Project: Ghana Emergency Medicine Collaborative

Document Title: Selected E.N.T. Emergencies Related to Sepsis

Author(s): Jim Holliman (Uniformed Services University), MD, FACEP, 2012

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Selected E.N.T. Emergencies Related to Sepsis

- Jim Holliman, M.D., F.A.C.E.P.
- Program Manager, Afghanistan Health Care Sector Reconstruction Project
- Center for Disaster and Humanitarian Assistance Medicine
- Uniformed Services University
- Bethesda, Maryland, U.S.A.

Selected E.N.T. Emergencies Lecture Outline

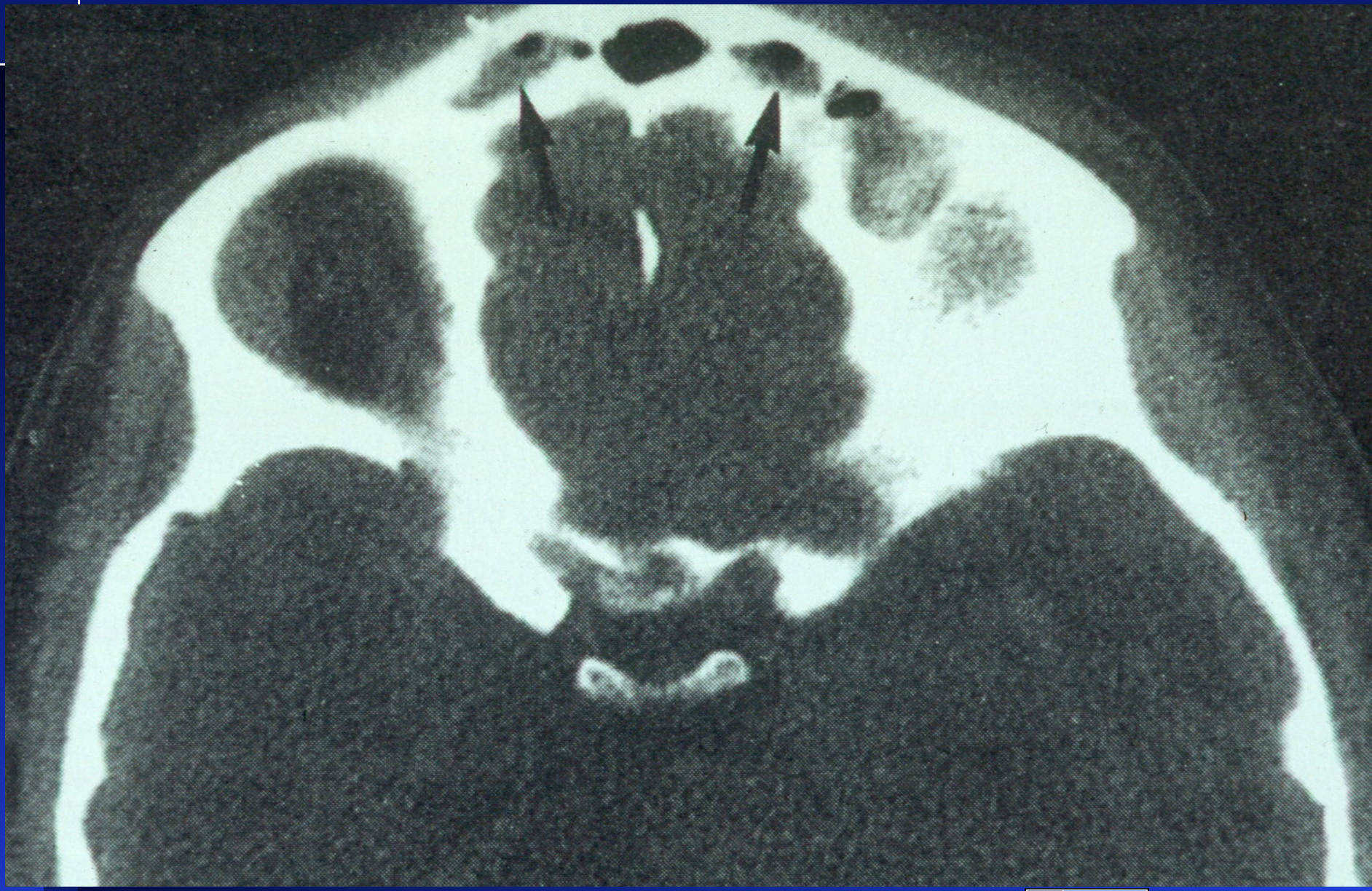
- Complications of acute sinusitis
  - Frontal and orbital abscesses
- Acute mastoiditis
- Acute chondritis
- Mucormycosis
- Peritonsillar abscess
- Retropharyngeal and parapharyngeal abscesses
- Ludwig's angina
- Vincent's Angina
- Acute epiglottitis

Acute Sinusitis Complications

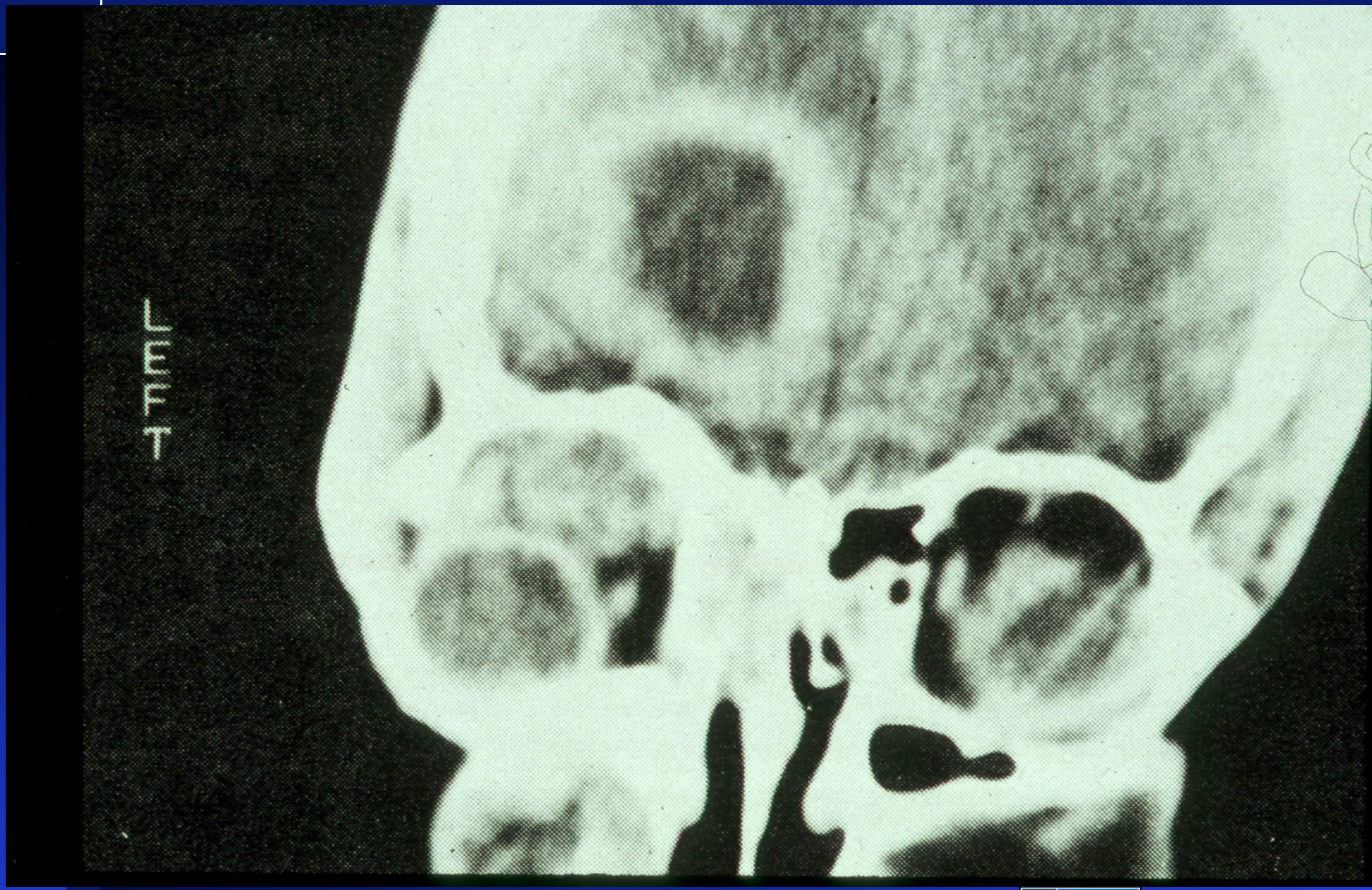
- Frontal or orbital abscess
- Need facial CT scan for Dx
- Need IV antibiotics, hospital admission, and surgical drainage

Signs of Potentially Dangerous Complications of Acute Sinusitis

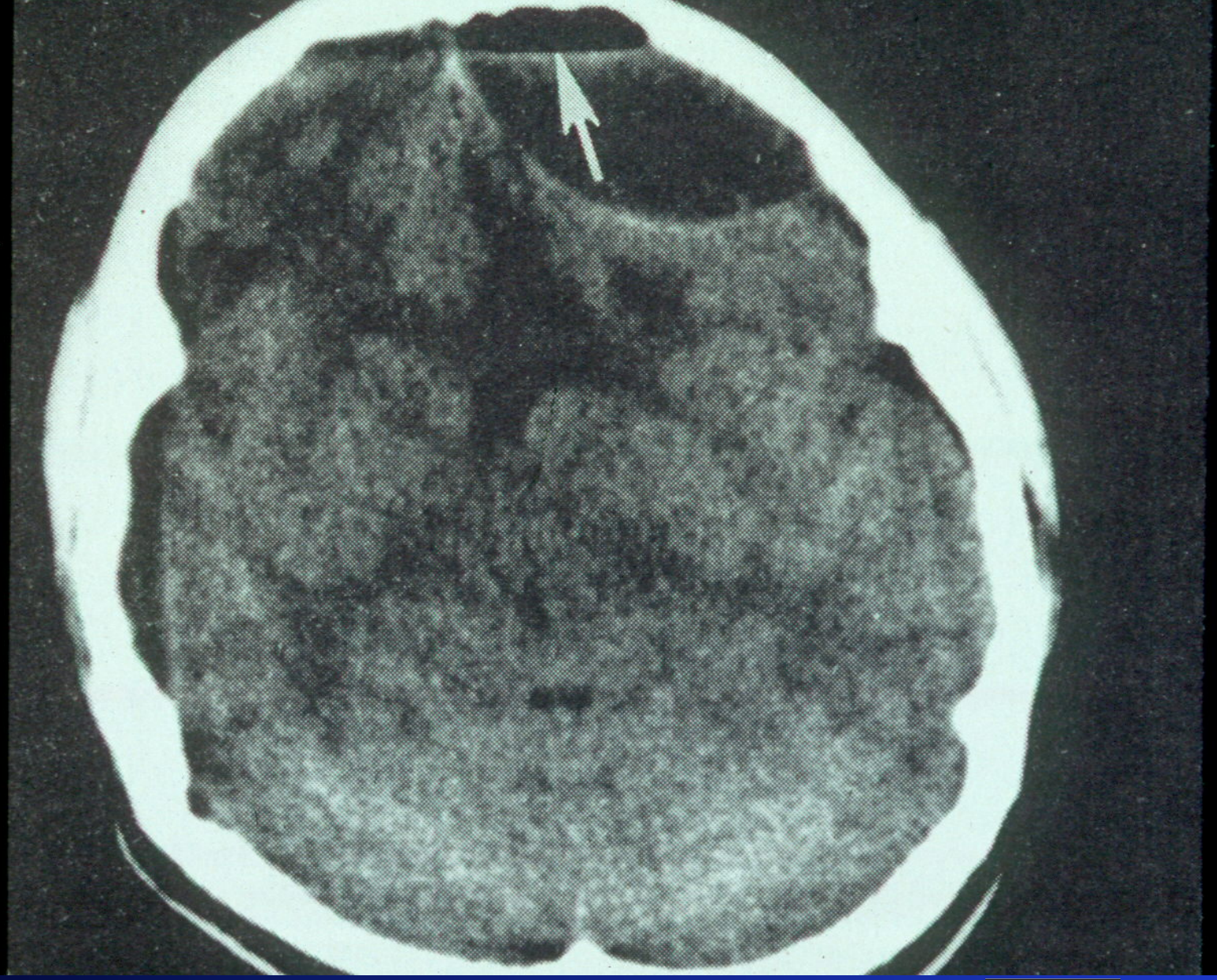
- Periorbital, frontal, or cheek edema
- Proptosis
  - Manifestation of orbital abscess
- Ophthalmoplegia
- Ptosis
- Diplopia
- Meningeal signs
- Neuro deficits of cranial nerves II to VI



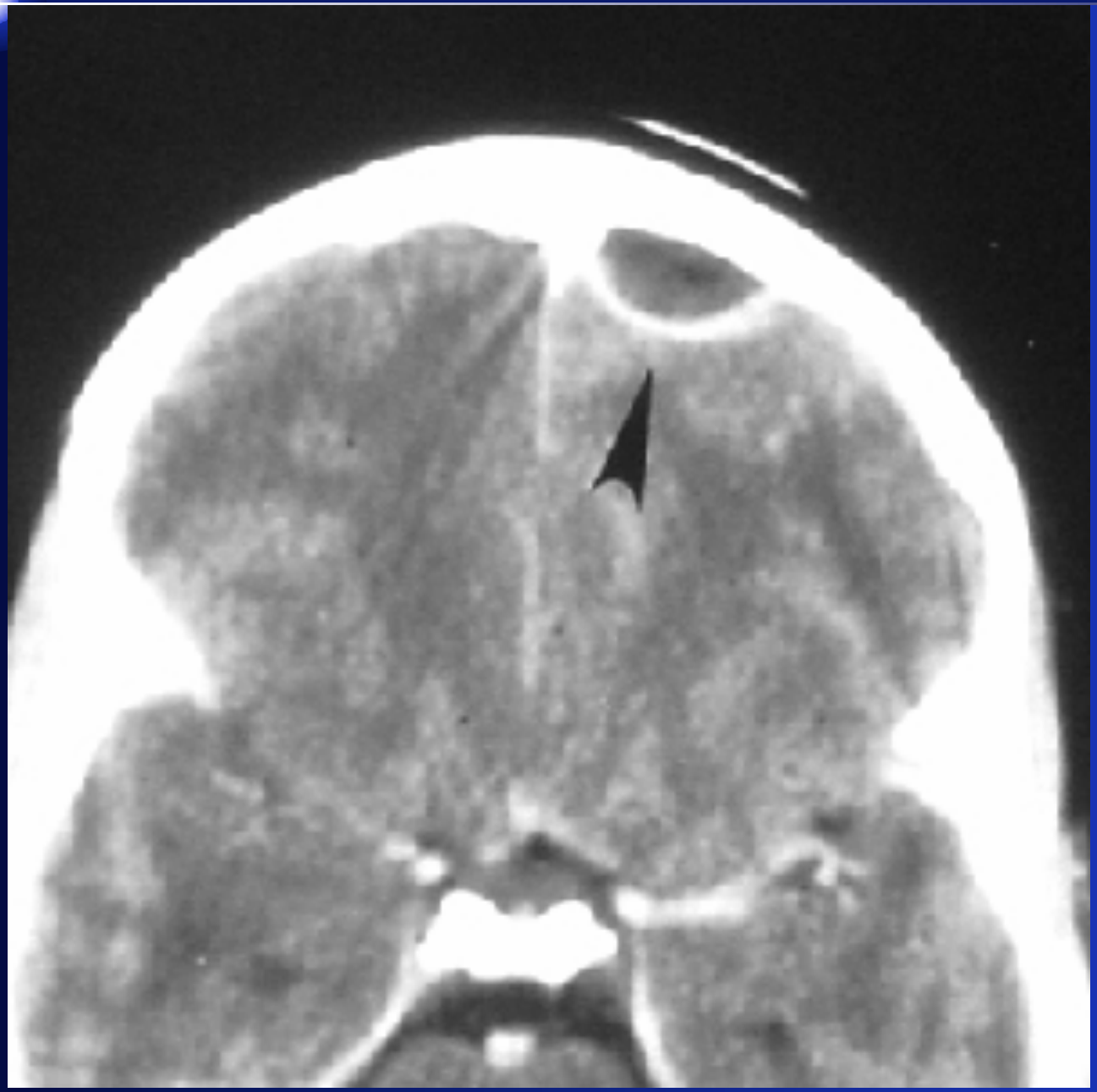
CT scan showing fluid with pockets of air in frontal air cells from frontal sinusitis in a six year old male



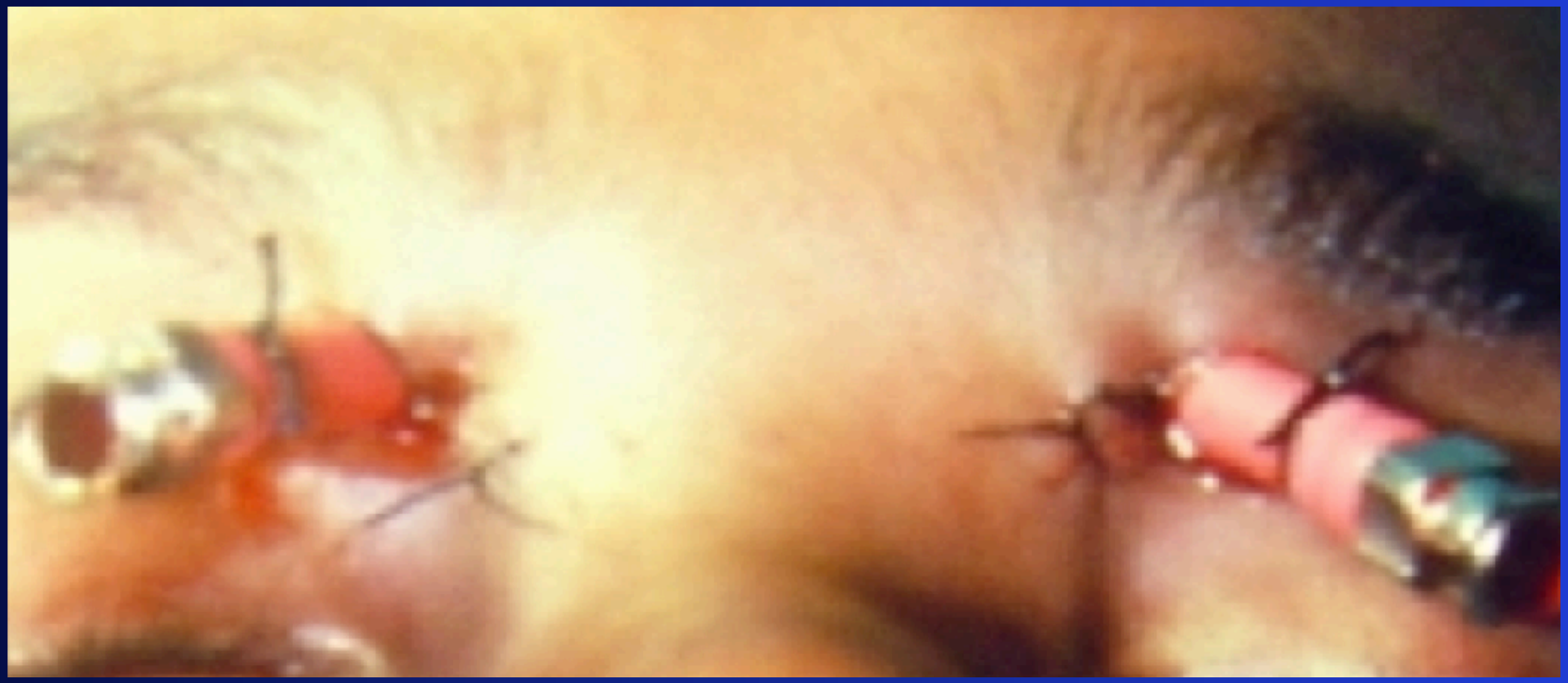
CT scan showing orbital & brain abscesses from ethmoid sinusitis



CT scan showing epidural abscess from frontal sinusitis (six year old male with headache, emesis, and fever)



Subdural abscess from frontal sinusitis



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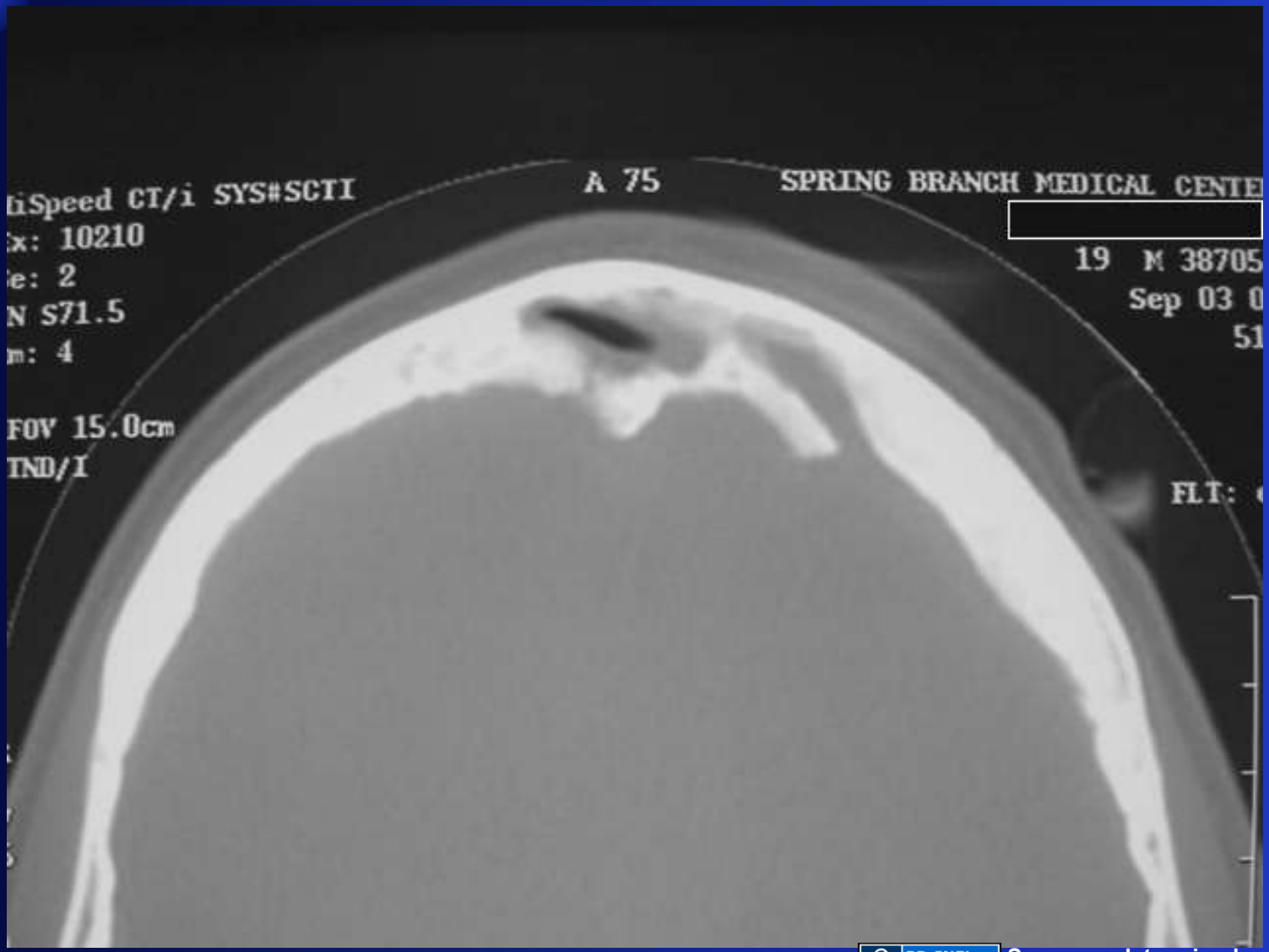
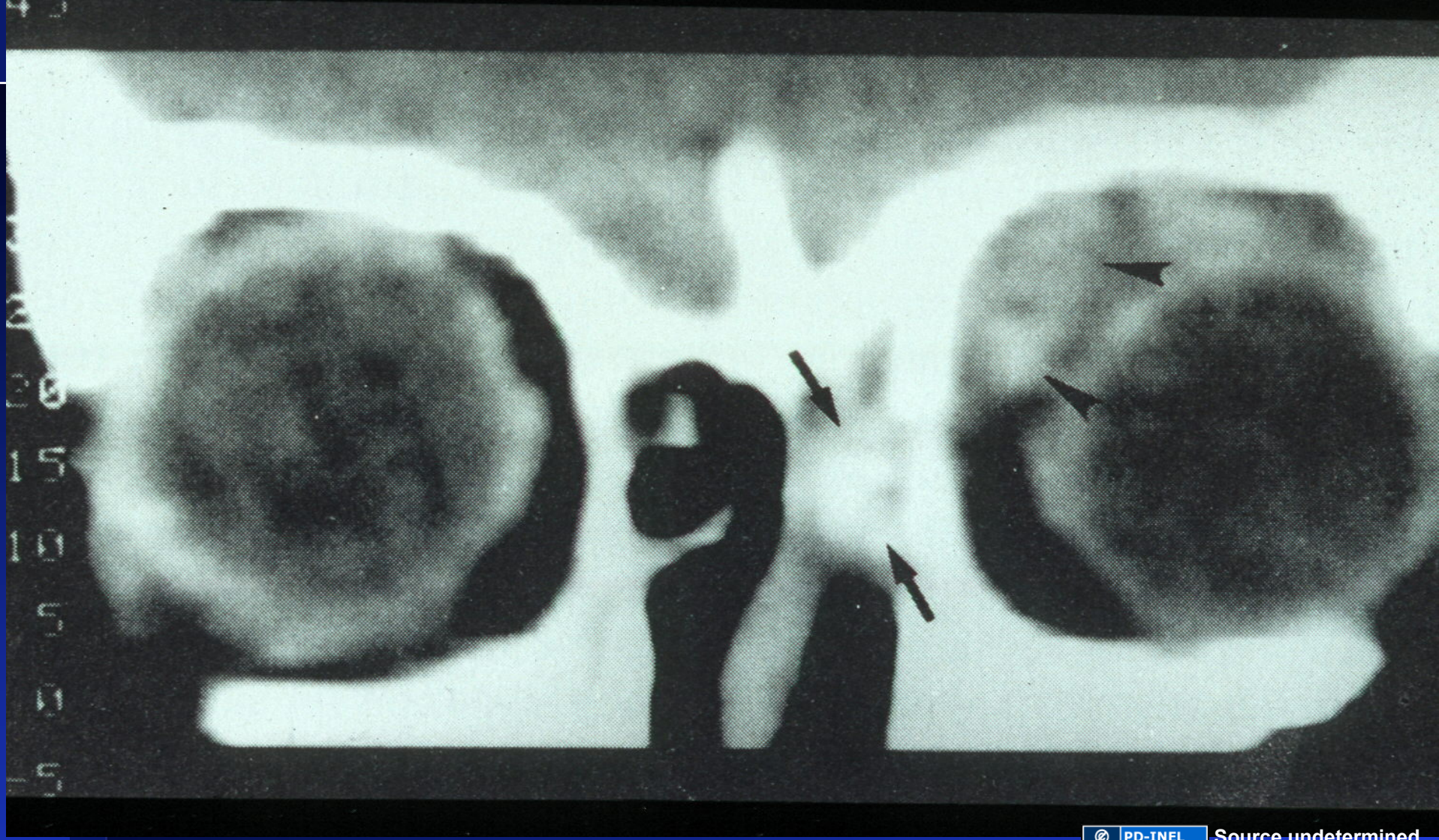
Surgical drainage for same patient in prior slide

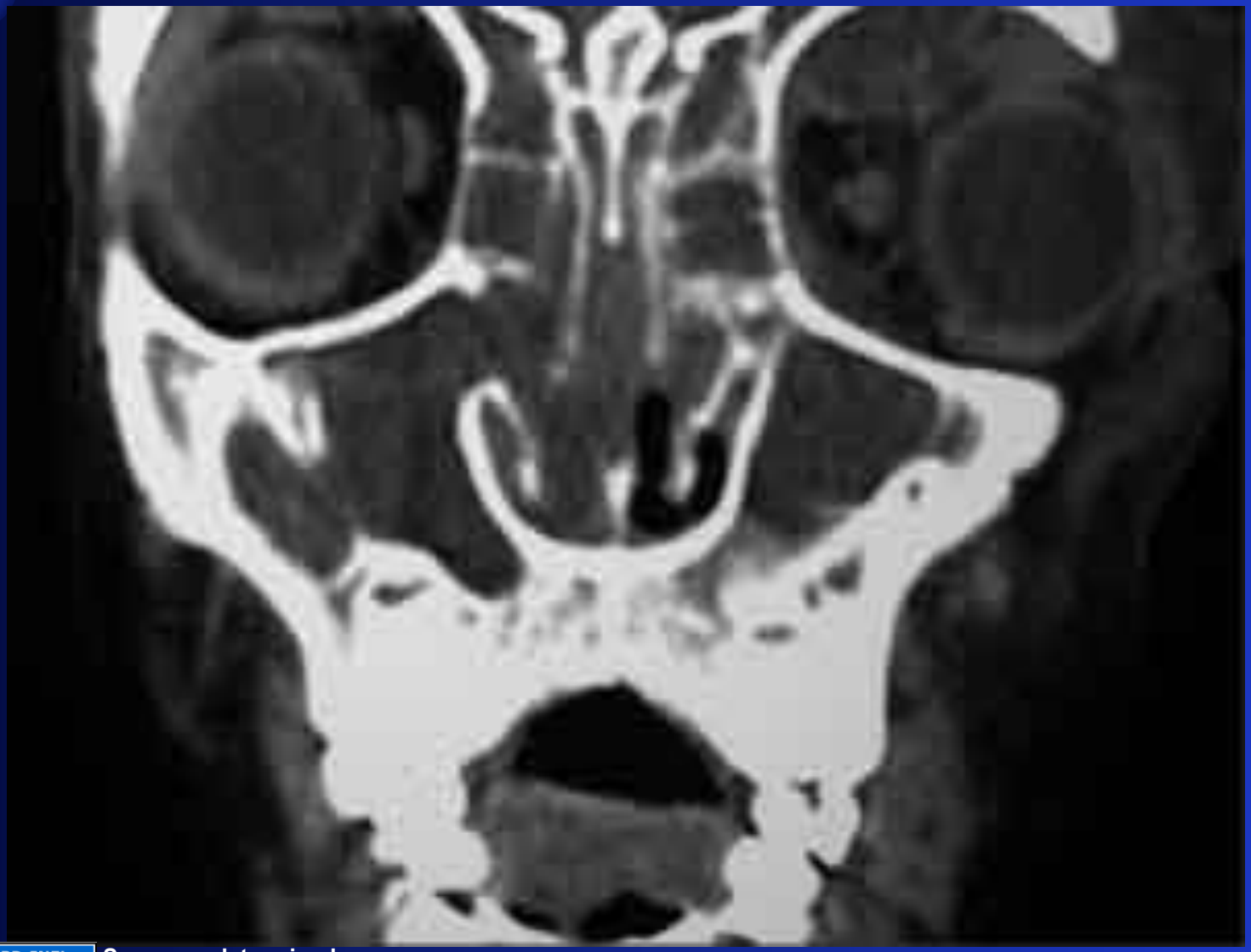


Patient with bony destruction from frontal sinus abscess

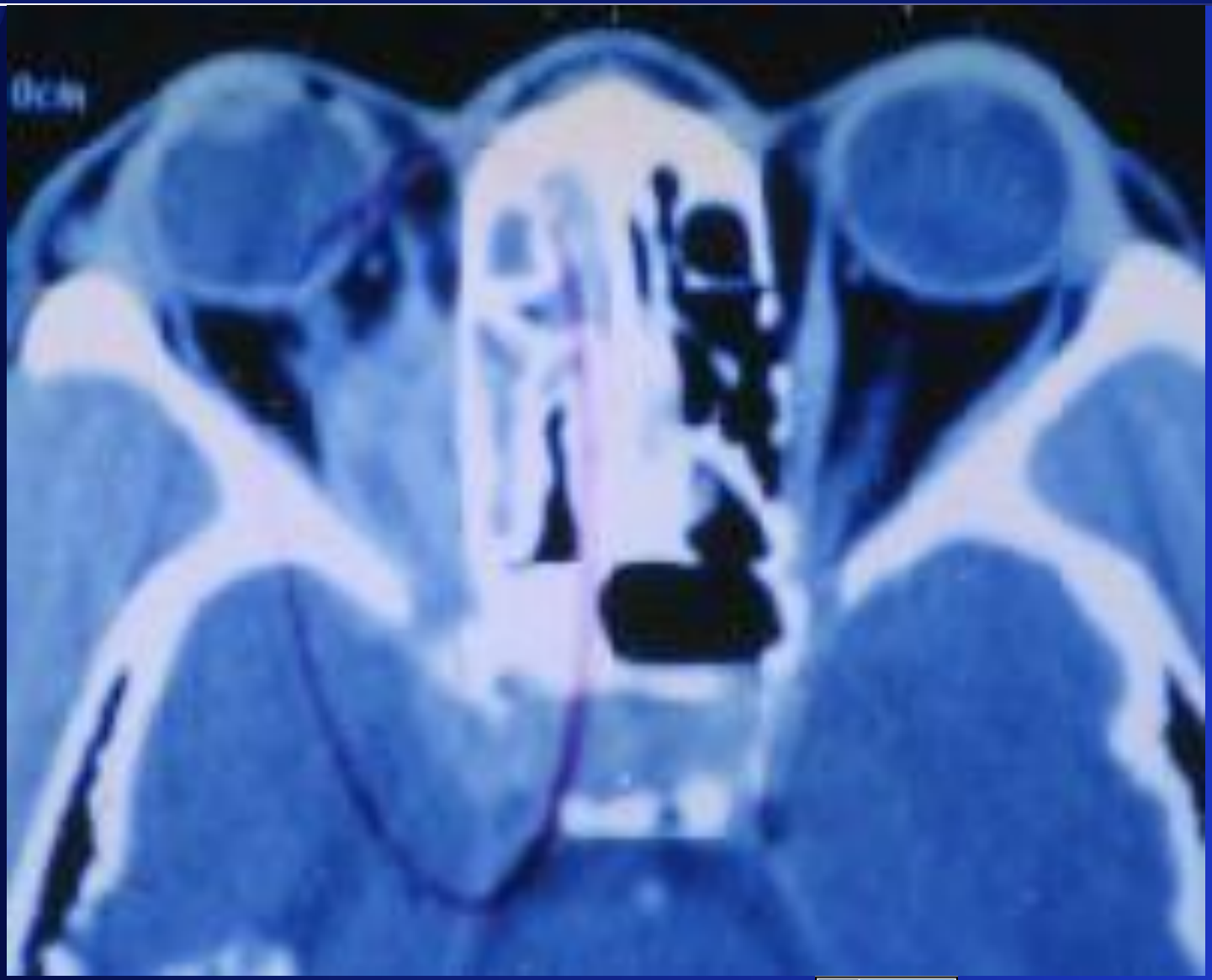


Coronal CT scan showing left ethmoid opacification and displacement of globe by intraorbital mass (patient was a 2 year old male presenting with fever, proptosis, and left orbital cellulitis)

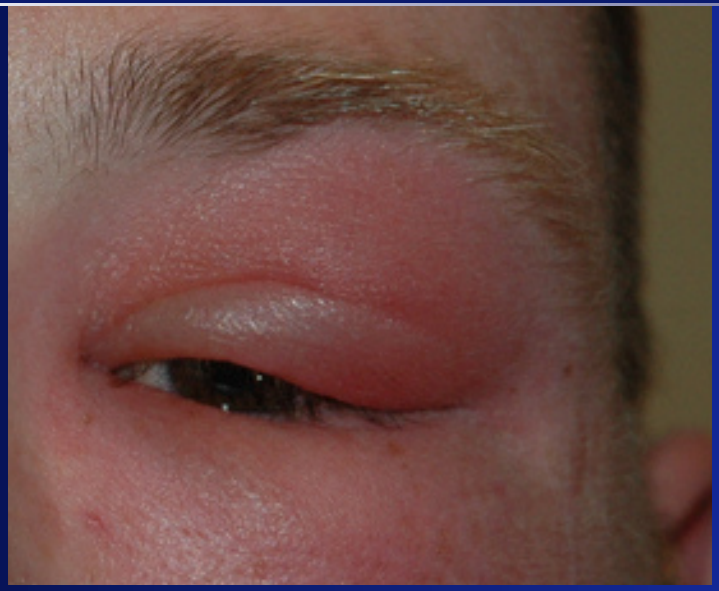
Patient with left orbital abscess



CT scan of same patient with left orbital abscess



Another patient with right retro-orbital abscess



Preseptal cellulitis (important to differentiate from orbital abscess ; Use facial CT to do this)

These patients should be admitted and receive IV and topical antibiotics

Antibiotics to Consider for Rx of Sinusitis Complications

- Ceftriaxone 1 gm IV q 12h
- Cefotaxime 2 gm IV q 4h
- Ceftizoxime 4 gm IV q 8h + metronidazole 30 mg/Kg/d
- Ampicillin / sulbactam 3 gm IV q 6h
- Vancomycin 500 mg q 6h + aztreonam 1 gm q 8h or chloramphenicol (for PCN - allergic patients)

Acute Mastoiditis

- Uncommon now due to antibiotic use for otitis media
- Most common causative bug is Strep pneumoniae
- Rx is IV antibiotics, myringotomy, & drainage
- Mastoidectomy for resistant or complicated cases
- Related serious problem is Necrotizing External Otitis (or "Malignant External Otitis")
  - Usually caused by Pseudomonas
  - Requires IV antibiotics for 4 weeks and radical surgical debridement

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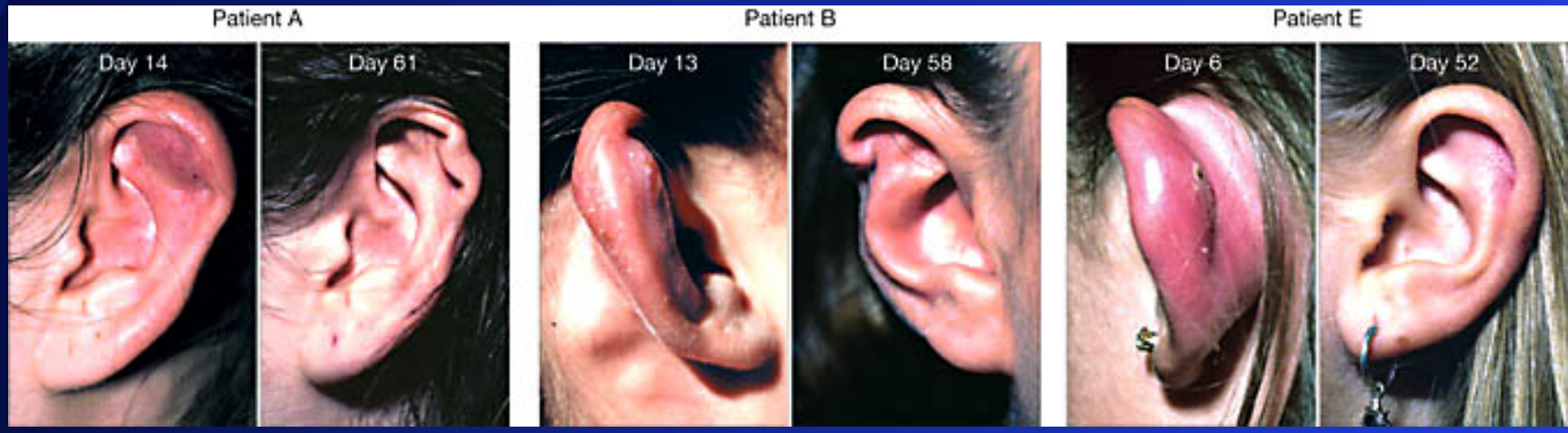
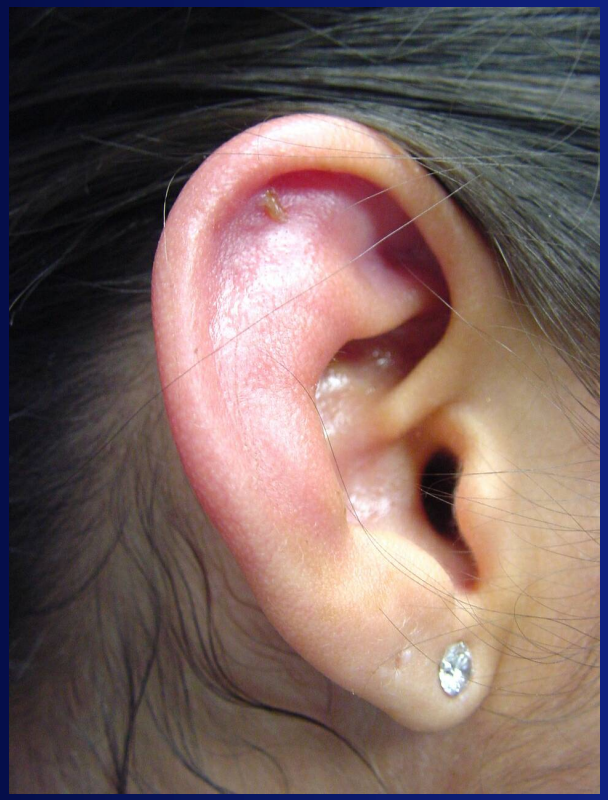
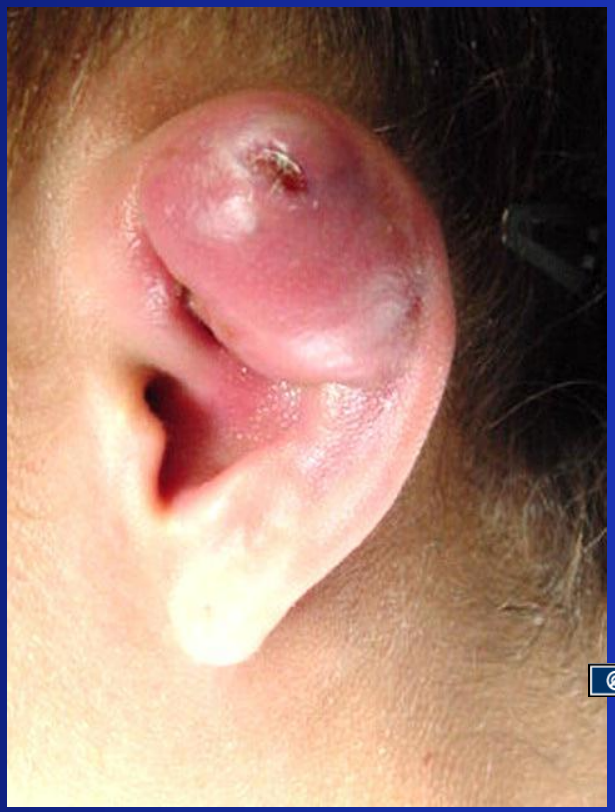
Child with acute mastoiditis from concurrent otitis media

Acute Chondritis

- Can be complication of ear piercing
- Most commonly caused by Pseudomonas but can be due to Strep or Staph
- Requires IV antibiotics
- Also needs incision, drainage, and pressure dressing if abscess present







Patients with acute chondritis

Mucormycosis

- An aggressive opportunistic fungal infection usually with Mucor or Rhizopus
- Occurs in immunocompromised and poorly controlled diabetic patients
- Mortality 30 to 70 %
- Requires IV and topical amphotericin B and aggressive surgical debridement

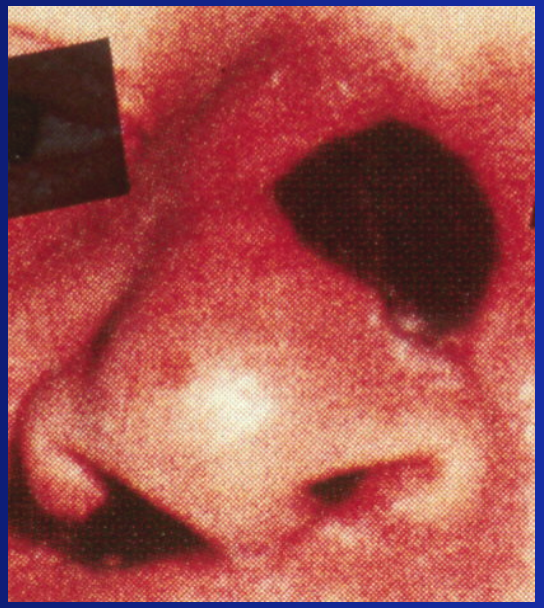


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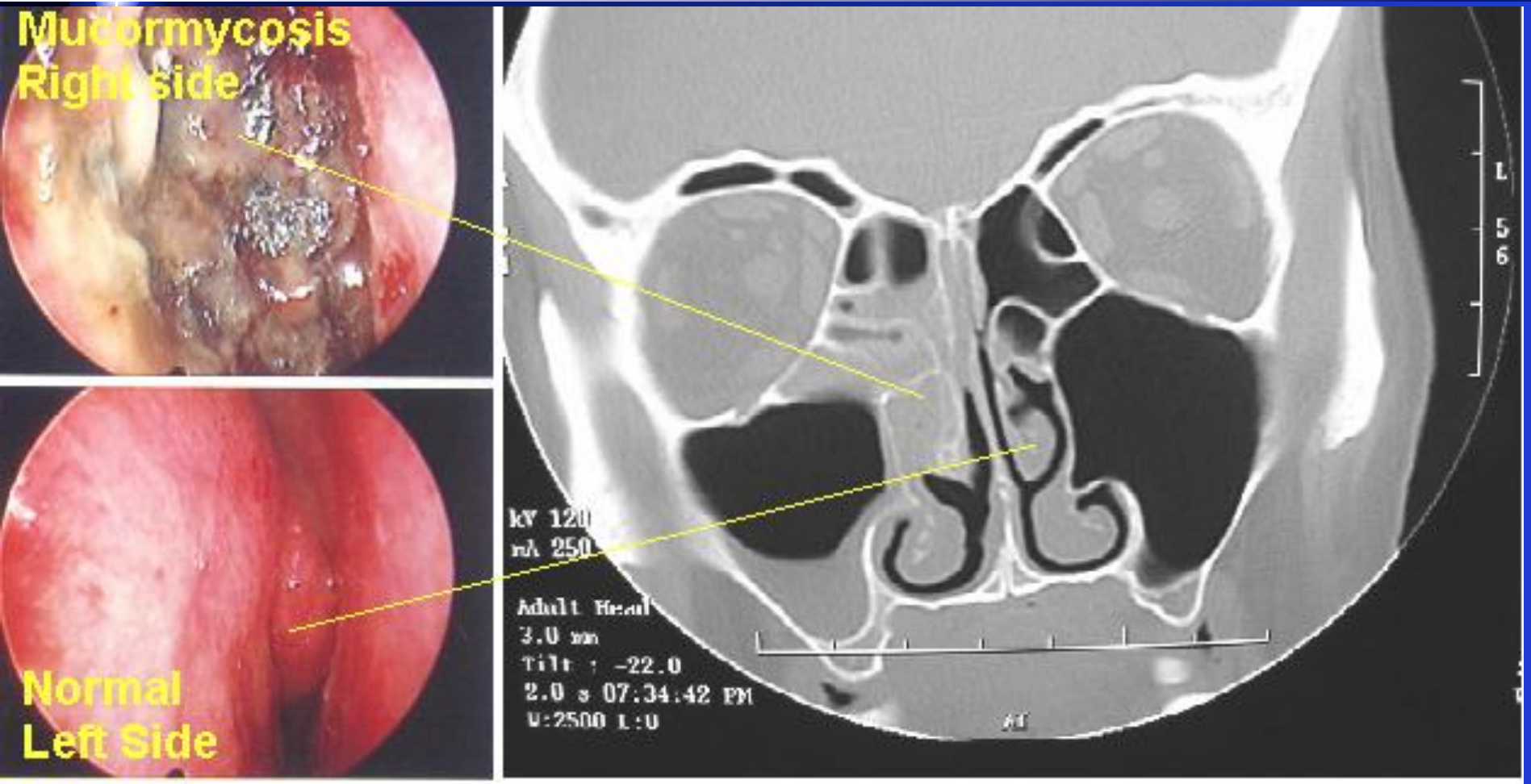
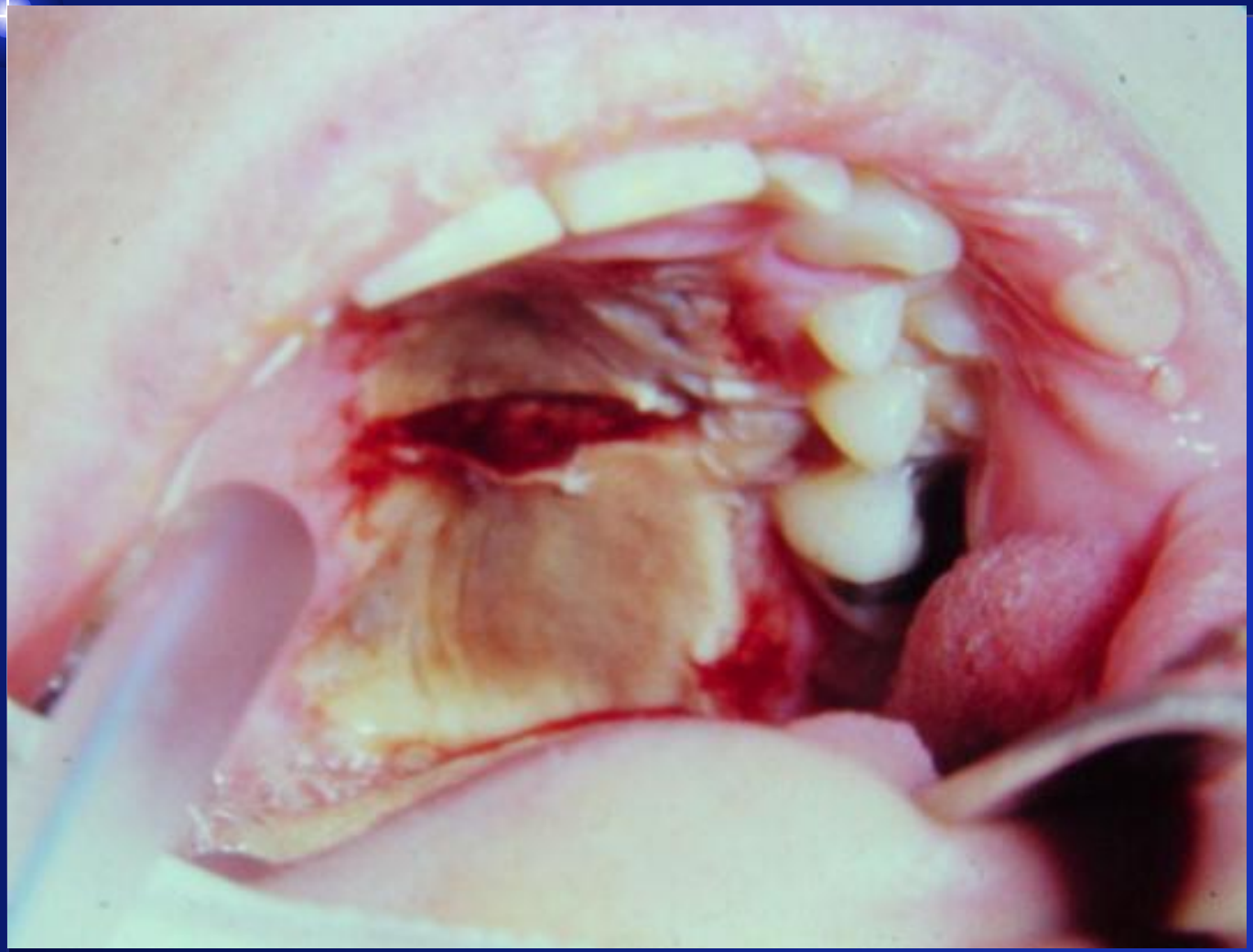
Fig 2. **Mucormycosis in a young man with acute leukemia. There are black necrotic lesions on the left side of the nose and in the right nostril. Biopsy demonstrated characteristic hyphae and involvement of the maxillary sinuses. (Courtesy of Henry W. Murray, MD. Cornell University Medical College.)**



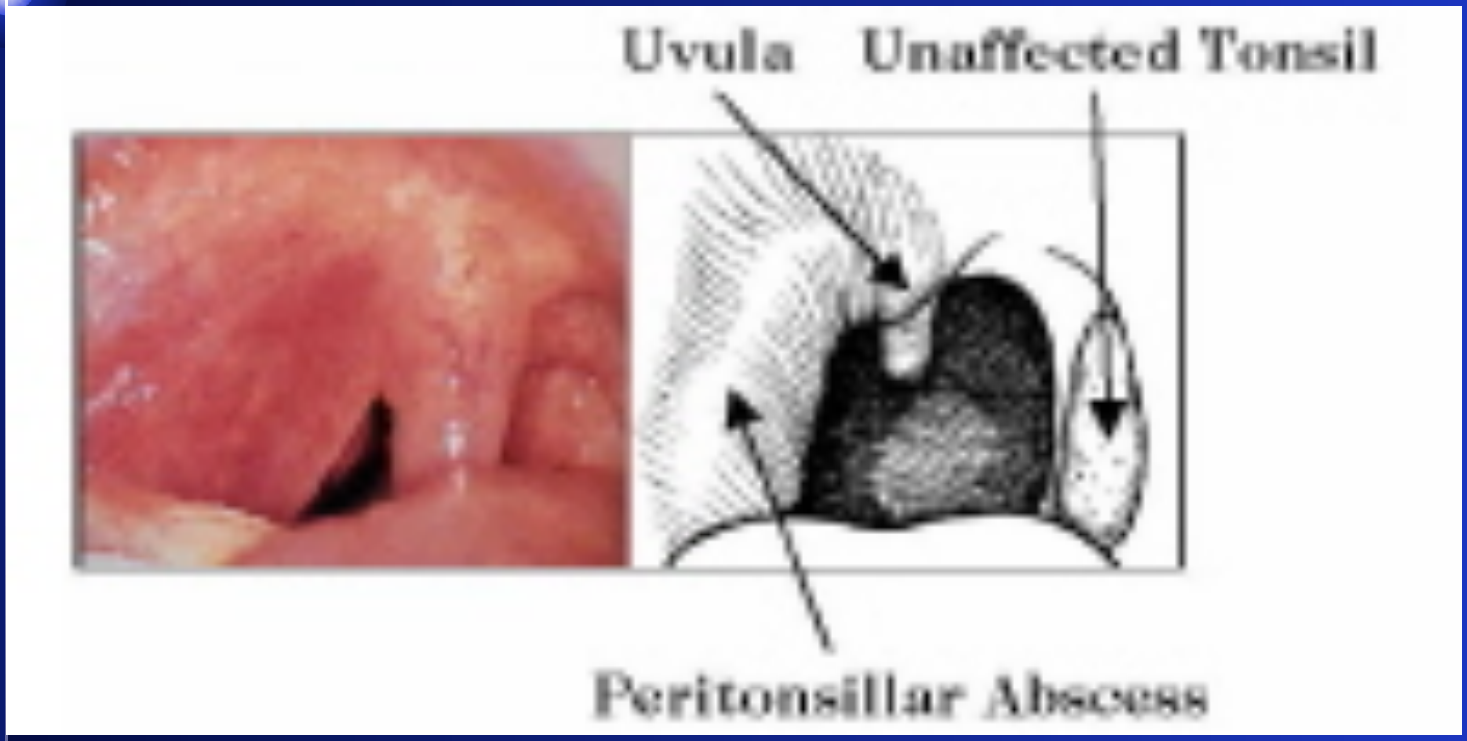
Mucormycosis of the right ethmoid sinus and middle turbinate



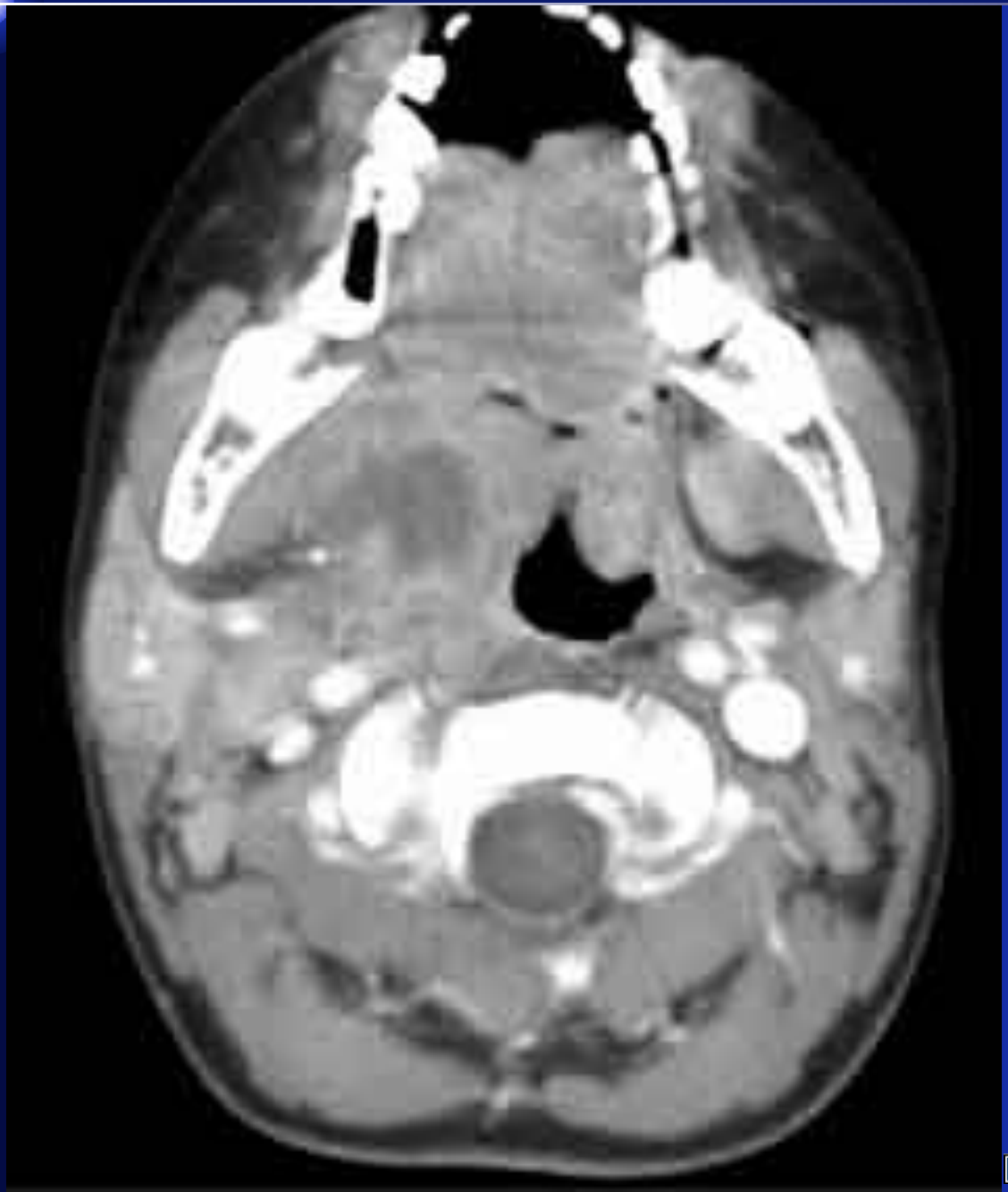
32 year old diabetic presented with coma and DKA ; the hard palate was necrotic with mucormycosis

Peritonsillar Abscess

- Complication of acute tonsillitis
- Unilateral peritonsillar and soft palate swelling with uvular deviation
- Most commonly caused by Strep species but can be polymicrobial
- Usually have trismus, drooling, muffled “hot potato” voice
- May need CT to r/o parapharyngeal abscess
- Requires antibiotics, needle aspiration, and later interval tonsillectomy



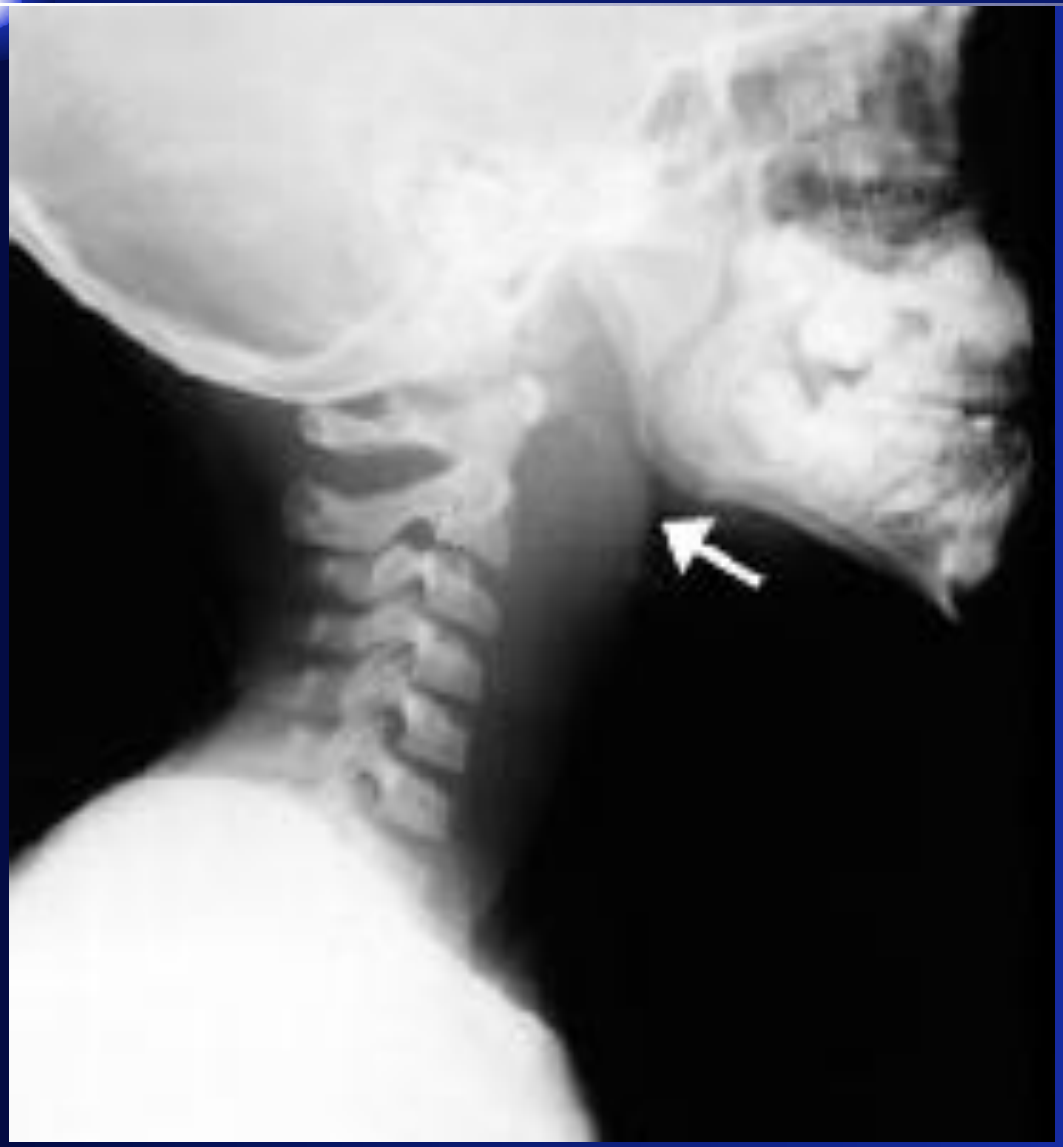
Appearance of peritonsillar abscess



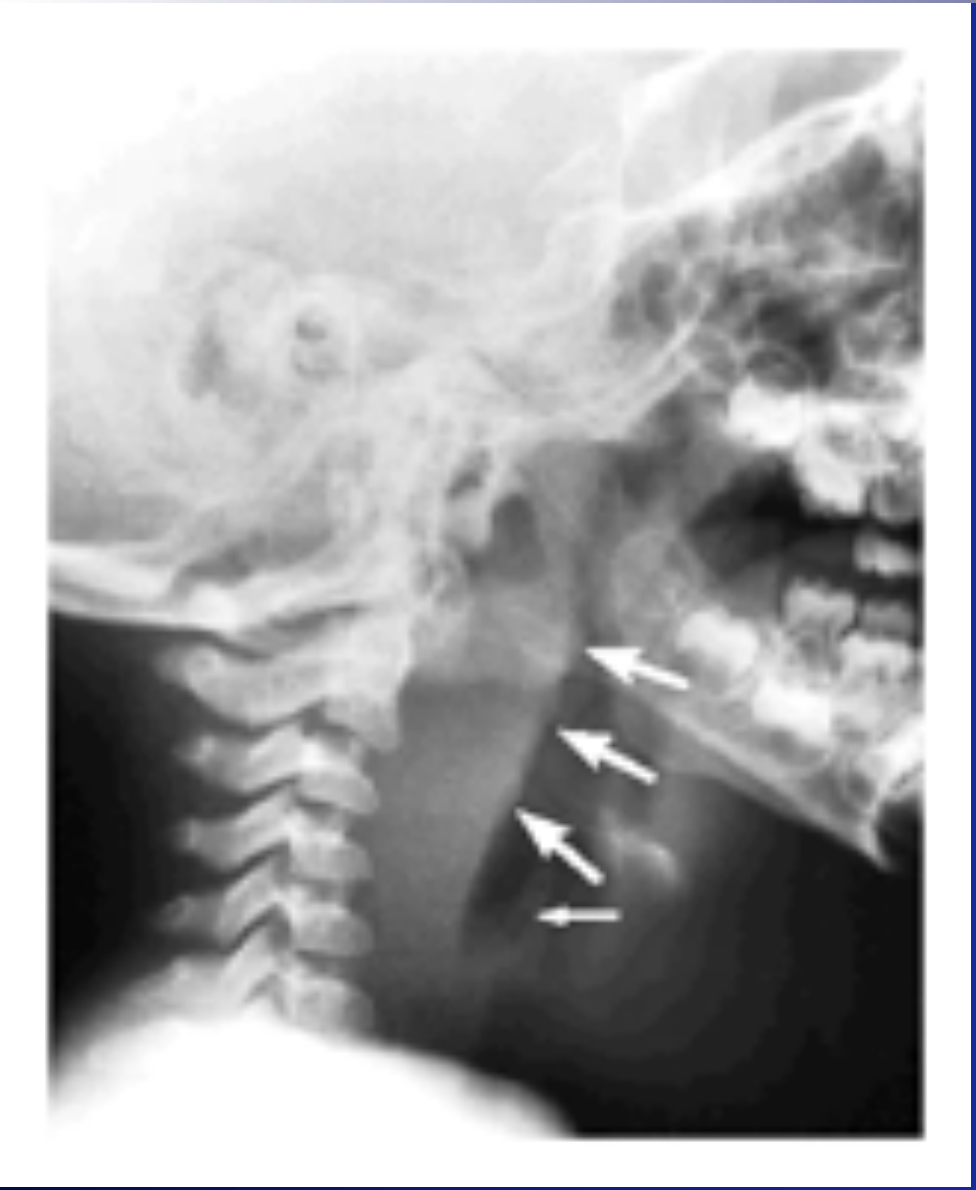
Axial CT scan of peritonsillar abscess in a child

Retropharyngeal and Parapharyngeal Abscesses

- Sx are neck swelling, fever, dysphagia, muffled voice, neck hyperextension
- Due to suppuration of retro- or parapharyngeal lymph nodes, or direct trauma
- Requires CT scan to delineate extent of abscess, IV antibiotics, surgical drainage, and sometimes airway protection with intubation



Plain film of retropharyngeal abscess



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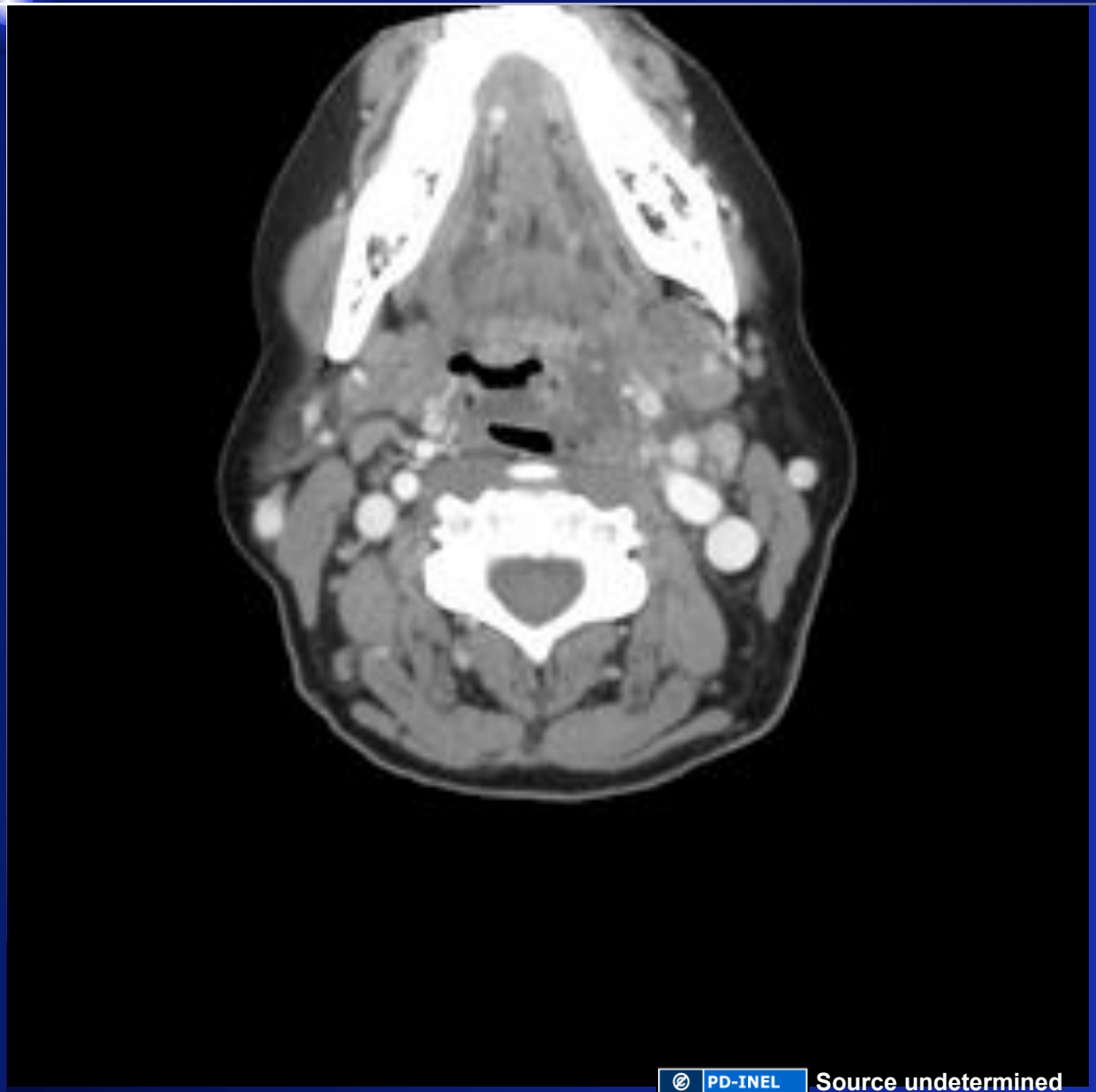
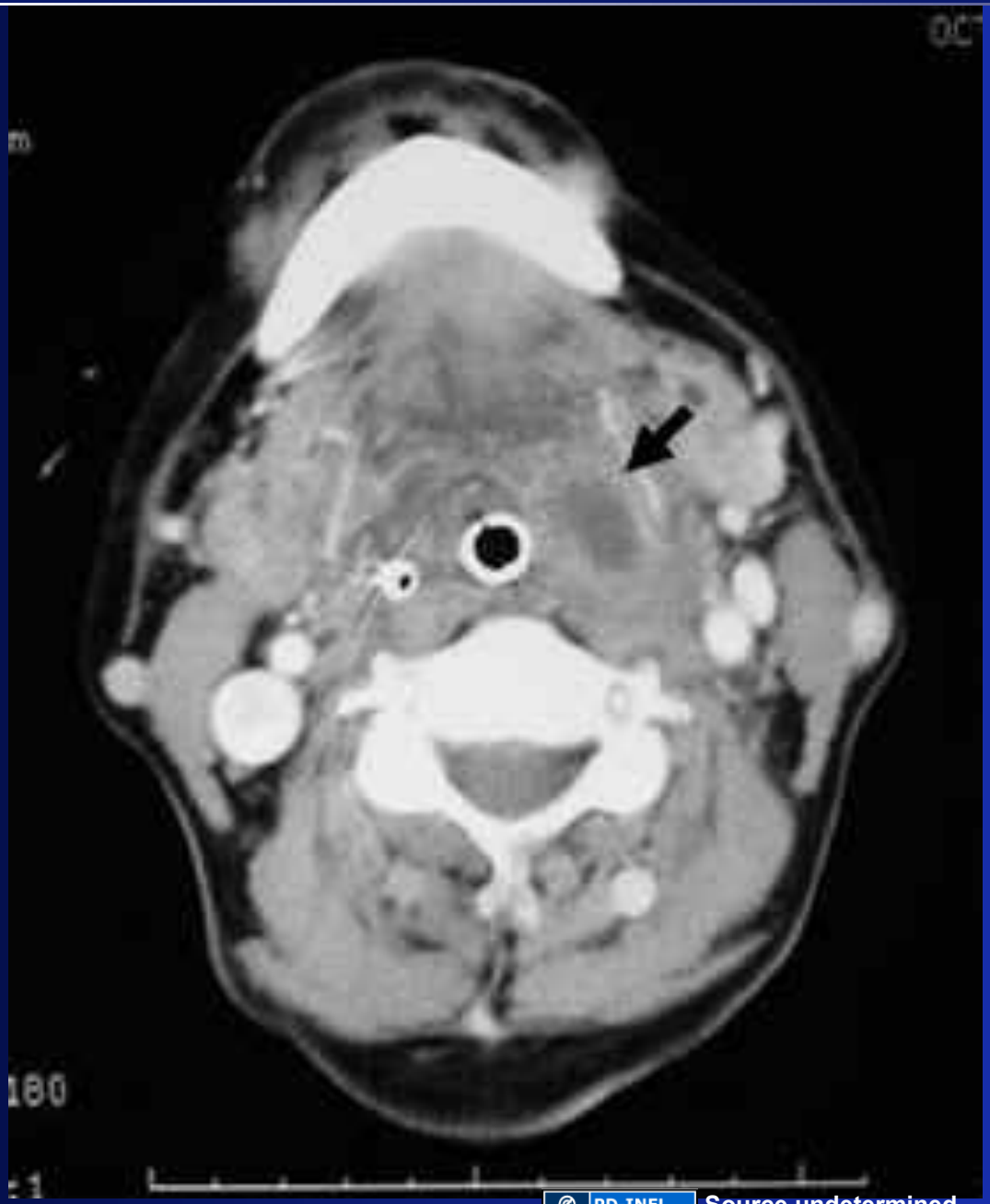
Another plain film of retropharyngeal abscess



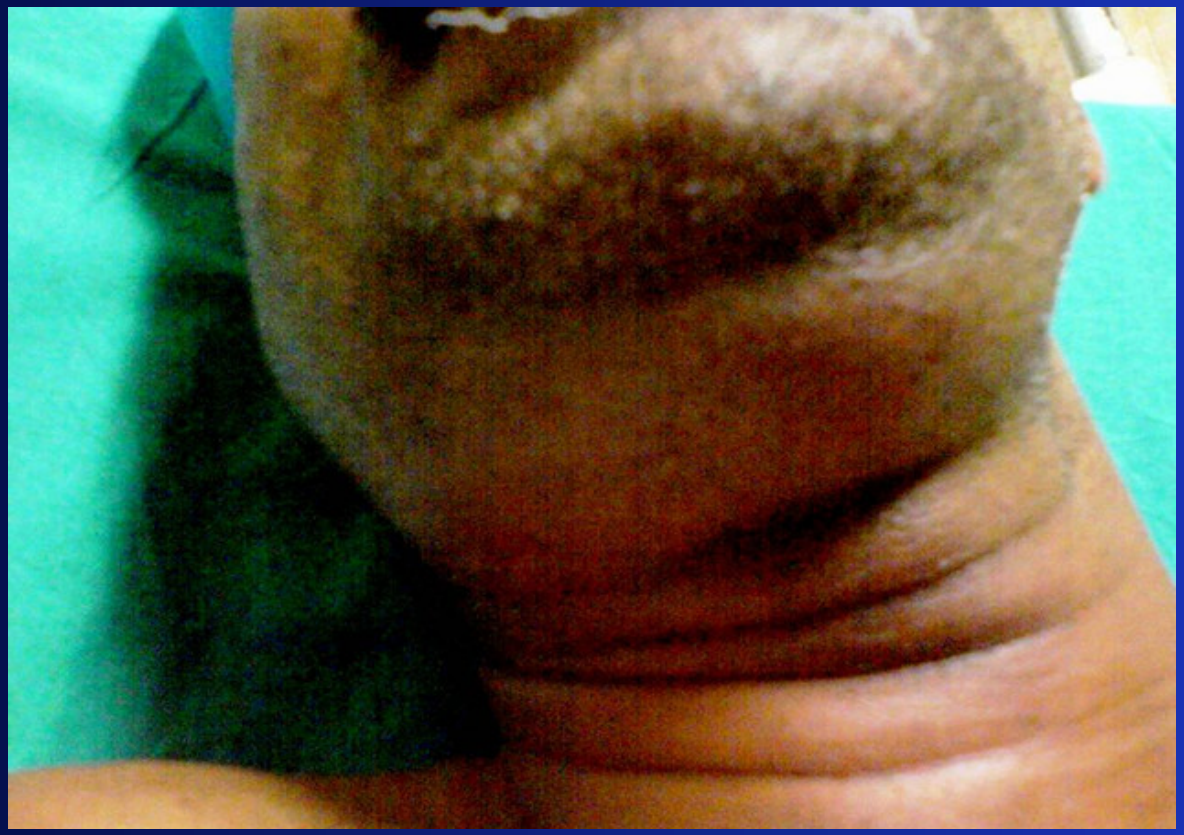
Parapharyngeal abscess on CT



Parapharyngeal abscess (note endotracheal tube in place)

Ludwig's Angina

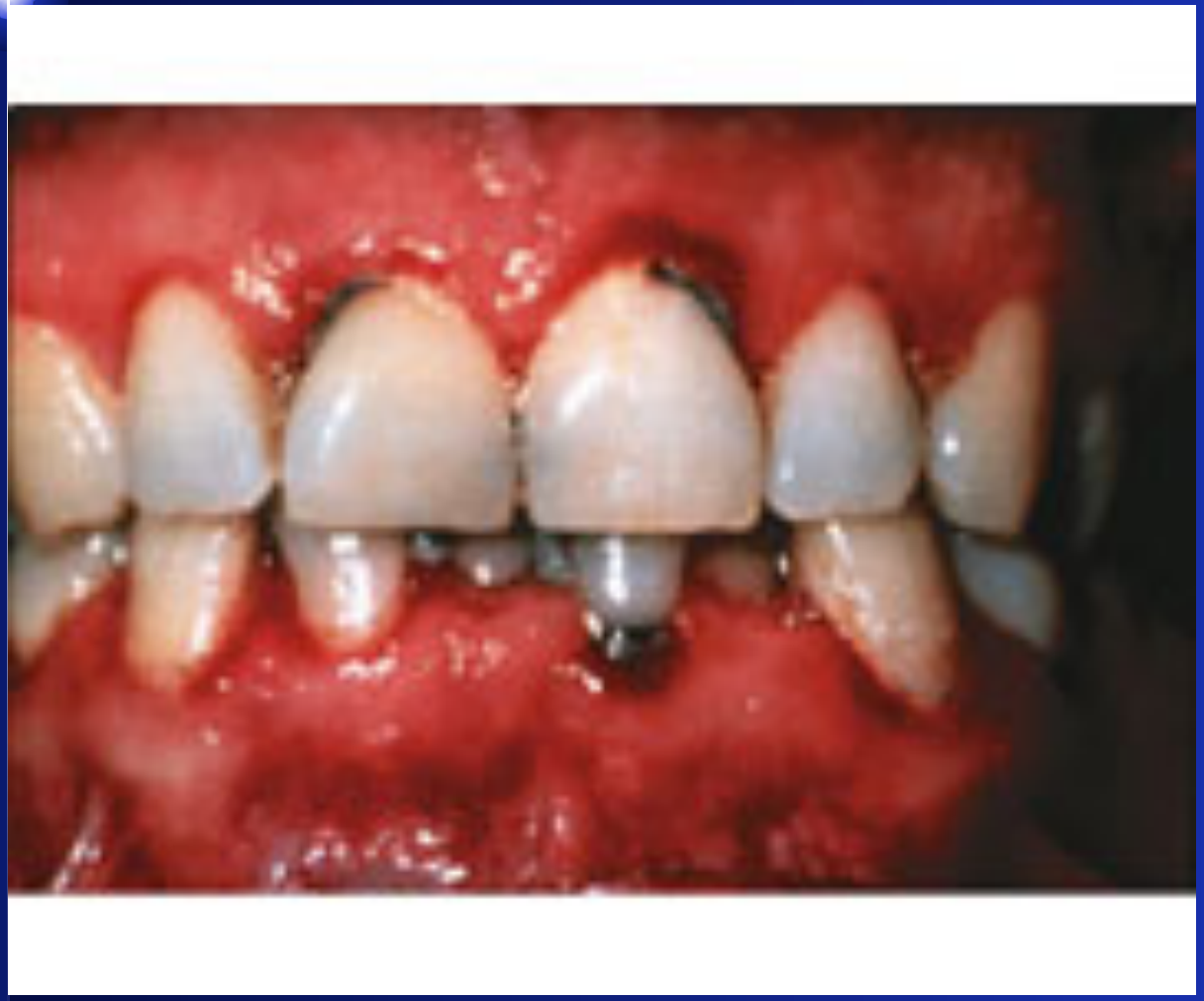
- The most common neck space infection
- Is a rapidly swelling cellulitis (+/- abscess) of the sublingual and submaxillary spaces, usually arising from molar and premolar tooth root infections ; usually polymicrobial infection including anerobes
- Most patients are toxic, severely ill, dehydrated
- Risk of airway obstruction due to upward tongue swelling
- Need CT to delineate any abscess present
- Rx: tracheostomy, IV antibiotics, incision and drainage of the neck, excision of source teeth



Patient with Ludwig's angina (note typical brawny swelling of the submandibular area)

Vincent's Angina

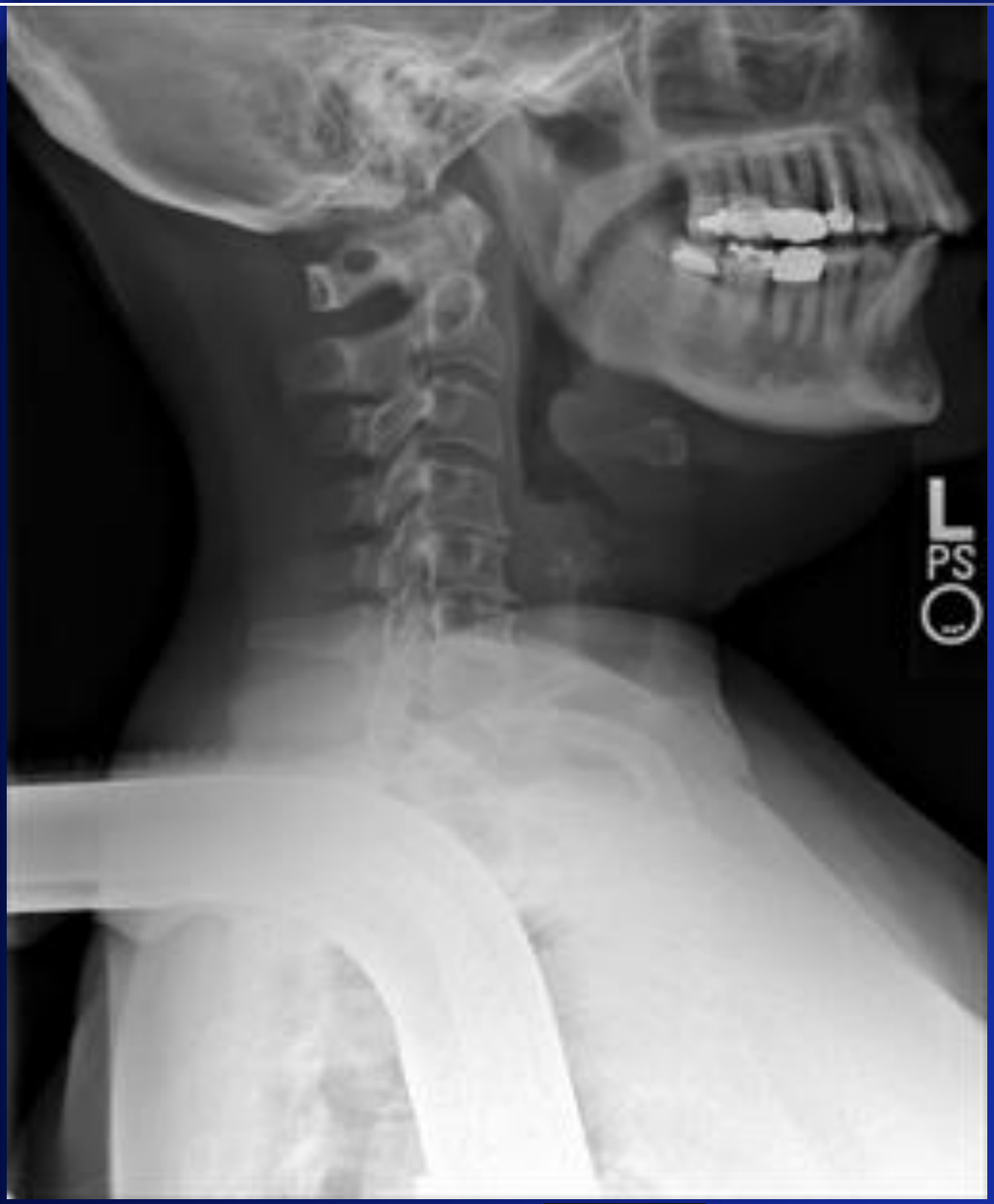
- An acute necrotizing infection of the pharynx and/or tonsils caused by a combination of fusiform bacilli and spirochetes (the same organisms that cause acute gingivostomatitis or "trench mouth"
- May have fever, lymphadenopathy, and metallic taste
- Need CT to look for gas and if any associated abscess in the soft tissues
- Rx : IV penicillin and/or clindamycin, surgical debridement of necrotic tissue



Acute necrotizing ulcerative gingivitis

Acute Epiglottitis

- Due to HiB vaccine, is now rare (I've never seen a case in my entire career)
- Most cases now are in men age 40 to 60
- Usually caused by Hemophilus sp. and Strep pneumoniae
- Adult mortality reportedly 7 %
- Most patients febrile, toxic, drooling, muffled voice
- Need CT to r/o parapharyngeal abscess
- Rx : IV ceftriaxone, +/- airway control



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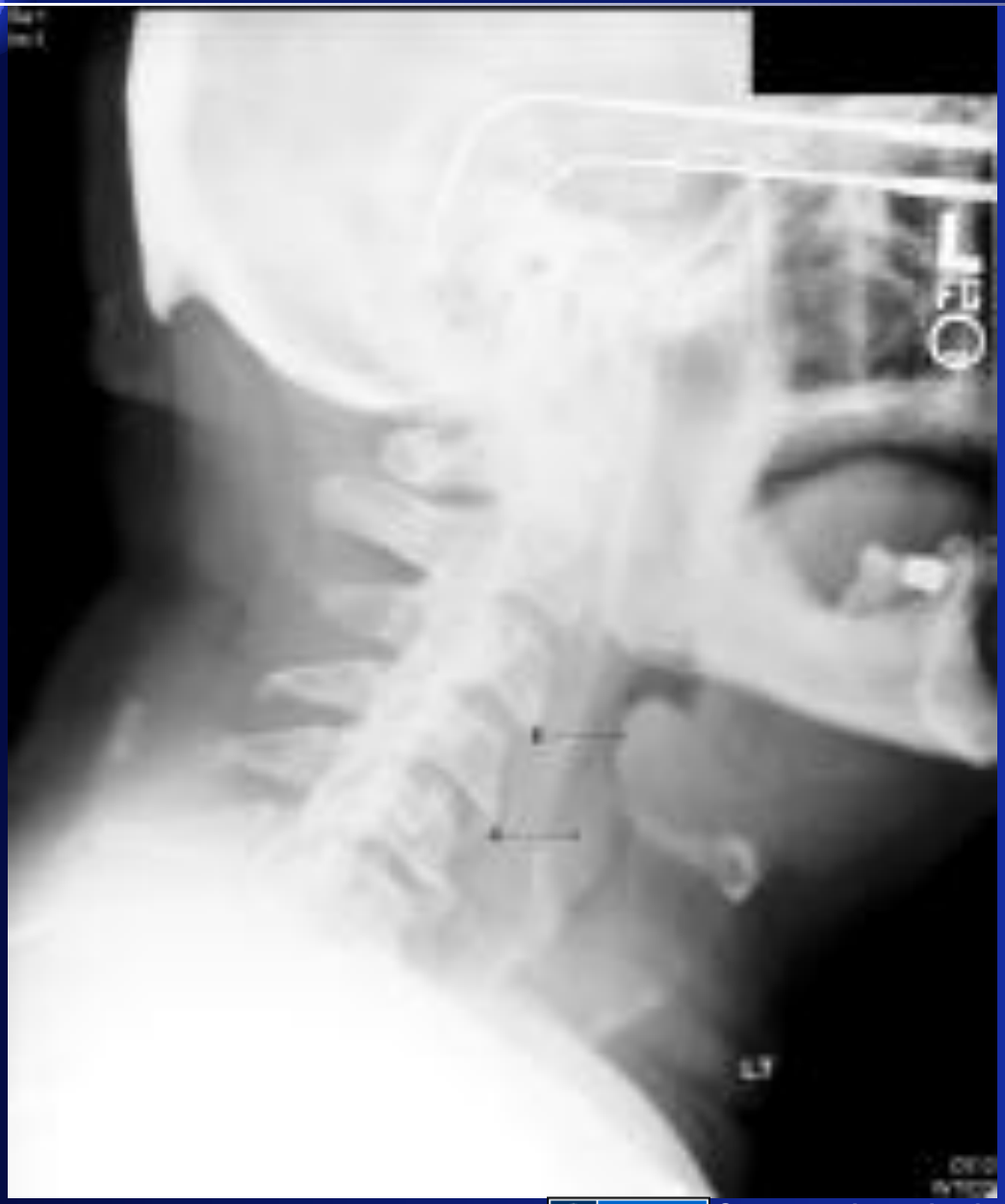
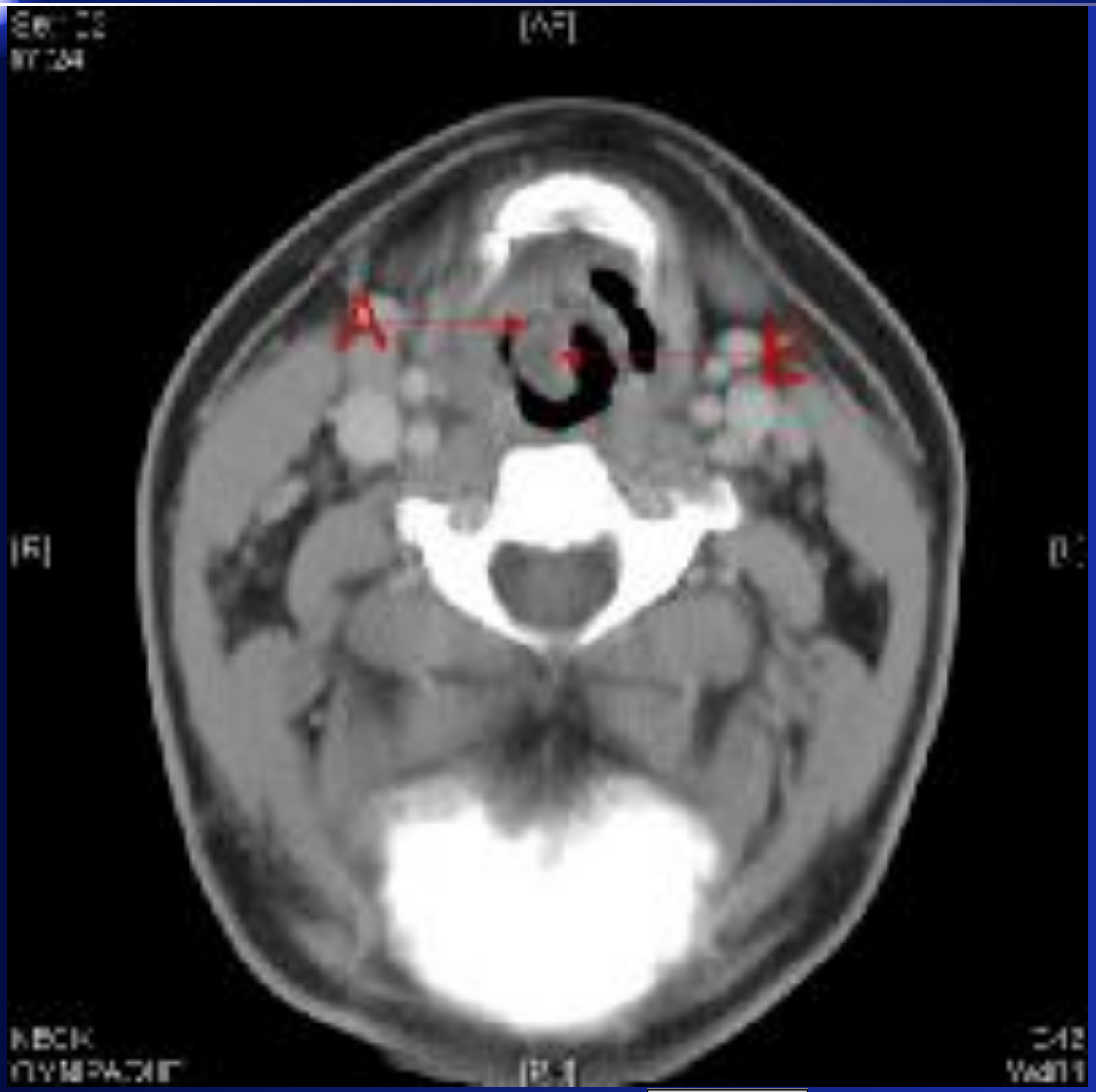
Plain film showing enlarged epiglottis from epiglottitis in an adult



Acute epiglottitis in a 66 year old male



CT scan of same patient as on prior slide ; note column of air around the epiglottis (E) ; the right side of the epiglottis is more swollen than the left ; hypo-attenuation at "A" is suggestive of early abscess

E.N.T. Emergencies Related to Sepsis : Lecture Summary

- Maintain low threshold for workup with facial CT, particularly in immunocompromised patients
- Start IV antibiotics early
- Don't forget routine resuscitative measures (such as IV fluid bolus) and blood cultures in febrile or toxic patients
- Early consultation with your friendly otolaryngologist
  - May require additional consults to neurosurgery or ophthalmology
  - Use consultant to decide if pre-operative needle aspirates for culture