Acute rhinosinusitis

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ARS is thought to result from bacterial superinfection of virally damaged mucosa. The commonest bacteria involved are S. /uni00A0 pneumoniae , H. influenzae and Moraxella catarrhalis . Upper dental sepsis may also predispose to acute maxillary sinusitis. Patients with maxillary sinusitis have a mucopurulent discharge, facial pain and nasal obstruction. Irritation of the superior alveolar nerve may give rise to referred upper toothache. In ARS nasendoscopy reveals inflamed and swollen nasal mucosa with mucopurulent secretions in the middle meatus. Dental sepsis from anaerobic organisms causes around 10% of cases of maxillary sinusitis. The resultant mucopurulent nasal secretion has a foul taste and smell. Plain sinus radiographs may show a fluid level in the antrum or complete opacity (Figure 51.47). However, plain radiographs are now seldom used and have been superseded by CT scans to investigate ARS. CT scans confirm opacification and mucosal thickening of the maxillary sinus as well as providing anatomical detail prior to endoscopic surgical intervention (Figure 51.48). Acute frontoethmoidal sinusitis can also occur and presents with mucopurulent discharge, facial pain (including frontal headache), nasal congestion and hyposmia. Again, mucopus is seen on endoscopy in the middle meatus and is investigated with CT . - Treatment Penetration of antibiotics into chronically inflamed sinus mucosa is reduced and, therefore, treatment may need to be prolonged. Topical nasal decongestants, such as ephedrine nasal drops, will often encourage the sinus to drain and topi - cal corticosteroids are used to reduce inflammation. Saline douches can also be beneficial. Antral lavage under local or general anaesthesia was previ - ously used to confirm the diagnosis and provided the opportu - nity to obtain samples for bacteriology . Nowadays, pus in the middle meatus can simply be sampled endoscopically in clinic and antral lavage is rarely performed. Endoscopic sinus surgery allo ws a more functional approach to diseases of the paranasal sinuses and enables the drainage pathways of the paranasal

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Frontal sinus sinuses to be opened. Most cases of ARS can be treated con servatively with antibiotics and topical treatment. Surgery is used for those patients unresponsive to medical management or with complications. The majority of patients with ARS who require surger y are treated endoscopically . However, in some cases an open surgical approach may be necessary . Percivall Pott , 1714–1788, surgeon, London, UK. Acute rhinosinusitis /uni25CF /uni25CF /uni25CF /uni25CF Complications Complications of ARS include orbital and intracranial prob - lems. The spread of infection from the sinuses occurs either through diploic veins or directly through bone erosion. This can result in epidural, subdural or cerebral abscesses or in meningitis/encephalitis. Cavernous sinus thrombosis may also r esult and can present with bilateral ptosis, proptosis, retro-ocular pain, ophthalmoplegia, papilloedema and spiking fevers. Orbital complications of ARS are more common. Most often this is related to ethmoid sinus infection (Figure 51.49). An ophthalmology re view is essential because of the threat to vision and intravenous antibiotics covering aerobic and anaer - obic organisms are used. If there are any concerns regard - ing the

eye, including proptosis, chemosis, ophthalmoplegia or reduced visual acuity , then CT with contrast is required (Figure 51.50). If an abscess is identified, this should be drained (endoscopically or open). Summary box 51.13 Complications of acute rhinosinusitis /uni25CF /uni25CF /uni25CF /uni25CF Summary box 51.14 Chandler classification of orbital complications of sinusitis /uni25CF /uni25CF /uni25CF /uni25CF /uni25CF - Osteomyelitis of the frontal bones can also occur as a com - plication of ARS. If the anterior table of the frontal sinus is involved and becomes dehiscent, it can present with significant swelling of the skin of the forehead and a mass – Pott’s pu ff y tumour (Figure 51.51).

Infraorbital rim Infraorbital foramen Air/ /f_l uid level Figure 51.47 Plain radiograph showing the /f_l uid level in the left maxil lary antrum and total opacity of the right antrum. Figure 51.48 Coronal computed tomography scan showing left-sided maxillary sinus opaci /f_i cation due to maxillary sinusitis. The most common causative organisms are S. pneumoniae, H. /uni00A0 in /f_l

uenzae, M. catarrhalis Anaerobic infection of the maxillary sinus may result from dental sepsis Acute infection should be treated with antibiotics, topical decongestants and corticosteroids Endoscopic sinus surgery may be required

Orbital – cellulitis, abscess Orbital infections may threaten sight Intracranial spread may cause meningitis, cerebral abscess or cavernous sinus thrombosis Osteomyelitis of the bones, particularly frontal, may occur I – preseptal cellulitis II – orbital cellulitis III – subperiosteal abscess IV – orbital abscess V – cavernous sinus thrombosis

Figure 51.49 Left periorbital cellulitis complicating acute left ethmoiditis. Figure 51.50 Axial computed tomography scan showing a subperi osteal abscess in the left orbit.

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Revision #1
Created 2025-12-31 15:19:18 UTC by Omar Ayman
Updated 2025-12-31 15:19:18 UTC by Omar Ayman