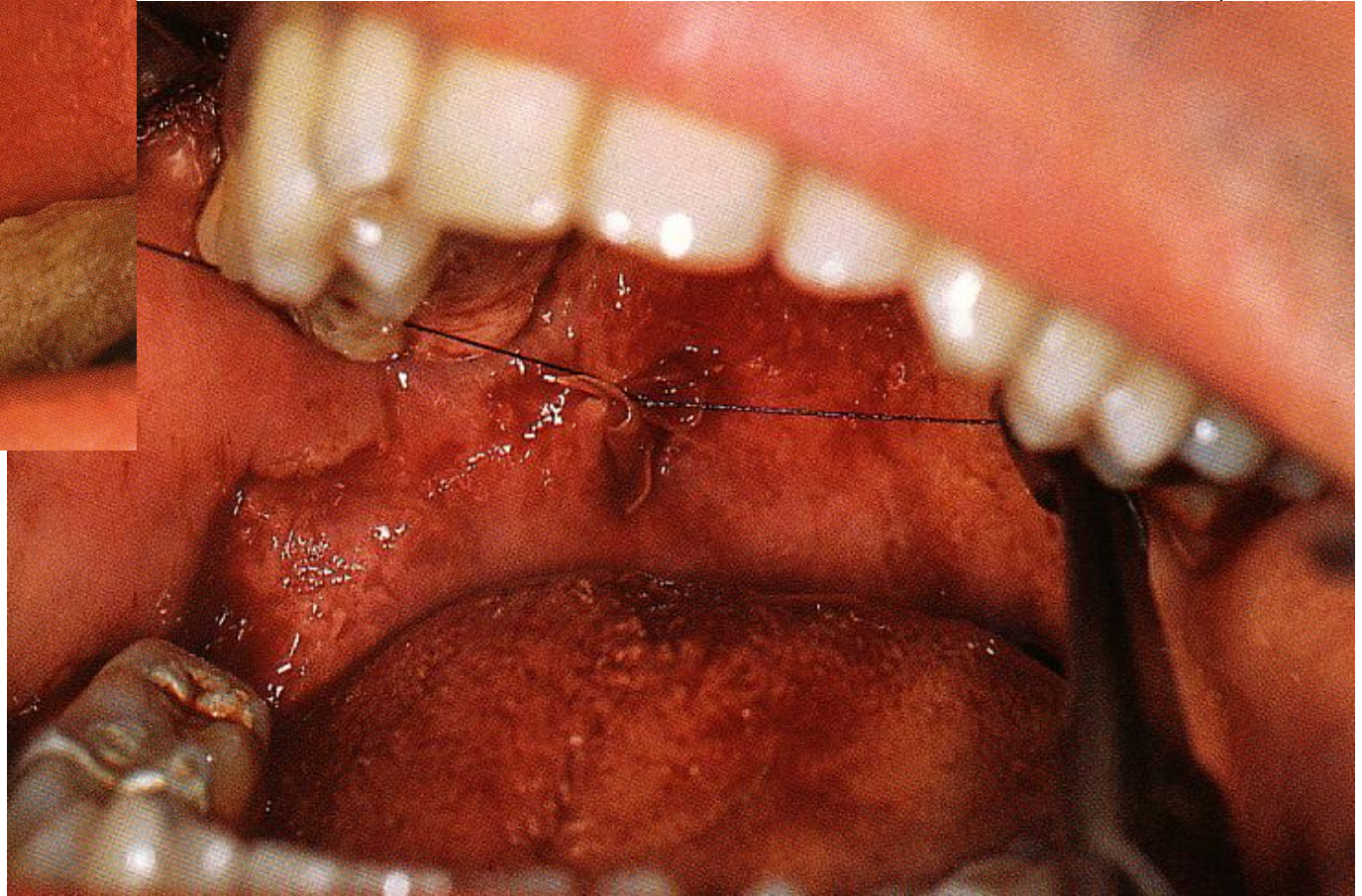
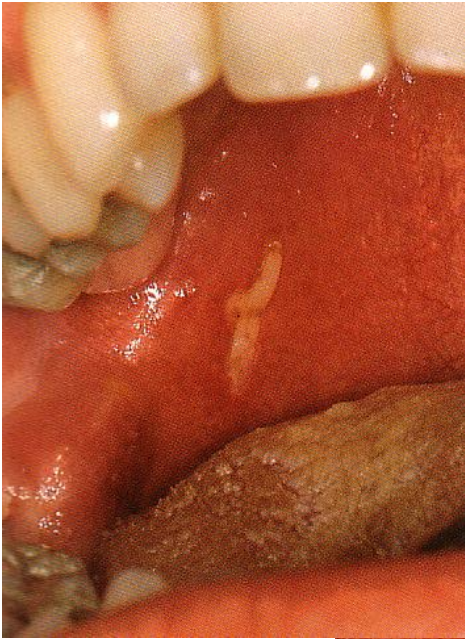
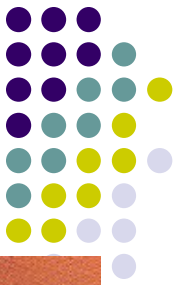
Pterygo-mandibular abscess

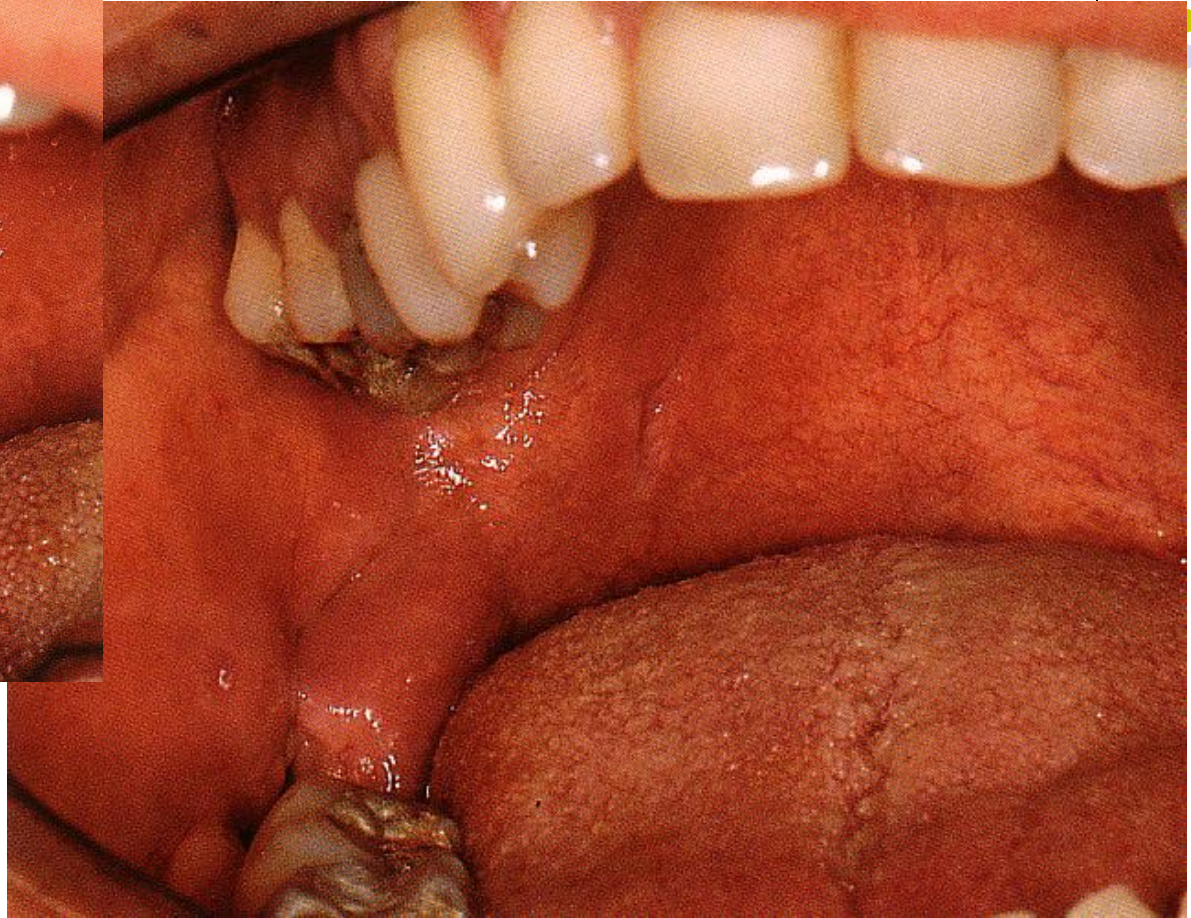






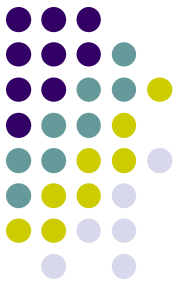


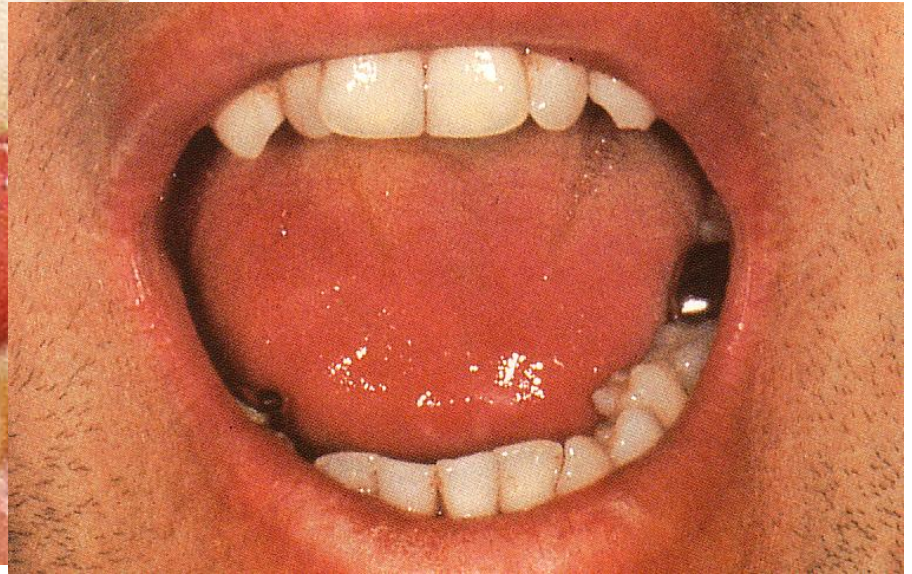
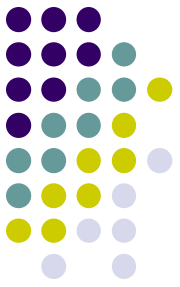


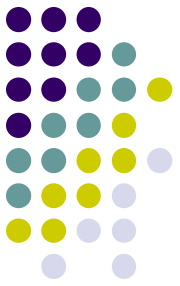


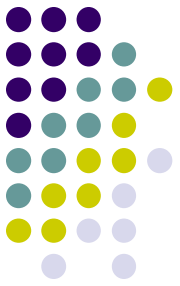


Sub massteric abscess









VI. Treatment of Complications



