




Odontogenic infections of the mouth and face

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- An odontogenic infection is an infection that originates within a tooth or in the closely surrounding tissues. The most common causes for odontogenic infection to be established are dental caries, deep fillings, failed root canal treatments, periodontal disease, and pericoronitis. Odontogenic infection starts as localised infection and may remain localised to the region where it started, or spread into adjacent or distant areas.



ATTENTION

- ❑ Pus is a **thick fluid containing dead tissue, cells, and bacteria.**
- ❑ pus can be many colors, including white, yellow, green, and brown.

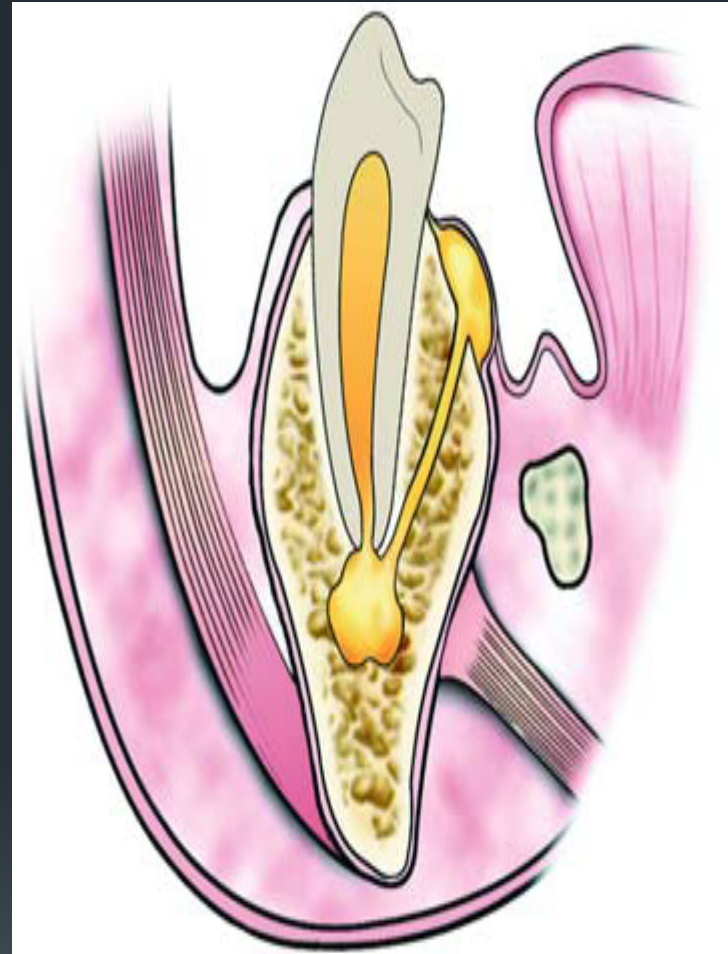


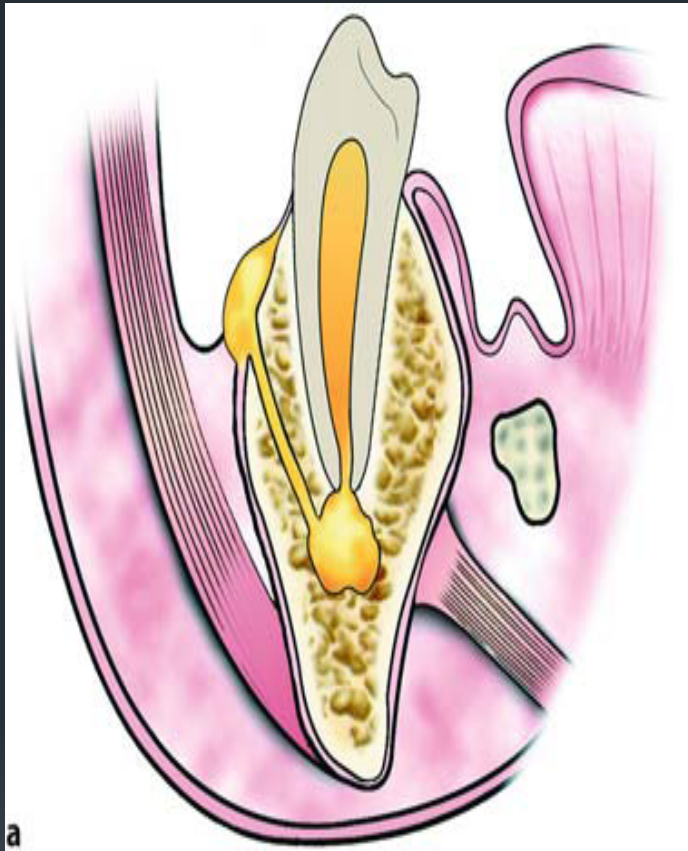
ATTENTION

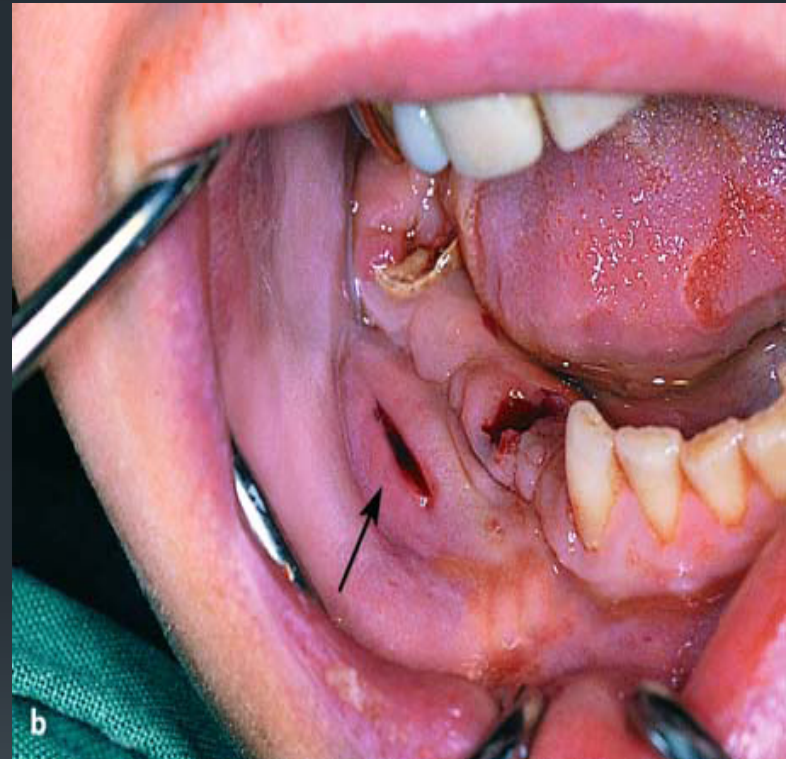
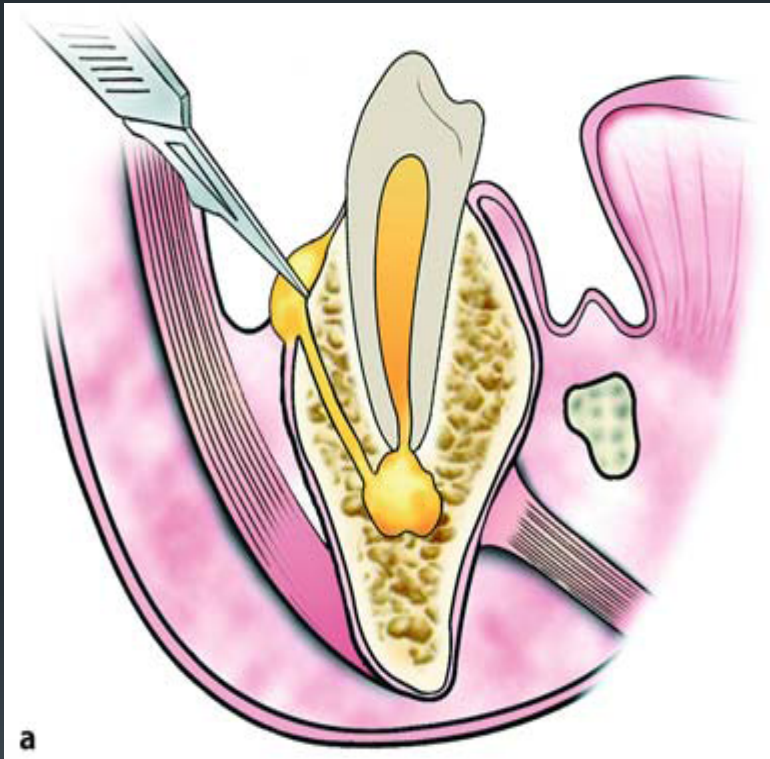
- An abscess is a collection of pus that has built up within the tissue of the body.

PERIAPICAL (DENTOALVEOLAR) ABSCESS

- Sometimes, a non-vital pulp is **asymptomatic**, but, if untreated, these may produce intermittent pain in periods of acute inflammation and persist as chronic inflammation with periods of exacerbation of symptoms. However, infection may eventually develop into an acute periapical infection with abscess formation.
- In an abscess, bacteria cause localised tissue necrosis, and pus forms by the action of neutrophil proteolytic enzymes. The process is localised by granulation tissue forming the abscess wall. The surrounding soft tissues become oedematous with inflammatory exudate. Once an apical abscess is established, it is unlikely to resolve spontaneously.









Fascial tissue spaces

These are potential spaces between tissue planes that can fill up with pus—the opening of planes aided by enzymatic tissue lysis caused by pathogenic bacteria.

FASCIAL OR TISSUE SPACE INFECTIONS

- ❑ When pus from an apical abscess or pericoronitis breaks out into soft tissue, its path is guided by muscle attachments and fascia.
- ❑ These can divert the path of drainage away from the mouth into the tissues of the face, where pus and spreading infection can localise in the ‘fascial spaces’. Anatomical descriptions of these spaces imply that fascia is a well-organised fibrous sheet dividing the face and neck into defined compartments and spaces.
- ❑ The fascial spaces are only **potential spaces** enlarged by accumulation of exudate or pus.

Sign and symptoms:

1. Severe pain.
2. Swelling.
3. Discharge.
4. Swinging pyrexia.
5. Tachycardia.
6. raised white cell count.

Later:

1. drooling.
2. difficulty breathing or speaking;
3. severe trismus.
4. stridor (inspiratory wheeze)
5. Death by sepsis/ respiratory arrest/ intracranial or intrathoracic complications.

■ *Factors Associated with Immune System Compromise*

- A. Diabetes
- B. Steroid therapy
- C. Organ transplants
- D. Malignancy
- E. Chemotherapy
- F. Chronic renal disease
- G. Malnutrition
- H. Alcoholism
- I. End-stage AIDS





- **ATTENTION**

Cellulitis is a an infection of the deep layer of skin

FACIAL CELLULITIS

- ❖ The great majority of fascial space infections are in the form of cellulitis in which, unlike a localised abscess, bacteria spread through the soft tissues .Cellulitis causes gross inflammatory exudate and tissue oedema, associated with fever and toxemia.
- ❖ The characteristic features are diffuse swelling, pain, fever and malaise. The swelling is tense and tender, with a characteristic board-like firmness.



Ludwig's angina

- Ludwig's angina is a severe form of cellulitis that usually arises from the lower molars. It involves the sublingual and submandibular spaces bilaterally, almost simultaneously, and readily spreads into the lateral pharyngeal and pterygoid spaces and can extend into the mediastinum.
- . The main features are rapidly spreading sublingual and submandibular cellulitis with painful, brawny swelling of the upper part of the neck and the floor of the mouth on both sides
With involvement of the parapharyngeal space
- the swelling tracks down the neck and oedema can quickly spread to the glottis ,Swallowing and opening the mouth become difficult, and the tongue may be pushed up against the soft palate. Oral obstruction or oedema of the glottis causes worsening respiratory obstruction



Management



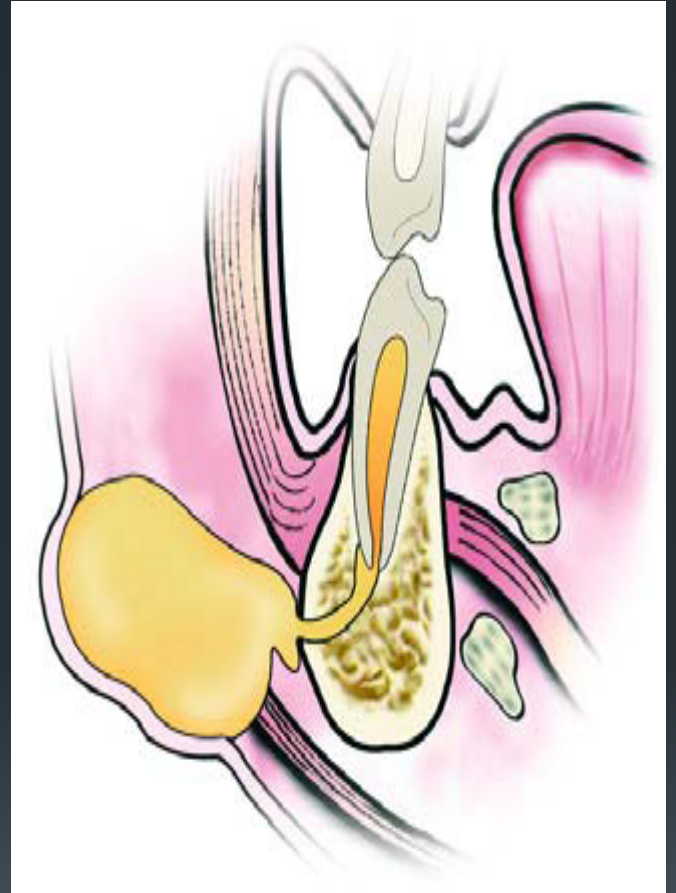
1. The principles of treatment for cellulitis are to provide immediate aggressive antibiotic treatment and to remove the causative tooth .
2. Drainage plays little role in treatment of pure cellulitis because there is no collection of pus. However, when there is potential compromise of the airway or a suggestion that pus may be localizing, then drains may be placed to relieve tissue tension. A microbiological sample can be obtained at the same time.
3. In Ludwig's angina, or when the airway is compromised by any infection, the main requirements are immediate admission to hospital, securing the airway by tracheostomy if necessary.

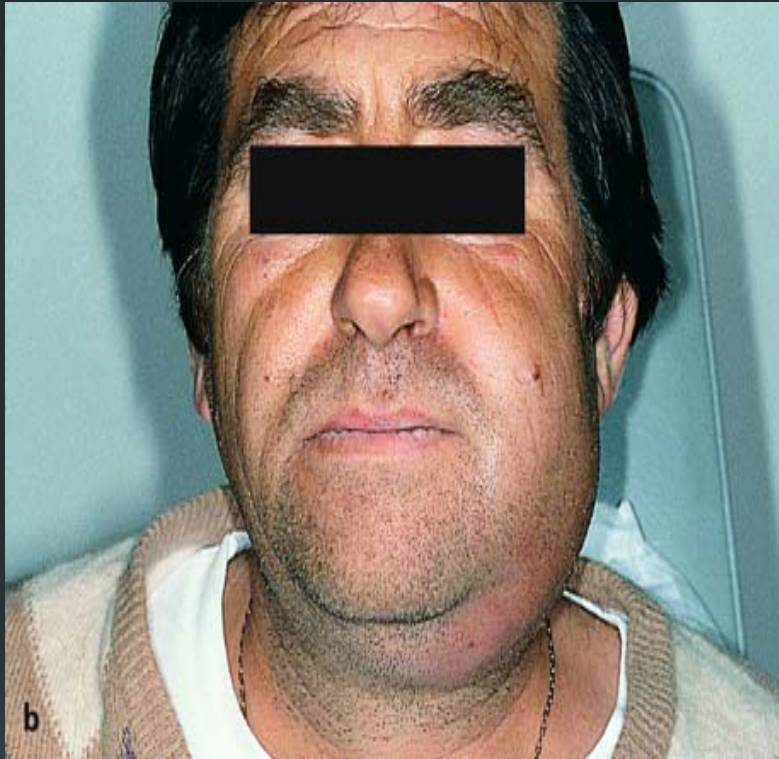
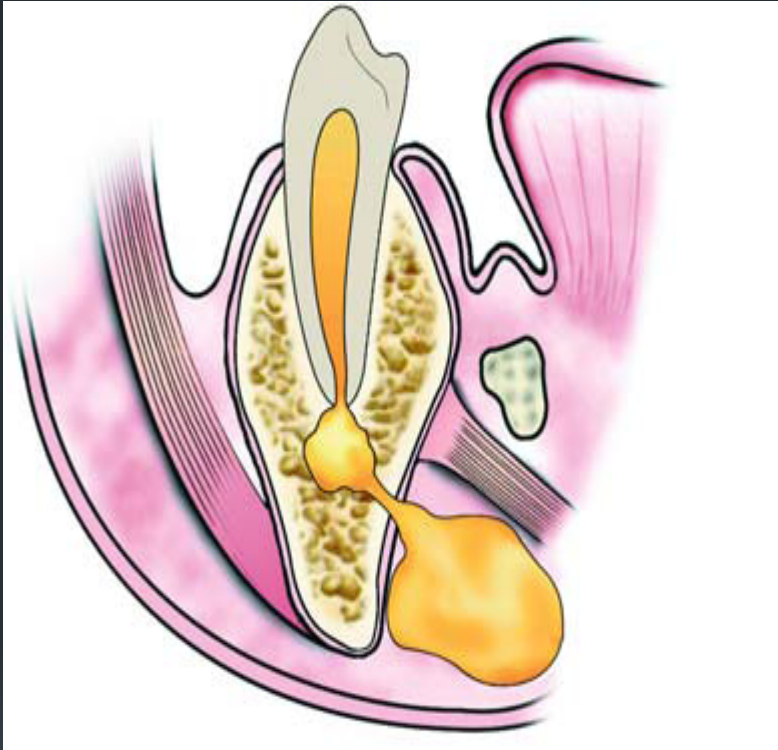
FACIAL ABSCESS

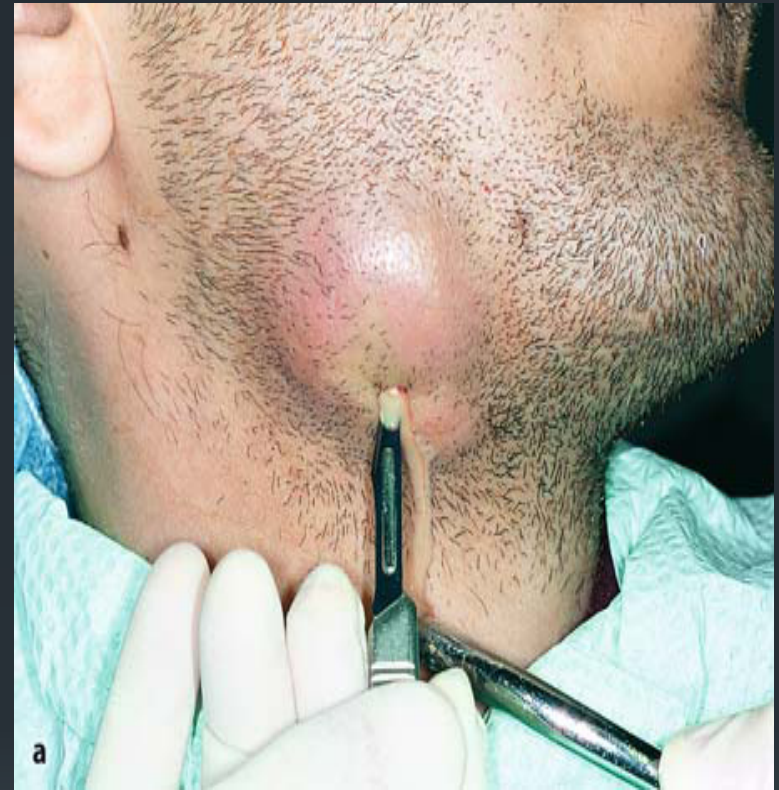
- pus from an apical abscess or pericoronitis may localise in the tissues (facial space-tissue spaces) to form a discrete abscess rather than spreading. Systemic signs are less marked inflammation and swelling less extensive in abscess than in cellulitis.
- The principles of management of abscess are the same as for cellulitis, except that early surgical drainage of pus is essential (incision & drainage/S with triple Abs.

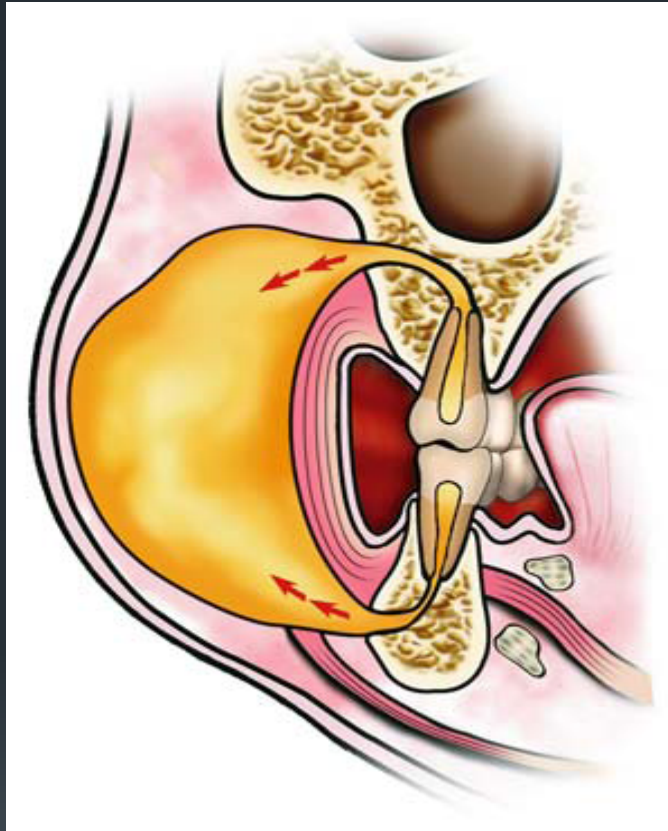
Tissue spaces commonly involved by dental infection

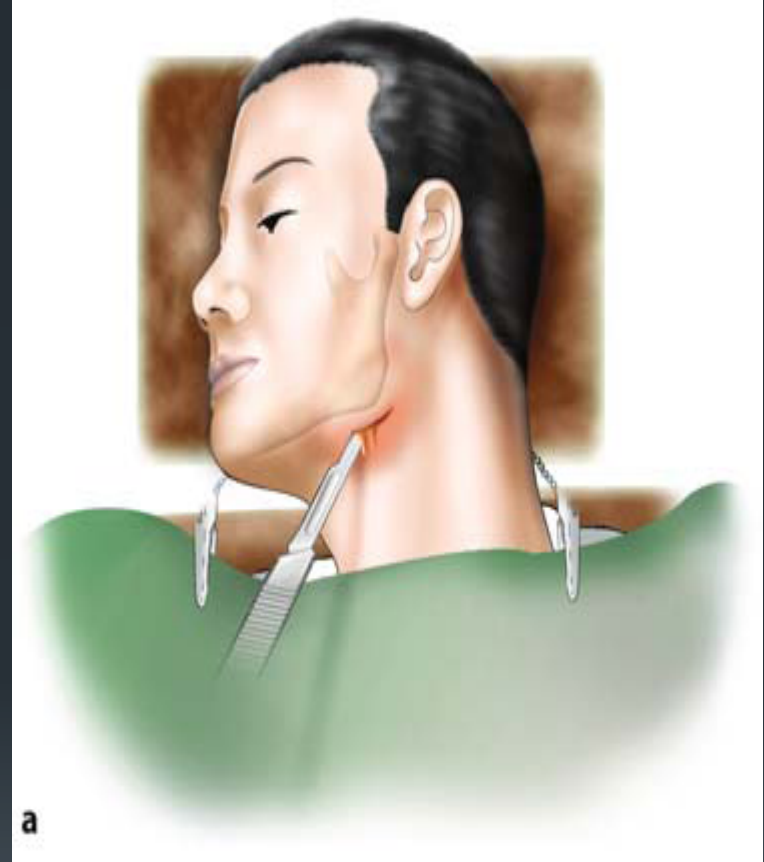
1. Submental space between mylohyoid and the skin, platysma and investing layer of fascia.
2. Submandibular Between mylohyoid, and the skin, platysma and investing layer of fascia and between the hyoglossus and body of mandible
3. Sublingual Between hyoglossus and the tongue muscles medially and mylohyoid and the body of mandible laterally
4. Buccal Between buccinator muscle and the overlying skin, platysma and fascia. Posteriorly limited by ramus of mandible and masseter.
5. Canine fossa bounded by the muscles of lips and face.
6. Submasseteric Between the lateral surface of the ramus of the mandible and the periosteum with masseter muscle











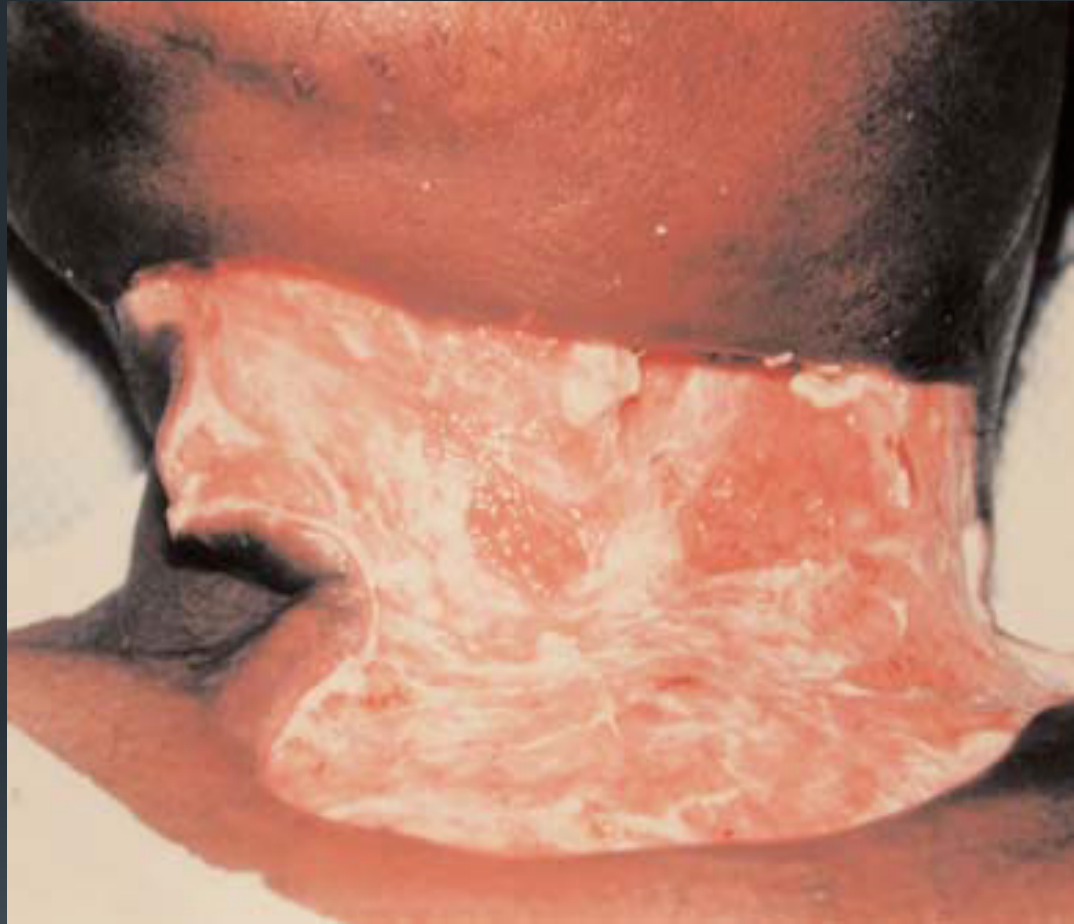




NECROTISING FASCIITIS



- Necrotising fasciitis is an uncommon, rapidly spreading, potentially lethal infection by a poly microbial such as Staph./ Strep/bacteroides & clostridia that causing necrosis and rapid dissolution of subcutaneous tissues and fascia with loss of attachment of the overlying skin. Muscles are relatively spared. Rarely, the infection can have a dental source and may threaten the airway. The treatment is wide surgical debridement & I.V abs



ANTIBIOTIC ABSCESS

- The antibiotic abscess or ‘antibioma’ is an abscess that has been controlled but not eliminated by antibiotic treatment. This may arise after inadequate, often prolonged intermittent antibiotic treatment, particularly at insufficient dose. It may also arise from effective antibiotic treatment provided without ensuring that a collection of pus has been drained. The pus can be rendered sterile or nearly so, and the surrounding granulation tissue matures to dense scar tissue, producing a thick zone of fibrosis around the pus.
- The patient has a hard mass, with puckering of the skin if superficially located, and either mild symptoms of intermittent pain and swelling or no symptoms at all.
- Treatment may be conservative, but resolution takes many months, and it is usually better to excise the whole mass.



THANK YOU.....