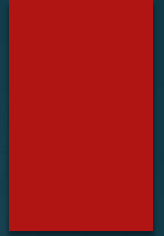


ODONTOGENIC INFECTIONS



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Literature:

- ▶ Szabó, Gy.: Oral and Maxillofacial Surgery
- ▶ Peterson, L. J.: Contemporary Oral and Maxillofacial Surgery

Odontogenic infections

Origin:

▶ Odontogen:

Caries effect diseases

Periodontal - Periodontology

Dentition

▶ Non odontogen:

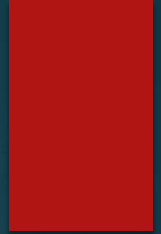
After dental treatment

Traumatogenic

Haematogenic

Dermatological

Odontogenic infections



Hyperaemia of pulp

Pulpitis

Gangrene of pulp

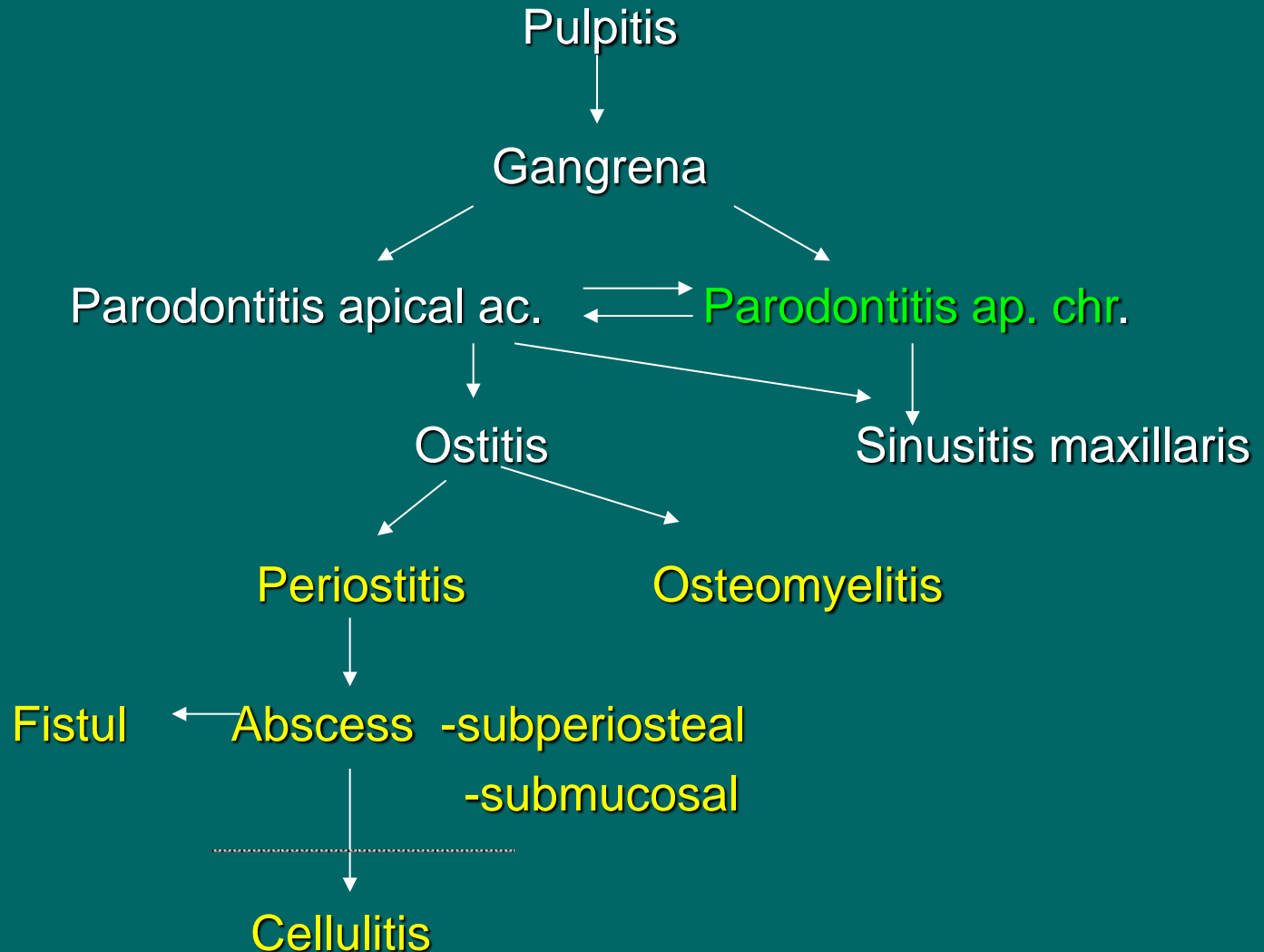
Apical Periodontitis

Abscess (Periostitis)

Osteomyelitis

Cellulitis (Phlegmone)

Odontogenic infections



Diagnose of caries effected diseases

- ▶ History, symptoms
 - ▶ Pain (type, strength, duration, localisation, spontaneous, triggered by cold, sweet, hot, biting)
- ▶ Physical examination
- ▶ Imaging
 - ▶ X ray
 - ▶ Intraoral radiographs
 - ▶ OPTG (ortopantomogram)

Symptoms of caries effected diseases

▶ Caries, hyperaemia of pulp

- ▶ Pulpitis
- ▶ Gangrene
- ▶ Acute periodontitis (=acute apical parodontitis)
- ▶ Chronic periodontitis (=chronic apical parodontitis)

Symptoms of caries effected diseases

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- ▶ **Pulpitis**
- ▶ Gangrene
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- ▶ Pulpitis
- ▶ **Gangrene**
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Symptoms of caries effected diseases

- ▶ Caries, hyperaemia of pulp
- ▶ Pulpitis
- ▶ Gangrene
- ▶ Acute periodontitis
(=acute apical
parodontitis)
- ▶ Chronic periodontitis (=chronic apical
parodontitis)

Symptoms of caries effected diseases

- ▶ Caries, hyperaemia of pulp
- ▶ Pulpitis
- ▶ Gangrene
- ▶ Acute periodontitis (=acute apical parodontitis)
- ▶ Chronic periodontitis
(=chronic apical parodontitis)
 - ▶ Periapical abscess
 - ▶ Periapical granuloma
 - ▶ Radicular cyst

Origin of pain	Pulpal origin (hyperaemia, pulpitis)	Acute periodontitis	Dental abscess	Acute pericoronal infection	Dry socket
Type of pain	1.strong, sharp 2.attacks, continuous	dull, for biting stronger	dull, pulsate, sometimes strong	dull, pulsating, for the moving the mandible	dull, pulsating, constant
Localisation of pain	affected tooth, neighbouring teeth or edentate jaw parts	affected tooth	affected tooth	affected area	alveolar socket, 2-4 days after tooth extraction
Referred pain	lower teeth→ear, face upper→temporal region, eye, face	--	ear, eye, face, temporal region	ear	ear
Provocative agent	thermal and osmotic changes in oral cavity, later spontaneous	biting (axial direction), or spontaneous	biting, touching (lateral direction also)	eruption of (lower) wisdom teeth	touching or spontaneous
Relieving agent	elimination of provocative agent or analgesics	analgesics	heating, analgesics	heating	heating, analgesics
Duration	1. during the provocation 2. 20-30 min. or more _(typically at night)	constant, worse at eating	constant, worse during the night	constant, worse during eating	constant, worse during eating, wakefulness
Other symptoms	caries, new filling, split or fracture on enamel	hyperaemia of the gum, elevated tooth	swelling on face and lymphnodes, fluctuation	dentition, fever, swelling on face, foetor ex ore	foetor ex ore, sensitive bone area
Consequence without treatment	acute periodontitis, abscess	abscess	fistulisation, become chronic	abscess, become chronic	sequestration of alveolar bone
Therapy	root canal treatment or extraction	root canal treatment or extraction	extraction or root canal treatment	liberation of crown or removal	conservative(local eg. Chlumsky sol.) or surgical (curettage)

Criteria for referral to a specialist

- ▶ Rapidly progressive infections
- ▶ Difficulty in breathing
- ▶ Difficulty in swallowing
- ▶ Fascial space involvement
- ▶ Elevated temperature
- ▶ Severe jaw trismus (<10 mm)
- ▶ Toxic appearance
- ▶ Compromised host defence

Compromised host defences I.

- ▶ Uncontrolled metabolic diseases

- Uraemia

- Alcoholism

- Malnutrition

- Severe diabetes

Compromised host defences II.

- ▶ Suppressing diseases

 - Leukaemia

 - Lymphoma

 - Malignant tumours

- ▶ Suppressing drugs

 - Cancer chemotherapeutic agents

 - Immunosuppressive

Therapy of dental infections

- ▶ Curing the producer tooth (root canal treatment, removal)
- ▶ Medical treatment (anti-inflammatory drugs, antibiotics)
- ▶ Physiotherapy (wet bandage)
- ▶ Surgical (incision)

Indications for use of antibiotics:

- ▶ Acute onset infections
- ▶ Diffuse swelling
- ▶ Compromised host defense
- ▶ Involvement of fascial spaces
- ▶ Severe pericoronitis
- ▶ Osteomyelitis

Modifiing facts to indication for use of antibiotics

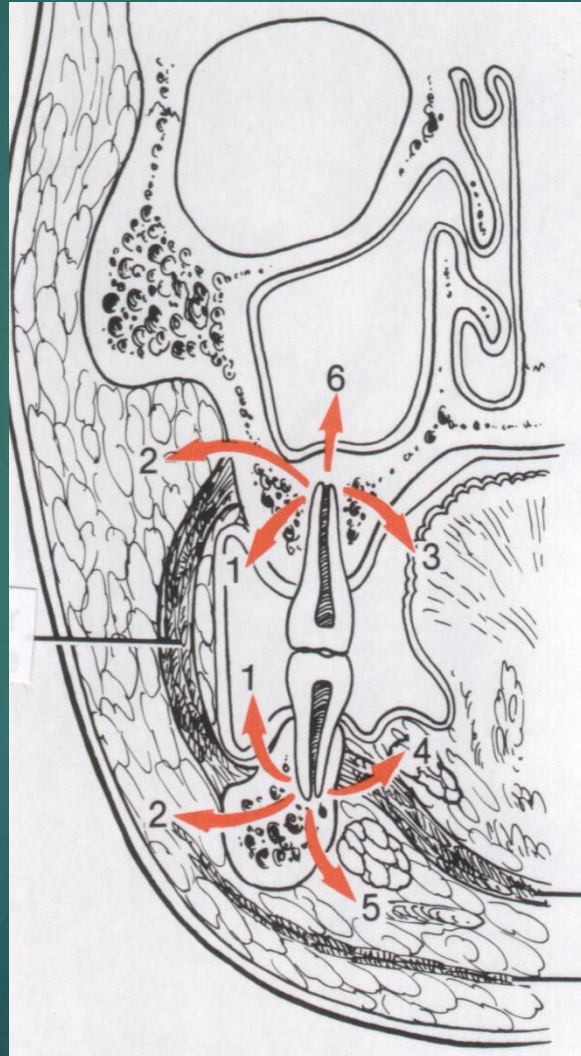
- ▶ State of the patient
- ▶ Age of the patient
- ▶ Progradation of infections
- ▶ Treatment of the dental origin

Periostitis (Abscess)

- ▶ Acut
 - seros
 - purulent → abscess
 - subperiosteal
 - submucosal
- ▶ Chronic

Expresses of infections

M. buccinator



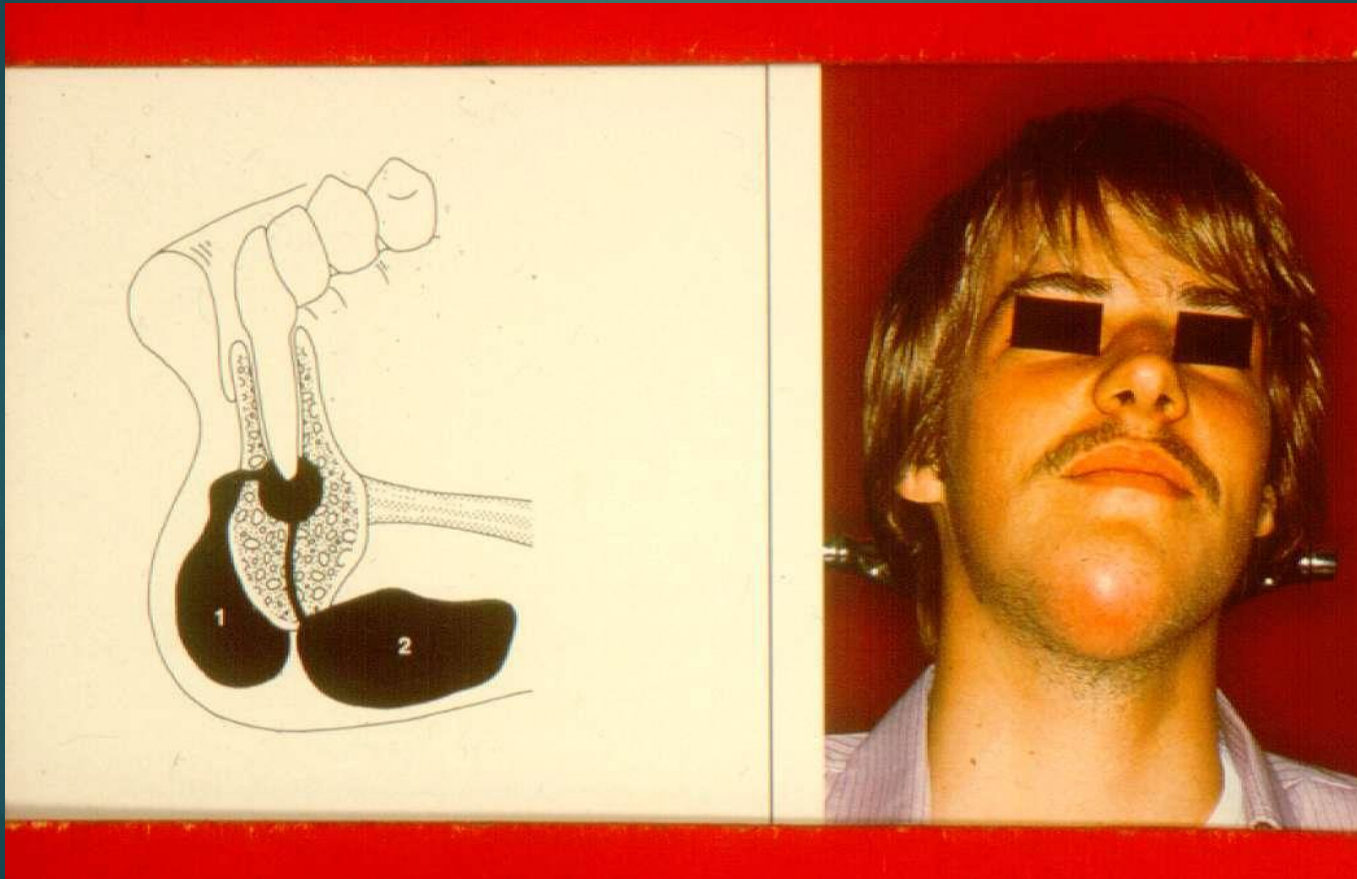
M. mylohyoideus

Platysma

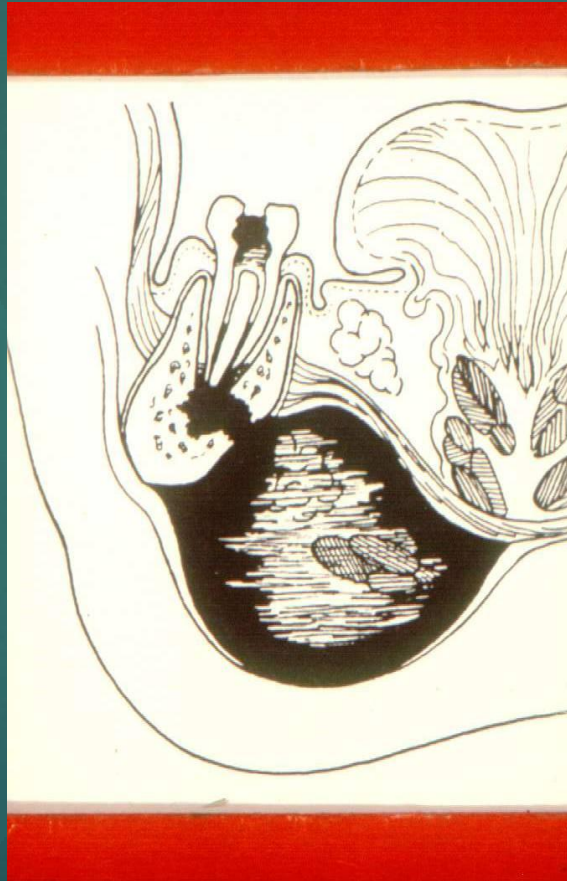
Potentially infected mandibular spaces

- ▶ Submental region
- ▶ Submandibular region
- ▶ Sublingual region
- ▶ Buccal region
- ▶ Submasseteric region
- ▶ Parotid region
- ▶ Parapharyngeal region
- ▶ Pterygomandibular region
- ▶ Peritonsillar region

Submental abscess

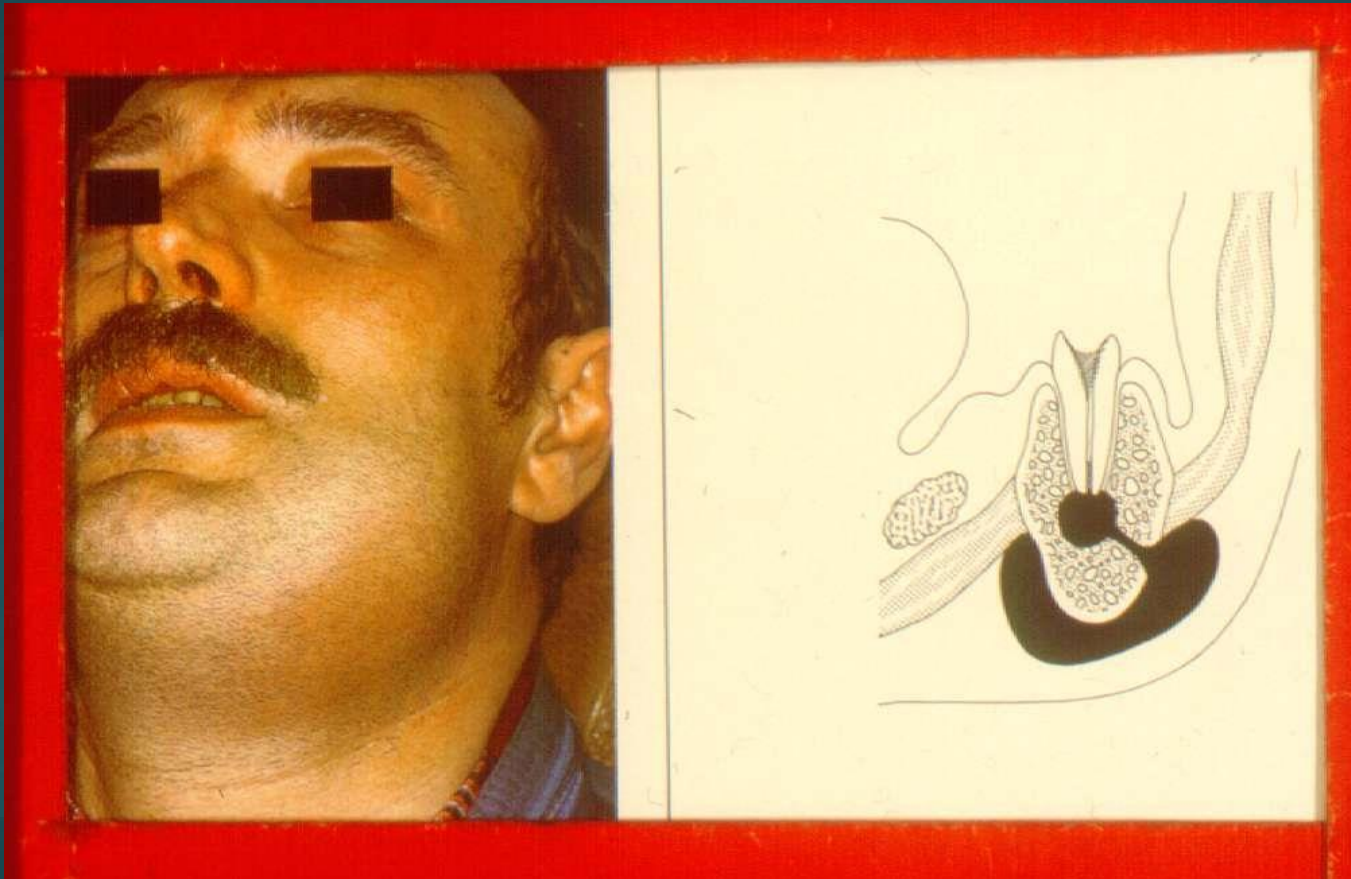


Submandibular abscess





Perimandibular abscess



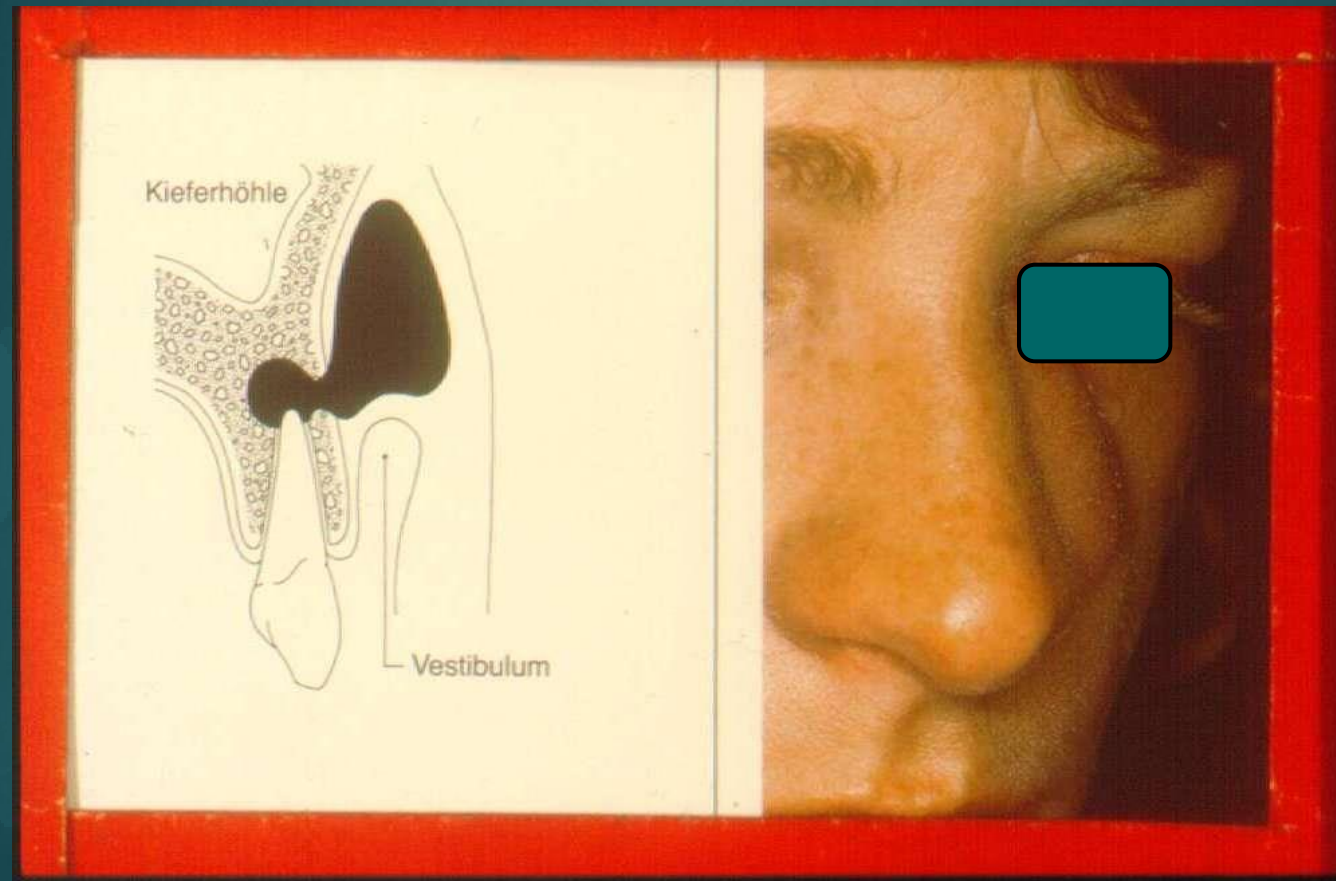
Perimandibular abscess



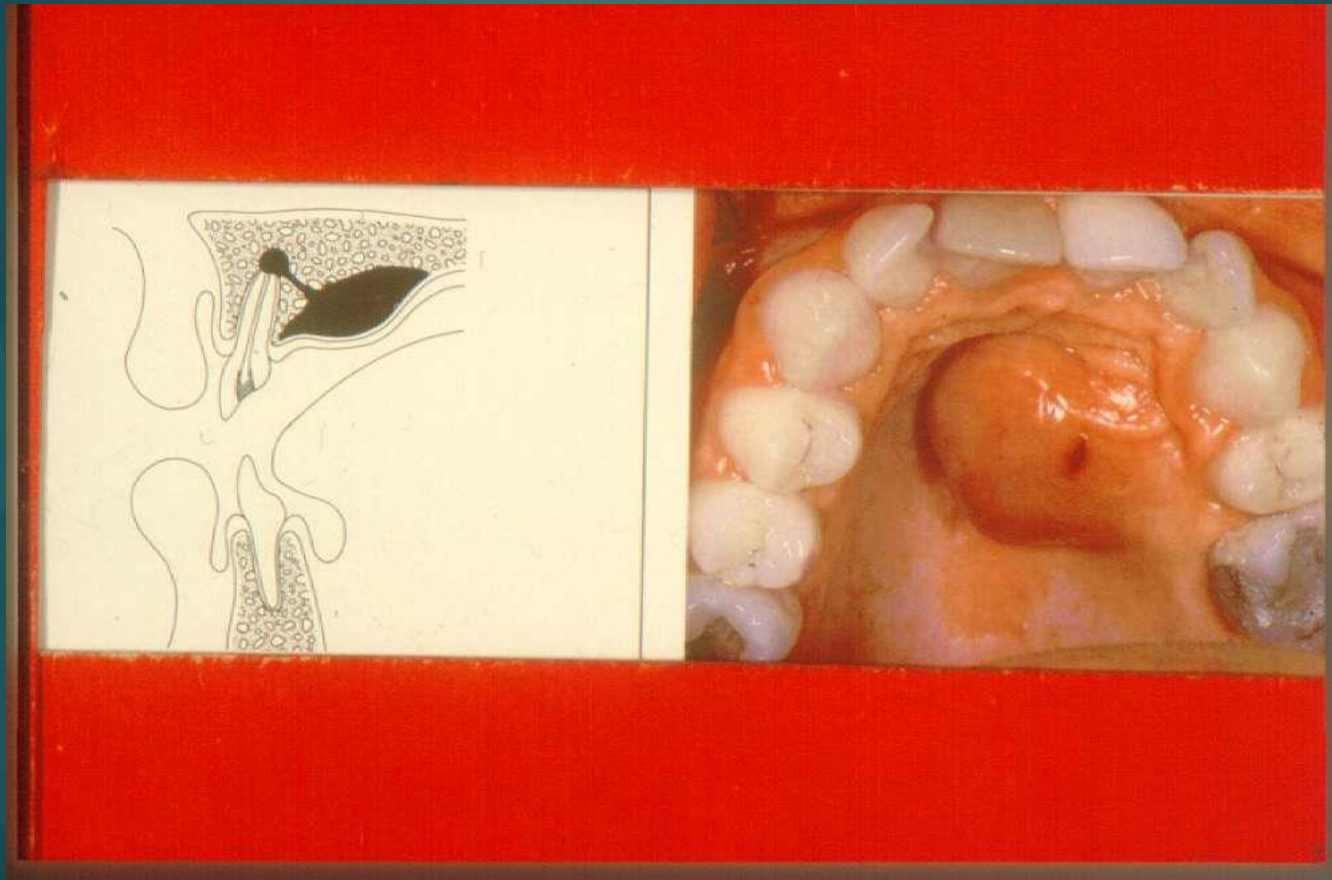
Potentially infected maxillary spaces

- ▶ Upper lip
- ▶ Canine fossa
- ▶ Palatal subperiosteal space
- ▶ Maxillary sinus
- ▶ Infratemporal region
- ▶ Temporal region
- ▶ Retromaxillary region

Abscess of canine fossa



Palatinal abscess



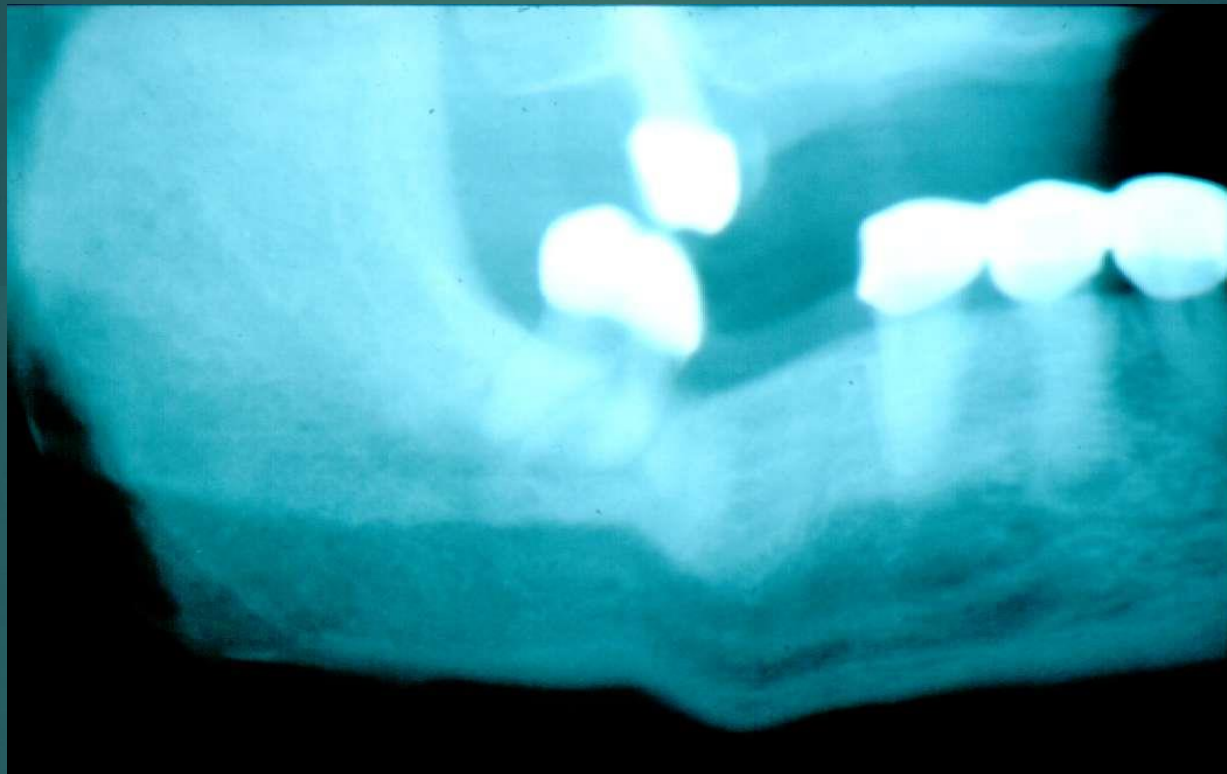
Therapy of abscesses

- ▶ Removal or root canal treatment of producer tooth
- ▶ Wet bandage
- ▶ Antibiotics (if necessary)
- ▶ Incision (if necessary)- intraoral
- extraoral

Therapy of abscesses - Extraction of inflammed tooth









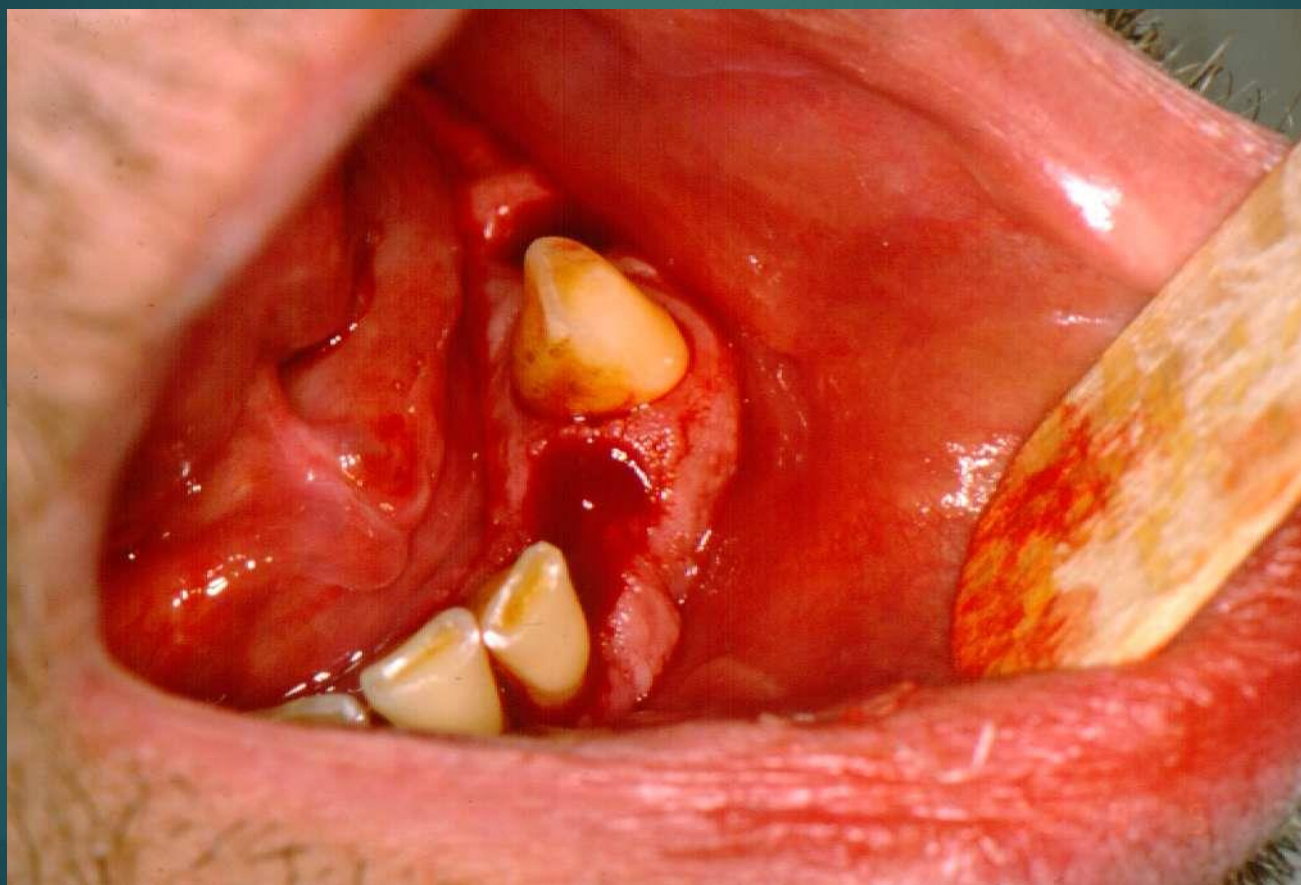


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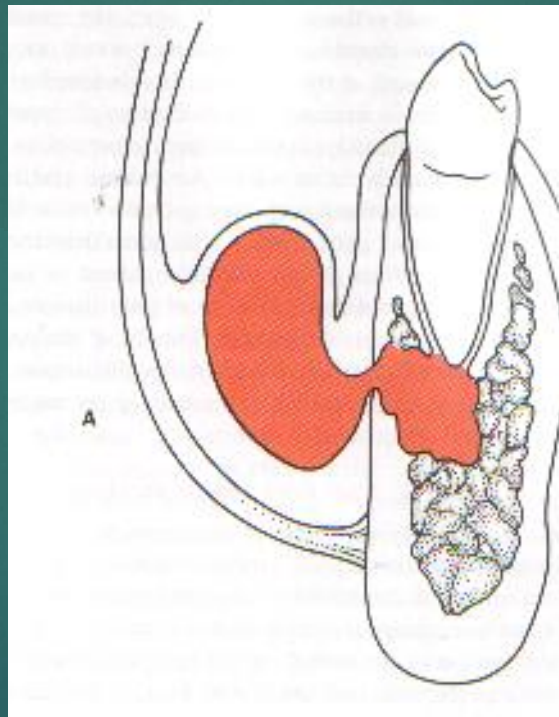




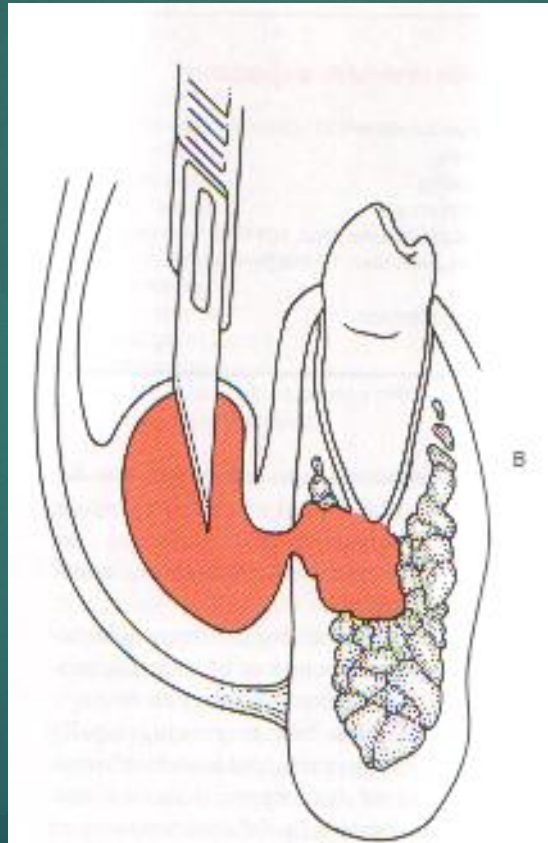
Therapy of abscesses - Root canal treatment of inflammed tooth + intraoral incision



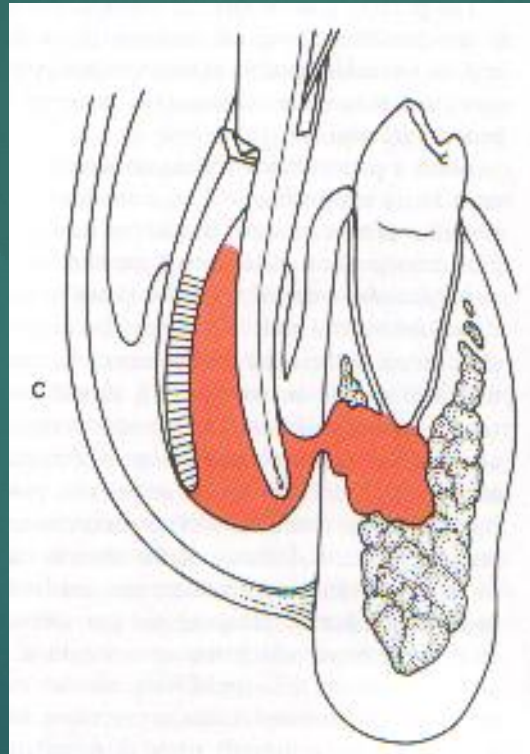
Intraoral incision I.



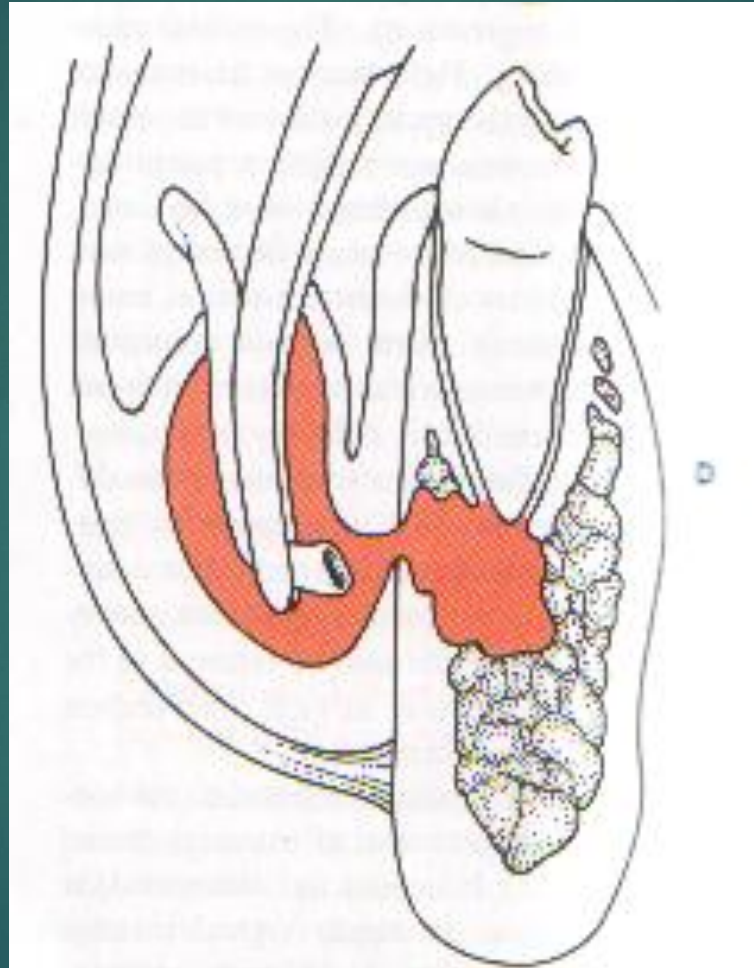
Intraoral incision II.

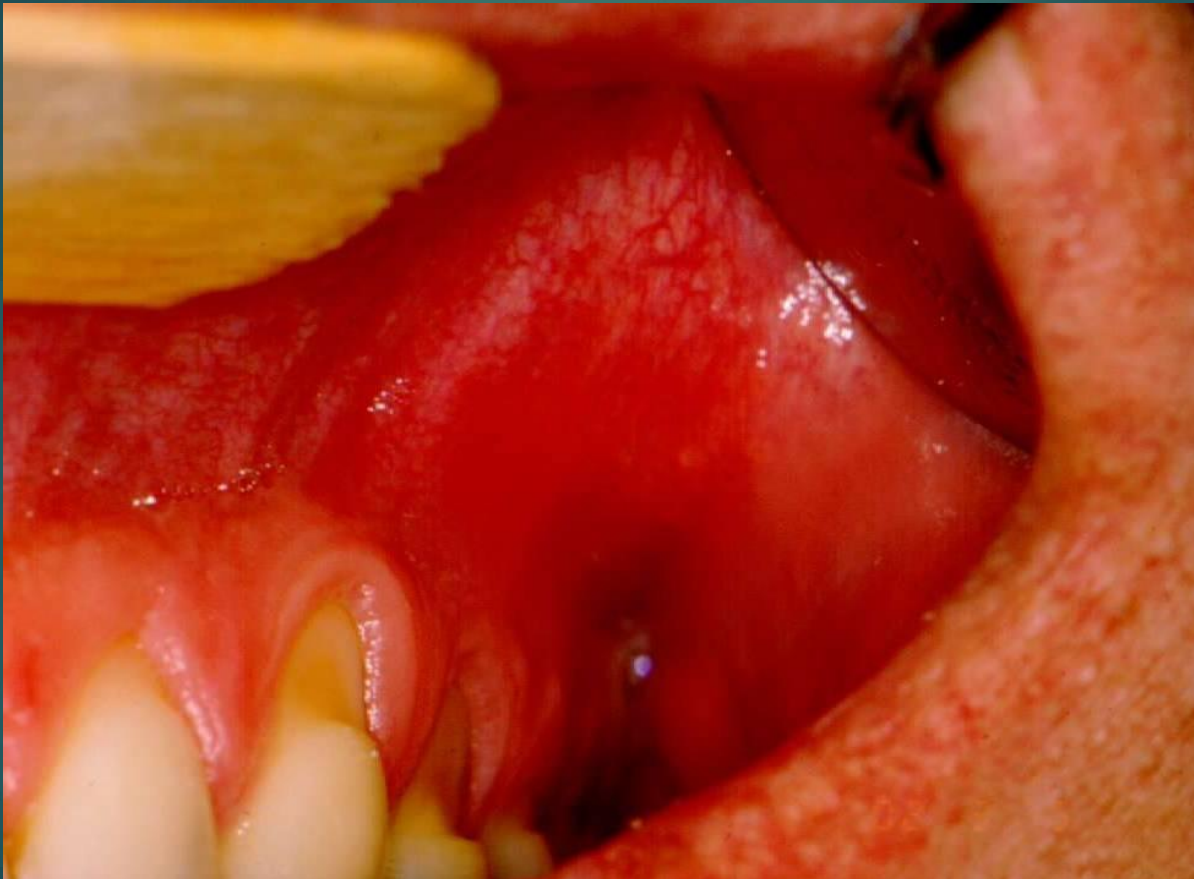


Intraoral incision III.

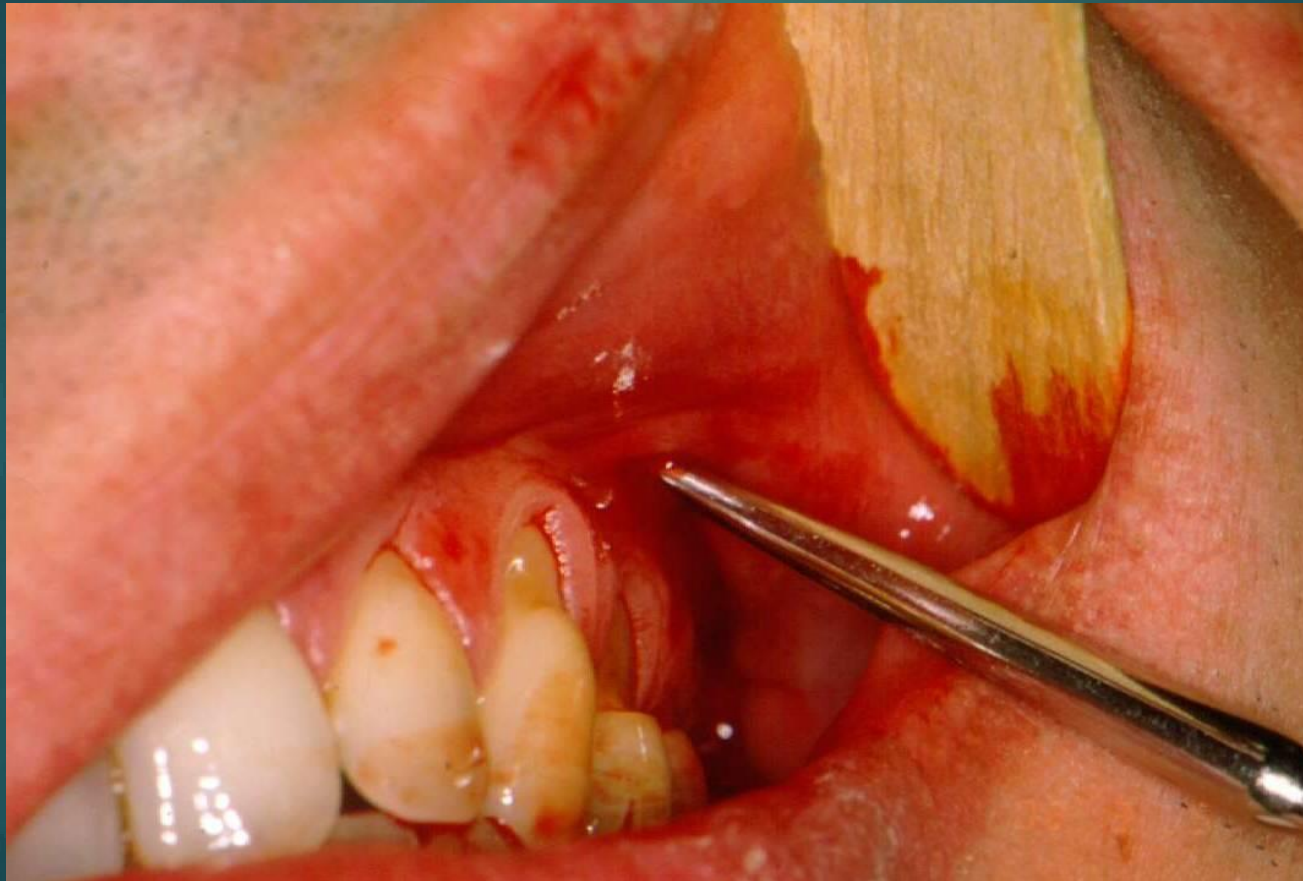


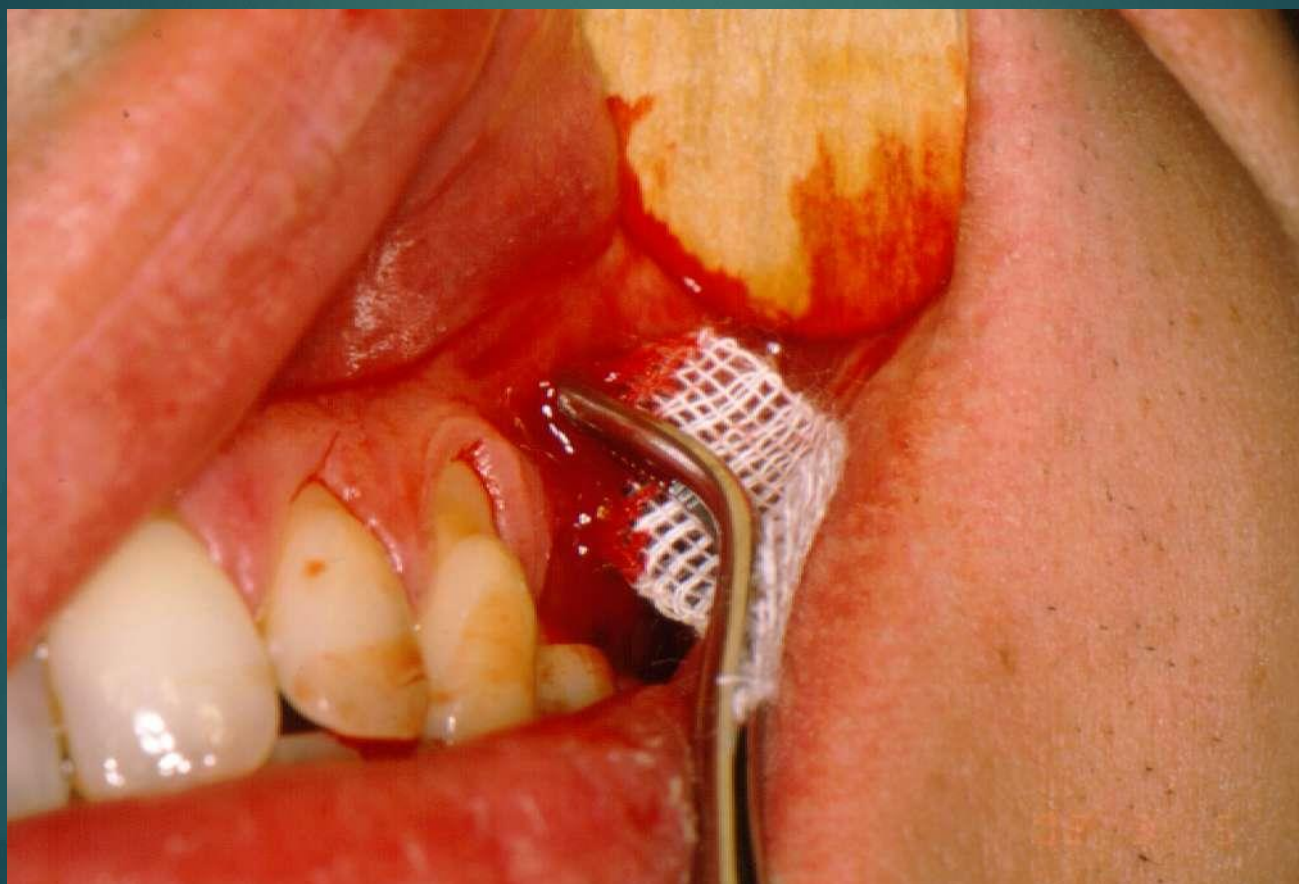
Intraoral incision IV.





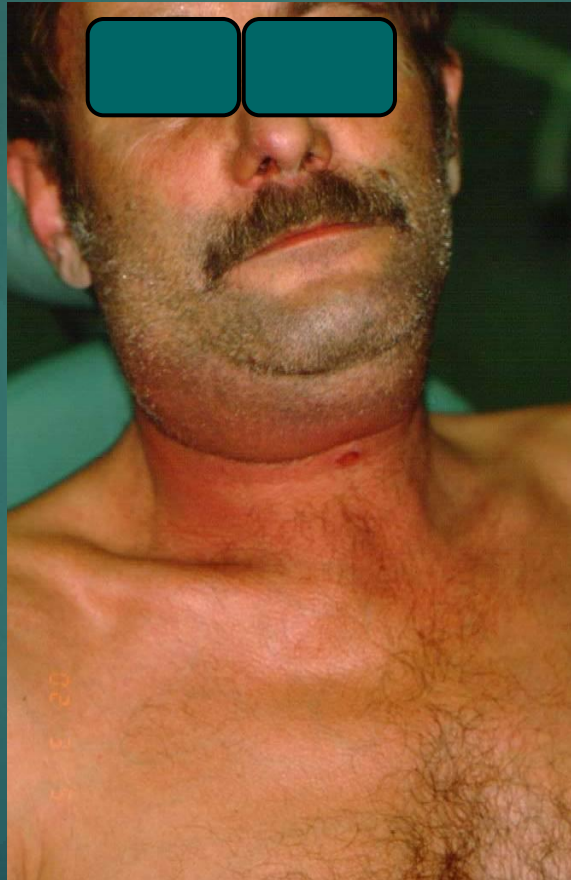








Therapy of abscesses - Extraction of inflammed tooth + extraoral incision





Extraoral incision















Abscess without treatment (delayed)







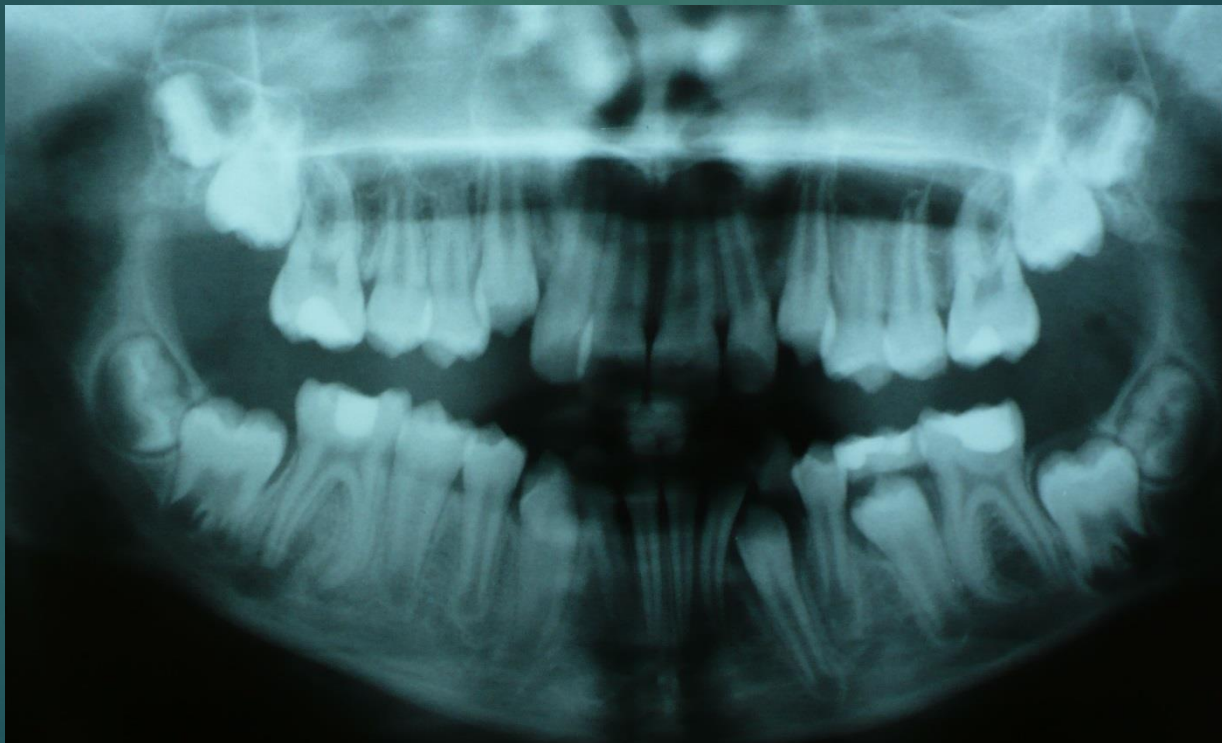






Sinus tract on the skin I.







Sinus tract on the skin II.





Sinus tract on the skin III.







Cellulitis (Phlegmone)

- ▶ Rapidly progradiate inflammation
- ▶ Infrequent
- ▶ Ethiopathogenesis
 - similar to other odontogenic infections
 - compromised immune system: alcohol, after a serious disease, cahexia, depressive state, homeless, (anabolic) steroid treatment...

Cellulitis (Phlegmone)

► Features:

-anatomopathological:

tissue necrosis and lysis, putrid sanguino-purulent
greyish fluid

-bacteriological:

strongly virulent, non specific strains,
aerob+anaerob (toxin production)

Cellulitis (Phlegmone)

► Features:

-clinical:

bad general state (failing), pulsus-temperature disharmony

-prognosis:

doubtful, sometimes bad

Cellulitis (Phlegmone)

► Localisation:

- floor of the mouth „Angina Ludovici”
- hemifacial -retro-,parapharyngeal
- infratemporal

Abscess-cellulitis differential diagnose

	Abscess	cellulitis
General state	Good or week	Bad
Temperature	Moderate fever	Subfebrile, than high fev.
Pulse	Fast, full	Easily obliterated
Shaking chill	Rare	Frequent
Origin	Caries eff. dis., dentitio diff., fracture of jaws, furuncle	Caries eff. Disease, dentitio diff., furuncle
Localisation	Vestibulum, floor of the mouth, bucca, ...	Floor of the mouth, parotid or temporal region
Extension	Circumscribed	Diffuse, no border
Pressure sensitivity	On the place of absc	Diffuse
Oedema	Marked, but circumscrib.	Diffuse, no sharp border

Abscess-cellulitis differential diagnose

	Abscess	cellulitis
Lymphnodes	Enlarged, pressure sensitive	No touchable (because of oedema)
Pain	Med strong or strong	Med strong or strong
Fluctuation	Exist	Usually no
Incision finding	Thick, yellow pus	Thin greenish-dirty serous
Inflammation	Circumscribed	Seroupurulent, infiltrative, necrotic
Electrolytes	Normal	Pathological
Prognosis	Favourable	Doubtful or bad

Cellulitis (Phlegmone)

- ▶ Therapy:

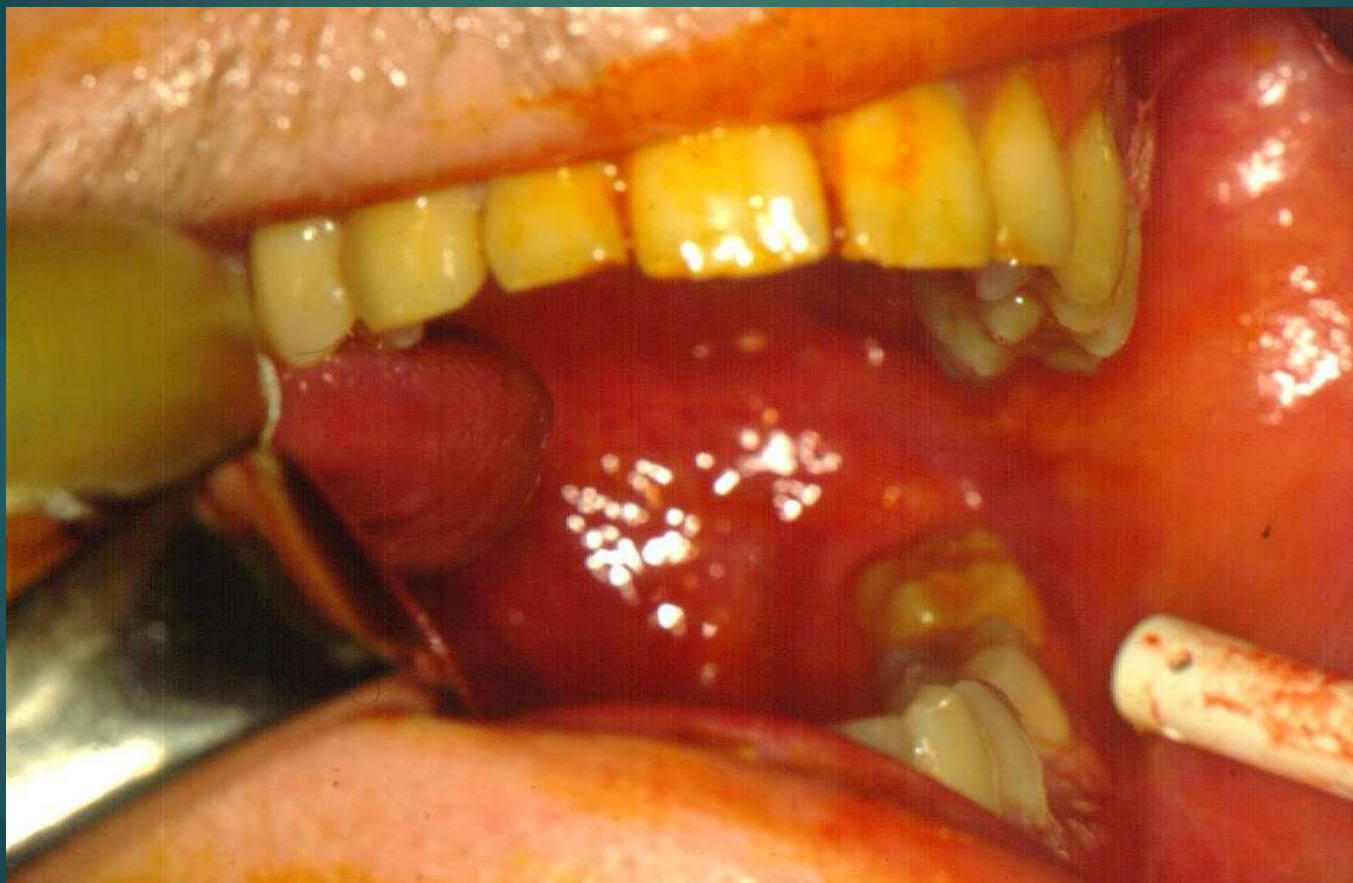
- Incision (wide, multiple)

- drainage

- antibiotics (i.v., according sensitivity test)

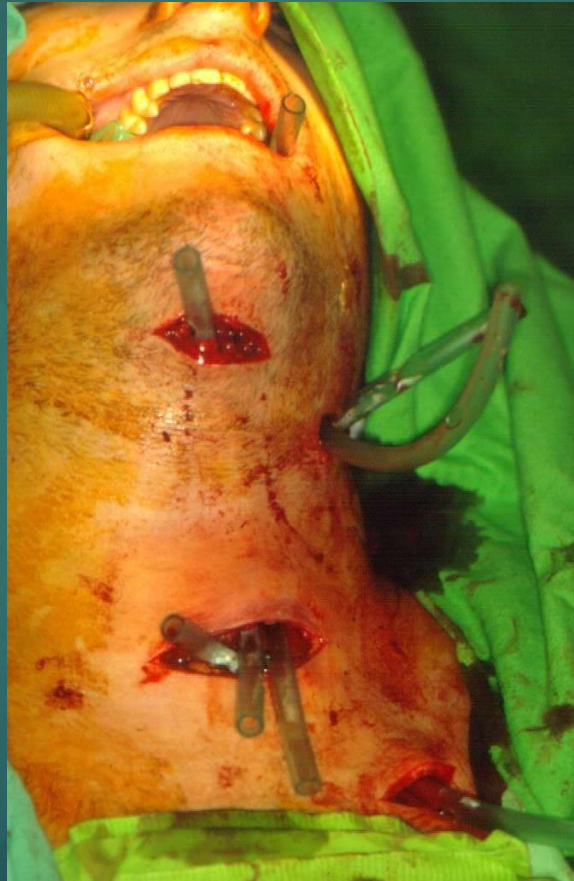
- at inpatient wards













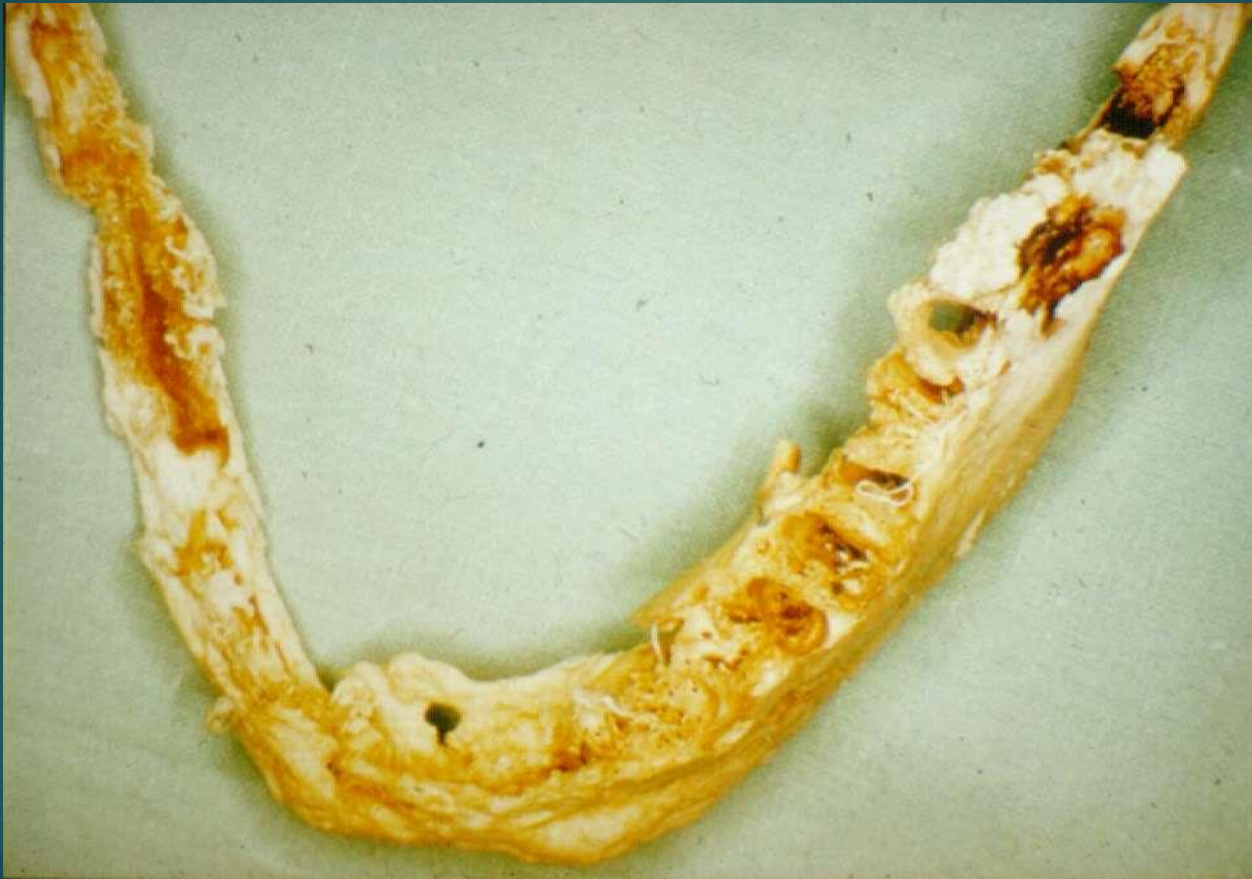
Osteomyelitis

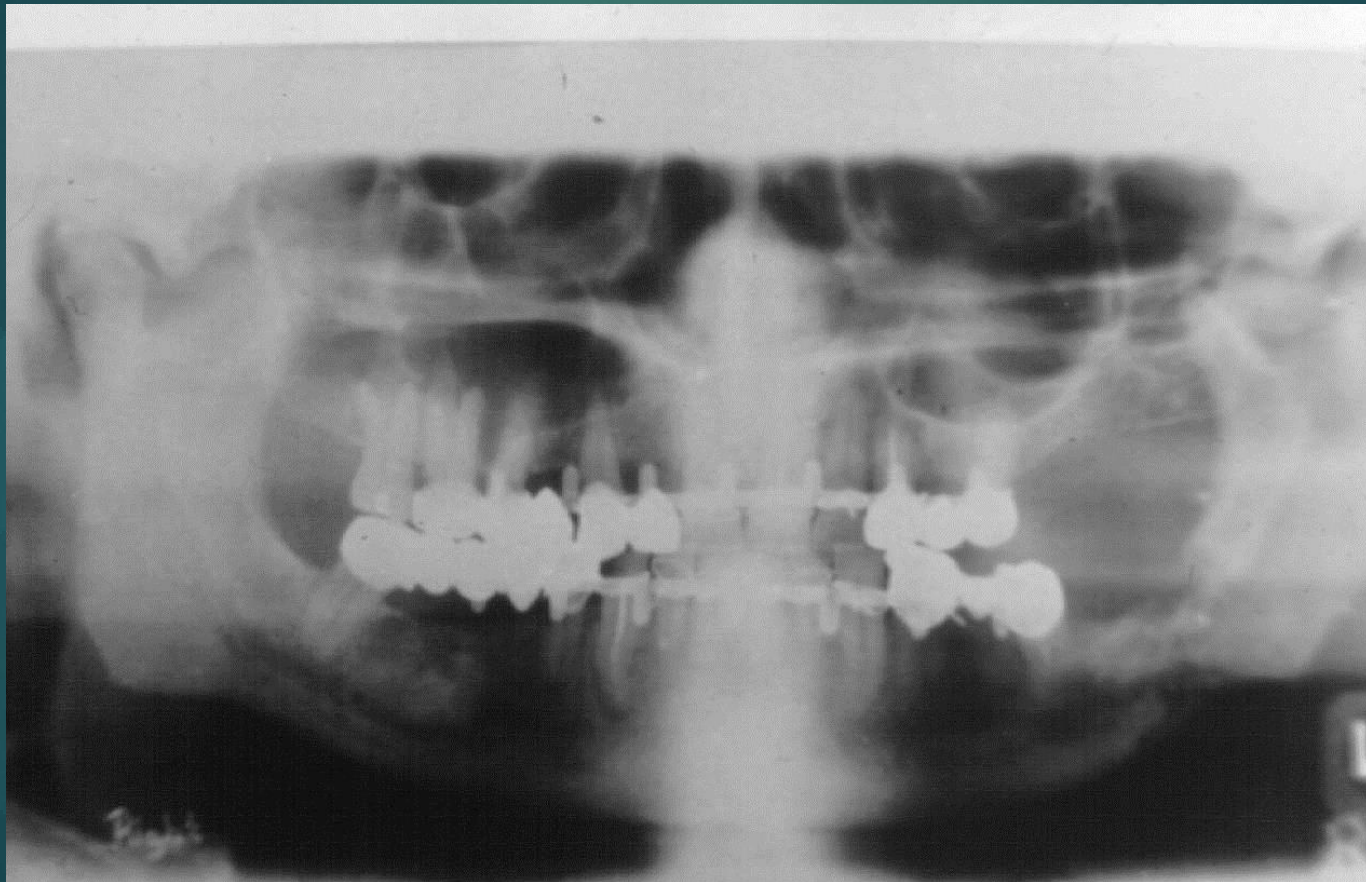
- ▶ Origin (90% dental)
 - ▶ Exogenic
 - ▶ odontogenic (pulpal, periodontal)
 - ▶ traumatogenic
 - ▶ Endogenic
 - ▶ In childhood (scarlet fever, measles)
- ▶ Side effect of medical treatment:
Osteoradionecrosis
Osteonecrosis

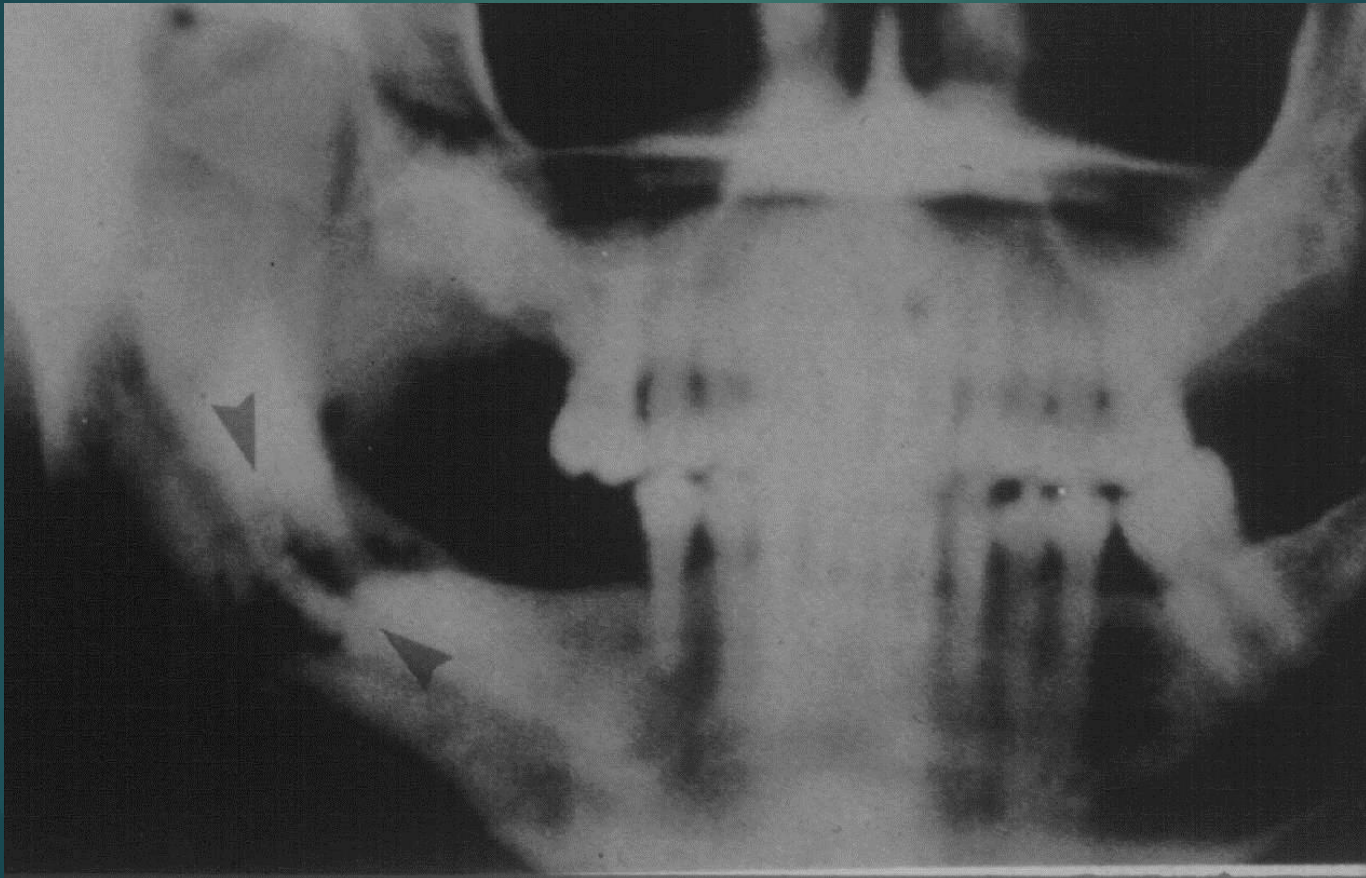
Osteomyelitis

- ▶ **Acute** (extraction+ antibiotics)
- ▶ **Subacute** (antibiotics+ roboration)
- ▶ **Chronic**
 - purulent** (removal of sequestered bone fragments, excochleation, bone substitution, antibiotics)
 - sclerotisans** -focal
 - diffuse
- ▶ Osteoradionecrosis (PREVENTION !)
- ▶ Osteonecrosis (PREVENTION !)



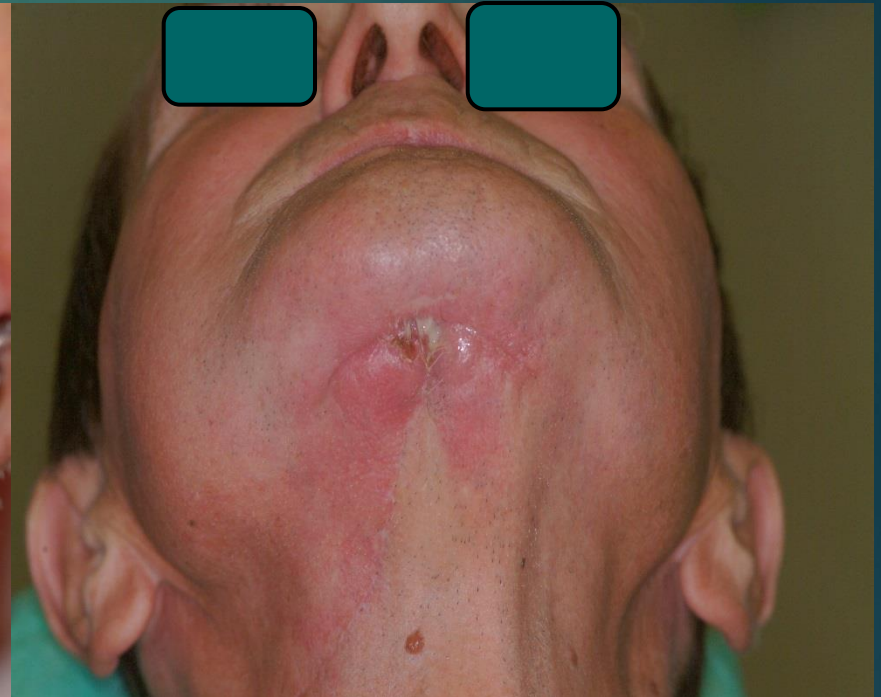








Side effect of medical treatment- Osteonecrosis
Bisphosphonate administration - for different bone
disorders (tumours, osteoporosis, metabolic
disorders)





Focal diseases

Primer infection → secondary
disease

(far from the primary infection)

Dental focus

Primary infection:

- ▶ Tonsil
- ▶ Paranasal sinuses
- ▶ Chronic infections in the genital tract (females-adenexum, males-prostate)
- ▶ Cholecystitis
- ▶ **Dental:**
 - ▶ Diagnosis: Radiographs necessary (every affected teeth + site of extracted teeth, except intact teeth)
 - ▶ Periapical region (e.g.. chr. apical periodontitis, incomplete root canal filling, different types of cysts, (e.g. radicular, residual, follicular), relict root)
 - ▶ Partially erupted or impacted teeth (except completely covered by bone)
 - ▶ Periodontal region

Dental focus

Primary infection:

▶ Dental:

Diagnosis: Radiographs necessary (every affected teeth +site of extracted teeth, except intact teeth)

▶ **Chronic infections of Periapical region** (e.g.. chr. apical periodontitis, incomplete root canal filling, **different types of cysts**, (e.g. radicular, residual, follicular), **relict root**)

▶ **Partially erupted or impacted teeth**

(except: teeth covered by bone, completely)

▶ **Periodontal inflammations**

Secondary diseases

- ▶ 1. Internal diseases: carditis, nephritis
- ▶ 2. Rheumatologic: polyarthritis
- ▶ 3. Ophthalmologic: iritis, iridocyclitis, uveitis
- ▶ 4. Dermatological: dishydrosis, alopecia areata, eczema
- ▶ 5. Neurological: neuritis

Symptoms of secondary disease

- ▶ Objective symptoms (mild)
 - ▶ Elevated temperature
 - ▶ tachycardia
 - ▶ Leukocytosis, monocytosis
 - ▶ Shift to the left in blood counts
 - ▶ Elevated sedimentation

Symptoms of secondary disease

- ▶ General, subjective symptoms:

- ▶ Faintness
- ▶ Dysthymia
- ▶ Tiredness
- ▶ Muscle pain
- ▶ Headache
- ▶ Anorexia
- ▶ Neuralgic, rheumatic pain

Therapy of dental foci

- ▶ Therapy: Root canal filling,
Root canal filling + apicectomy,
curettage,
extraction

periodontal treatment