

Complications of Sinusitis

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When complications are said to be?

- Complications of sinusitis can be divided into:
- I. LOCAL COMPLICATIONS
- II. ORBITAL COMPLICATIONS
- III. INTRACRANIAL COMPLICATIONS
- IV. DESCENDING INFECTIONS
- V. FOCAL INFECTIONS

I. LOCAL COMPLICATIONS

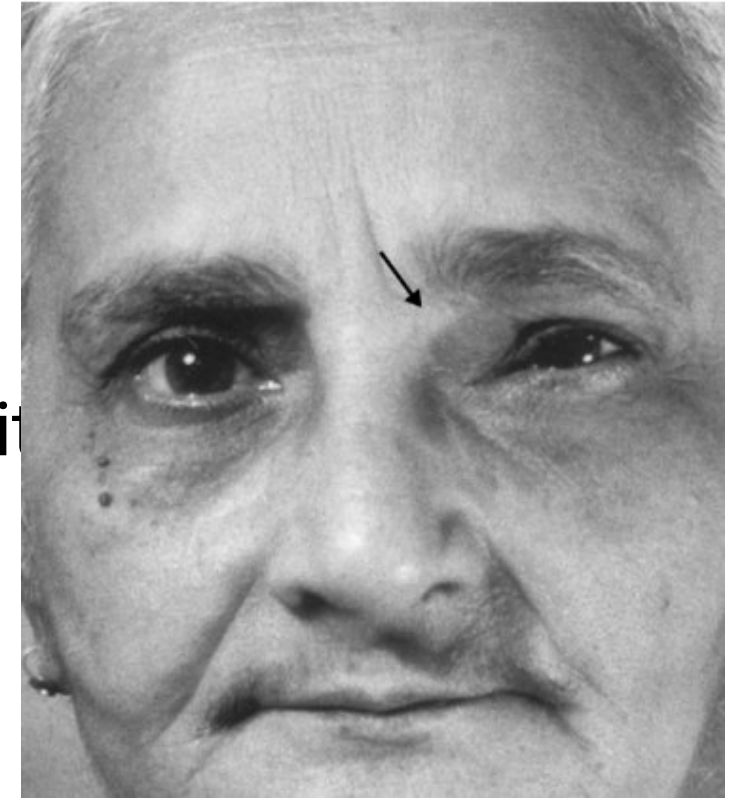
- Divided into:
- A. MUCOCELE AND MUCOUS RETENTION CYSTS
- B. OSTEOMYELITIS

MUCOCELE AND MUCOUS RETENTION CYSTS

- The sinuses commonly affected by mucocoele in the order of frequency are the frontal, ethmoidal, maxillary and sphenoidal.
- There are two views in the genesis of a mucocoele:
- 1. Chronic obstruction to sinus ostium resulting in accumulation of secretions which slowly expand the sinus and destroy its bony walls.
- 2. Cystic dilatation of mucous gland of the sinus mucosa due to obstruction of its duct. In this case, wall of mucocoele is surrounded by normal sinus mucosa. The contents of mucocoele are sterile.

Mucocele of the frontal sinus

- (90%) in the superomedial quadrant of the orbit
- (10%) cystic swelling in the forehead
- **Complaint** are usually mild and may include headache, diplopia and proptosis.
- **Imaging** of the frontal sinus usually reveals clouding of the sinus with loss of scalloped outline
- **Treatment** is frontoethmoidectomy with free drainage of frontal sinus into the middle meatus



Mucocele of ethmoid sinuses

- causes expansion of the medial wall of the orbit, displacing the eyeball forward and laterally. In addition, it may cause a bulge in the middle meatus of nose
- drained by an intranasal operation, uncapping the ethmoidal bulge and establishing free drainage.

sphenoethmoidal mucocele

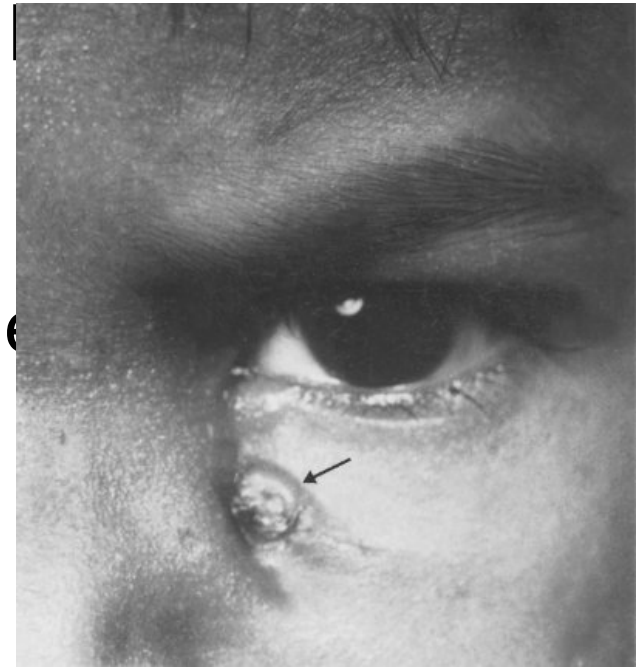
- arises from slow expansion and destruction of sphenoid and posterior ethmoid sinuses.
- Clinical features:
- Superior orbital fissure syndrome (involvement of CN III, IV, VI and ophthalmic division of V), Symptoms consist of deep orbital pain, frontal headache and progressive paralysis of CN VI, III and IV, in that order.
- Orbital apex syndrome. It is superior orbital fissure syndrome with additional involvement of the optic nerve and maxillary division of the trigeminal (V2).

OSTEOMYELITIS

- Osteomyelitis is infection of bone marrow
- Osteomyelitis following sinus infection, involves either the maxilla or the frontal bone

1. Osteomyelitis of the maxilla

- more often seen in infants and children than adults because of the presence of spongy bone in the anterior wall of the maxilla
- Clinical features are erythema, swelling of cheek, oedema of lower lid, purulent nasal discharge and fever, Subperiosteal abscess followed by fistulae may form in infraorbital region alveolus or palate, or in zygoma. Sequestration of bone may occur
- Treatment consists of large doses of antibiotics,
- drainage of any abscess and removal of the sequestra



2. Osteomyelitis of frontal bone

- It is more often seen in adults as frontal sinus is not developed in infants and children
- results from acute infection of frontal sinus either directly or through the venous spread. It can also follow trauma or surgery of frontal sinus in the presence of acute infection.
- Pus may form externally under the periosteum as soft doughy swelling (Pott's puffy tumour), or internally as an extradural abscess.
- Treatment consists of large doses of antibiotics, drainage of abscess and trephining of frontal sinus through its floor



II. ORBITAL COMPLICATIONS

- Orbital complications are the most common complications.
- The proximity of the ethmoid sinuses to the medial orbital wall and relative weak barrier of the lamina papyracea may predispose to extension of infection toward involving the eye.
- The Chandler classification system of orbital complications includes five stages of increasing severity
- 1. preseptal edema: This is only reactionary. There is no erythema or tenderness of the lids which characterises lid abscess. It involves only preseptal space, Eyeball movements and vision are normal. Generally, upper lid is swollen in frontal, lower lid in maxillary, and both upper and lower lids in ethmoid sinusitis.

- 2. Orbital cellulitis. When pus breaks through the periosteum and finds its way into the orbit.
- 3. Subperiosteal abscess. Pus collects outside the bone under the periosteum.
- 4. Orbital abscess. Intraorbital abscess usually forms along lamina papyracea or the floor of frontal sinus.
- 5. cavernous sinus thrombosis.

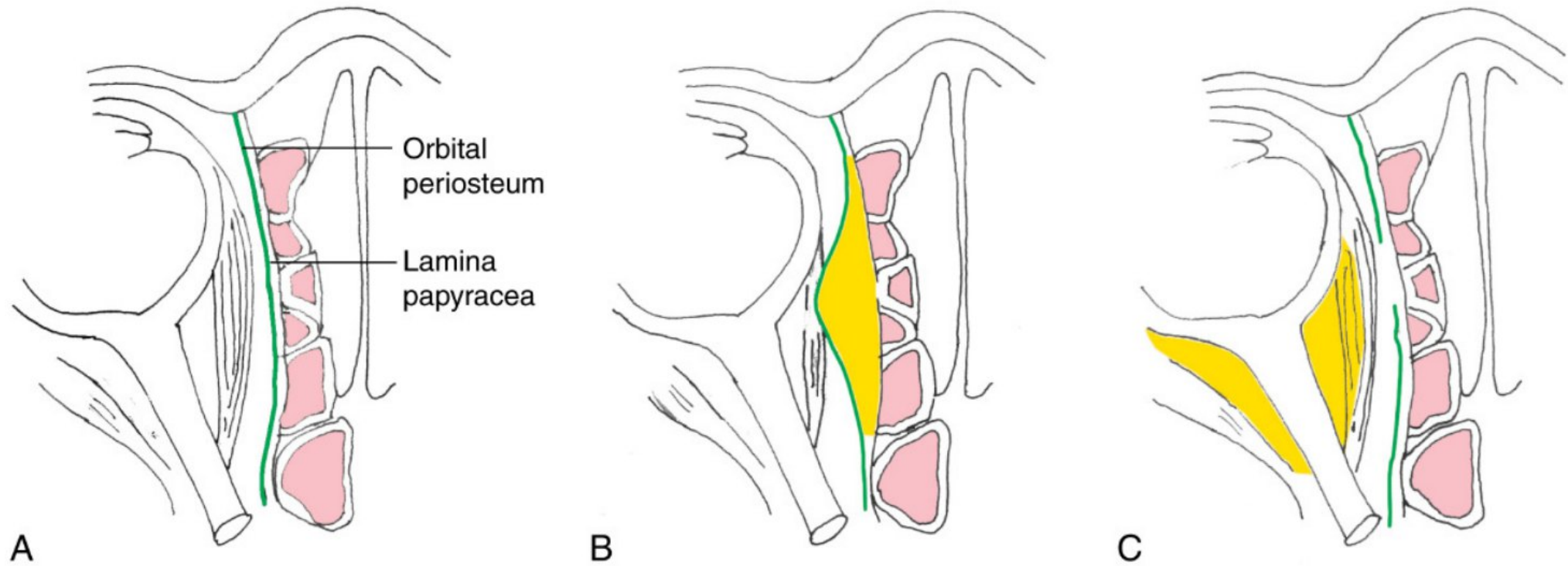


Figure 38.6. Orbital complications of sinusitis. (A) Normal. (B) Subperiosteal abscess. (C) Orbital abscess.

III. INTRACRANIAL COMPLICATIONS

- Frontal, ethmoid and sphenoid sinuses are closely related to anterior cranial fossa and infection from these can cause:
 - 1. Meningitis and encephalitis
 - 2. Extradural abscess
 - 3. Subdural abscess
 - 4. Brain abscess
 - 5. Cavernous sinus thrombosis.

CAVERNOUS SINUS THROMBOSIS

- Aetiology. Infection of paranasal sinuses, particularly those of ethmoid and sphenoid and less commonly the frontal, and orbital complications from these sinus infections
- The valveless nature of the veins connecting the cavernous sinus causes easy spread of infection.
- **Clinical Features:**
- Onset is abrupt with chills and rigors,
- Eyelids get swollen with chemosis and proptosis of eyeball.
- Cranial nerves III, IV and VI get involved individually and sequentially causing total ophthalmoplegia.
- Pupil becomes dilated and fixed
- optic disc shows congestion and oedema with diminution of vision. Sensation in the distribution of V1 is diminished.
- CSF is usually normal.
- Condition needs to be differentiated from orbital cellulitis. CT scan is useful for this.
- **Treatment:** It consists of i.v. antibiotics and attention to the focus of infection, drainage of infected ethmoid or sphenoid sinus.

IV. DESCENDING INFECTIONS

- In suppurative sinusitis, discharge constantly flows into the pharynx and can cause or aggravate:
 - 1. Otitis media
 - 2. Pharyngitis and tonsillitis.
 - 3. Persistent laryngitis and tracheobronchitis.

V. FOCAL INFECTIONS

- The role of sinus infection to act as focus of infection is doubtful. A few conditions such as polyarthrititis, tenosynovitis, fibrositis and certain skin diseases may respond to elimination of infection in the sinuses. However, sinus infection, if present in these cases, is treated on its own merit.

Ask me a question. You won't be
alive to hear the answer. Thank you!

