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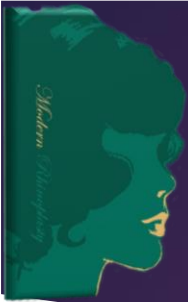


Acute nose and sinus infections

DR MEHDI AHMADI

ENT AND HEAD AND NECK SURGERY

TEHRAN- IRAN



Acute nose and sinus infections

Acute Coryza



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- ▶ The common cold is the result of viral infection but secondary bacterial infection may supervene.
- ▶ It is self-limiting and no treatment is required other than an antipyretic, such as paracetamol.
- ▶ Discourage the prolonged use (more than 5 days) of vasoconstrictor nose drops owing to their harmful effect on the nasal mucosa (rhinitis medicamentosa).
- ▶ Many patients use menthol inhalations, systemic decongestants and a variety of cough linctus preparations, and find these helpful in controlling symptoms, but evidence of any sustained benefit is weak.





Acute nose and sinus infections

Nasal vestibulitis



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- ▶ Both children and adults may be carriers of pyogenic staphylococci, which can produce infection of the skin of the nasal vestibule.
- ▶ The site becomes sore, fissured and crusted. Treatment consists of topical antibiotic/antiseptic ointment.
- ▶ Consider systemic flucloxacillin in more severe cases.
- ▶ In children with persistent vestibulitis look for a nasal foreign body.





Acute nose and sinus infections

Furunculosis

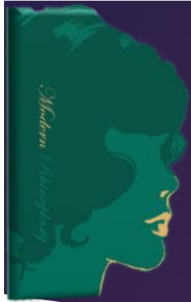


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- ▶ An abscess in a nasal hair follicle is rare but must be treated seriously as it can spread rapidly and lead to cavernous sinus thrombosis and meningitis
- ▶ The tip of the nose becomes red, tense and painful.
- ▶ Give systemic antibiotics without delay.
- ▶ Drainage may be necessary but should be deferred until the patient has had adequate antibiotic treatment for ۲۴ h.
- ▶ In recurrent cases, exclude immunodeficiency.

Furunculosis





Acute sinus infection

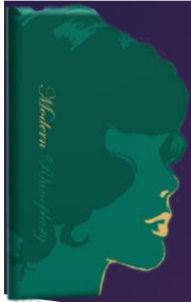
Etiology



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- ▶ Most cases of acute sinusitis are secondary to acute viral illness
- ▶ , e.g. coryza, which causes nasal mucosal edema and interferes with ventilation and mucous clearance from the sinuses.
- ▶ The paranasal sinuses become infected as part of generalized infection of the nose and sinus mucosa – **rhinosinusitis**.
- ▶ Usually more than one sinuses involved (pan-sinusitis)
- ▶ Bacterial infection supervenes causing purulent rhinorrhoea.
- ▶ The causative organisms are usually pyogenic, e.g. *Streptococcus pneumoniae*, *Haemophilus influenzae* or *Staphylococcus pyogenes*.
- ▶ Anaerobes maybe involved especially in dental infections.





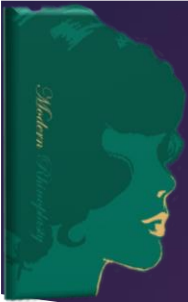
Acute sinus infection

Etiology



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- ▶ Many patients have a background of rhinitis, **often allergic** in origin, which predisposes them to episodes of **ostio meatal complex obstruction** and sinus infection.
- ▶ In about 10% of cases of maxillary sinusitis the infection is **dental** in origin
- ▶ and has spread from the **upper molars or premolars**.
- ▶ Occasionally, infection follows the entry of infected material, e.g. after diving – water is forced through the ostium into the sinus.



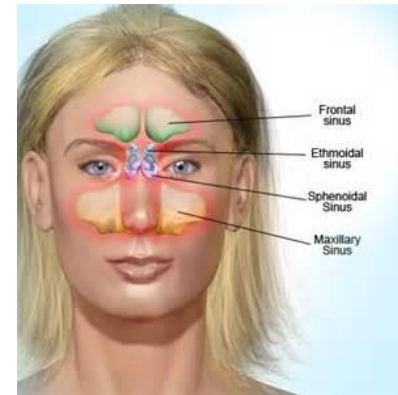
Acute sinus infection

Clinical features



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- ▶ Nasal obstruction.
- ▶ Nasal discharge (rhinorrhoea)
- ▶ A feeling of ‘congestion’ in the nose and face
- ▶ Facial pain.
- ▶ In maxillary sinusitis the pain is mainly over the cheeks;
- ▶ Ethmoidal and frontal sinusitis cause periorbital pain and headache
- ▶ Sphenoidal sinusitis causes severe deep-seated headache.





Acute sinus infection

Clinical features



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- ▶ High temperature(fever)
- ▶ Mucopurulent discharge in the nose
- ▶ Tenderness over the involved sinuses
- ▶ Cheek swelling may indicate a dental abscess.
- ▶ The diagnosis should be made clinically.
- ▶ Acute sinusitis typically resolves but may recur.
- ▶ X-rays are not needed but CT scanning can be very helpful if there are complications.





Acute sinus infection

Treatment



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- ▶ Adequate analgesia
- ▶ Antibiotics. If the nasal discharge is mucopurulent, Cefaclor is a useful first-line
- ▶ Vasoconstrictor nose drops, such as 1% ephedrine or 0.1-0.5% oxymetazoline, will aid drainage of the sinus
- ▶ Systemic vasoconstrictors like pseudoephedrine(pseudogel)
- ▶ Use these sparingly and only for short periods (3-5 days is enough)
- ▶ Surgery: If the ostiomeatal complex is completely obstructed there may be severe pain due to retained pus (empyema)
- ▶ Initial treatment is medical but surgery may be needed

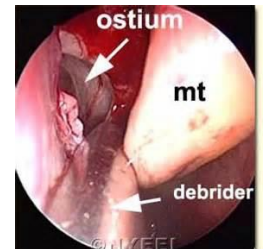
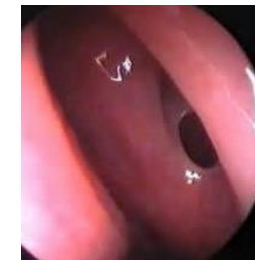


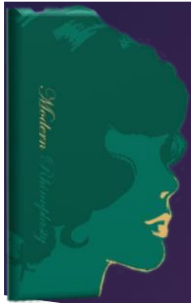
Acute sinus infection

Treatment (Surgery)

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- ▶ Drainage of the sinuses is nowadays by endoscopic surgery of the ostiomeatal area under the middle turbinate
- ▶ functional endoscopic sinus surgery (FESS).
- ▶ Developments in endoscopic instruments now allow inspection of the sinus ostia and interior of the paranasal sinuses
- ▶ Ostial enlargement and removal of polyps and cysts can be performed.
- ▶ The ostiomeatal complex under the middle turbinate is opened up.
- ▶ This allows a more ‘physiological’ drainage of the antrum than was possible before the development of endoscopic endonasal surgery and ‘antral washout’ – insertion of a trochar into the antrum via the nasal cavity with aspiration of the contents of the antrum – is now rarely performed
- ▶ Aspiration of an empyema by whatever means brings dramatic relief
- ▶ **refer immediately if you suspect complications- e.g. severe headache, neurological changes or eye changes**





Acute sinus infection

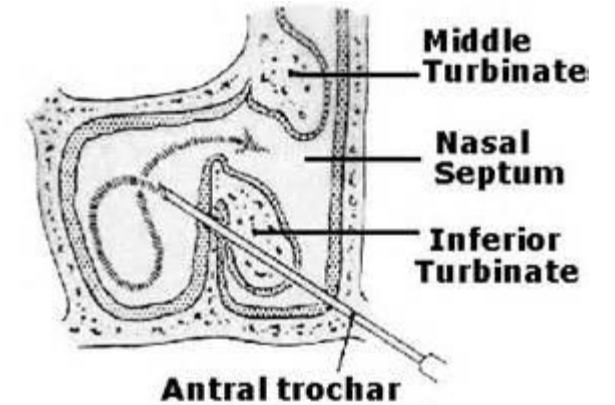
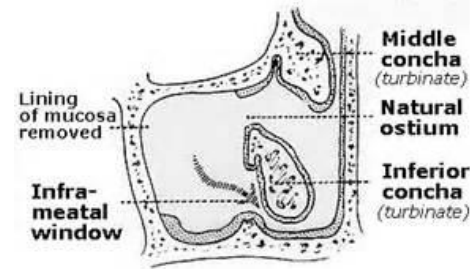
Treatment (Surgery)



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► Maxillary sinus irrigation

► Mucocilliary action of maxillary sinus





Acute sinus infection

Complications



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- Complications may arise if the infection spreads beyond the bony walls of the sinuses
- These are rare in Western communities but still a significant cause of morbidity and mortality worldwide.
- Beware of the patient with sinusitis who develops
- **severe headache, swinging pyrexia or neurological signs**



Acute sinus infection

Complications

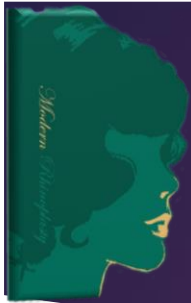
Orbital complications (cellulitis or abscess)

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- ▶ Characterized by marked edema of the eyelids, diplopia, redness and swelling of the conjunctiva (chemosis).
- ▶ Proptosis indicates severe orbital involvement.
- ▶ Commence intravenous antibiotics immediately and ask for an urgent ENT opinion.
- ▶ Resolution usually follows intensive antibiotic therapy but surgical drainage is required urgently if there is any change in vision.
- ▶ Loss of color discrimination is an early sign of impending visual loss.





Acute sinus infection

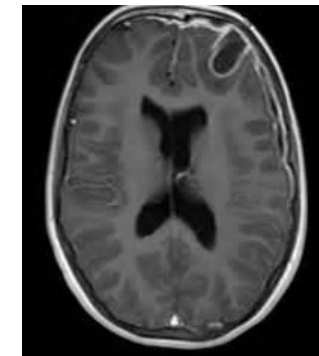
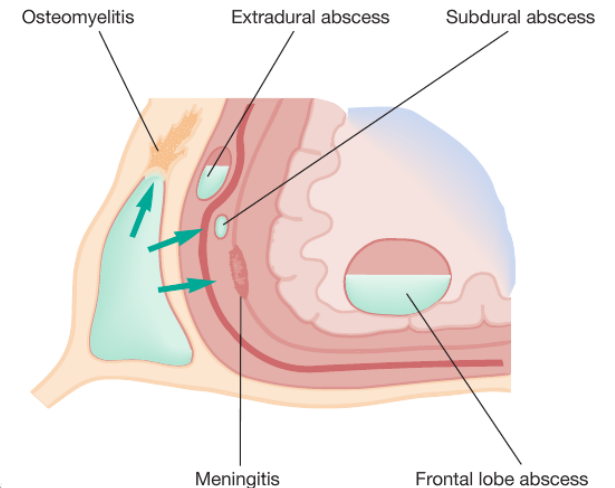
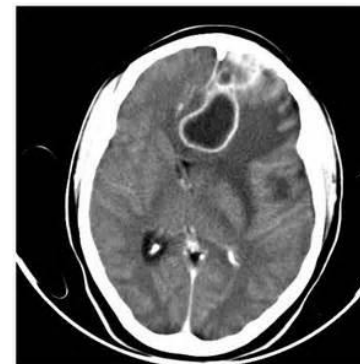
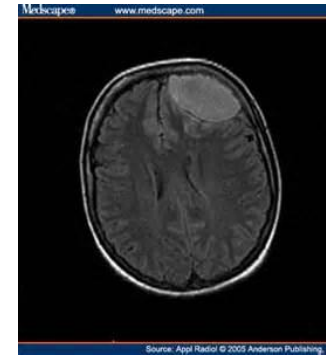
Complications

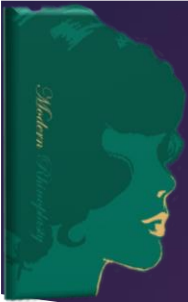
Meningitis, extradural and subdural abscesses



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- ▶ Meningitis, extradural and subdural abscesses
- ▶ may occur and should be treated as neurosurgical emergencies.
- ▶ Cerebral abscess (frontal lobe)
- ▶ Any patient with a history of recent frontal sinus infection headaches or who exhibits any **abnormality of behavior** should be suspected of a frontal lobe abscess.





Acute sinus infection

Complications

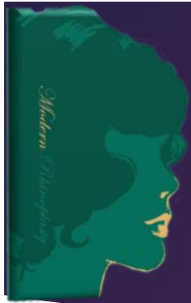
Osteomyelitis of the frontal bone



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- ▶ Osteomyelitis of the frontal bone is characterized by persistent headache and edema of the scalp in the vicinity of the frontal sinus.
- ▶ X-ray signs are late, and by the time they become apparent osteomyelitis is well established.
- ▶ Intensive antibiotic therapy combined with removal of diseased bone is necessary.





Acute sinus infection

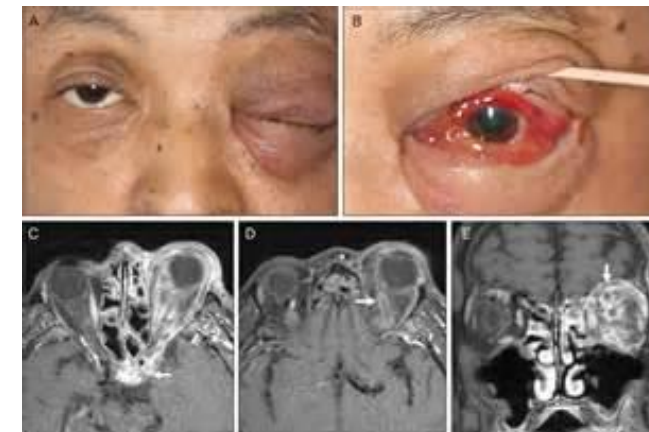
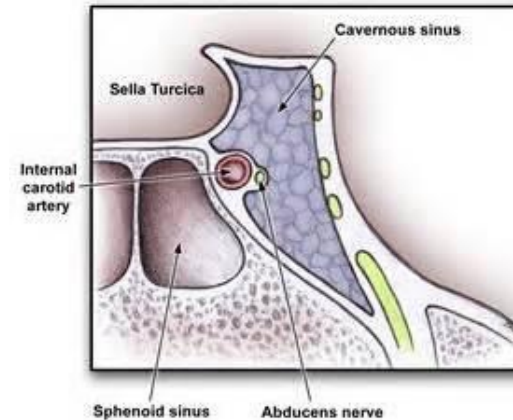
Complications

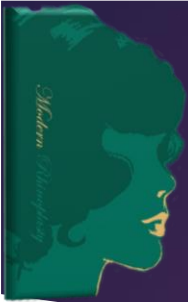
Cavernous sinus thrombosis



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- ▶ Cavernous sinus thrombosis is very rare.
- ▶ Proptosis , chemosis (corneal edema) and ophthalmoplegia characterize this dangerous complication
- ▶ Poor sinus drainage can cause a bony swelling as secretions build up in the obstructed sinus (mucocoele)
- ▶ Treatment is surgical





CLINICAL PRACTICE POINT



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- ▶ Assume a child with a unilateral nasal discharge has a nasal foreign body
- ▶ Most cases of sinusitis resolve but complications can be devastating
- ▶ Beware of the sinusitis patient with severe headache, suspected neurological signs or orbital swelling
- ▶ Many patients suffer repeated misery due to frequent and recurrent episodes of rhinosinusitis.
- ▶ Refer to an ENT surgeon so that anatomical abnormalities, e.g. nasal septal deviations, ostiomeatal complex anomalies, and ciliary and immunological function can be checked.