Facial swelling is a commonly encountered complaint in the emergency department, with differential diagnoses ranging from benign soft-tissue swellings to life-threatening intracranial abscesses. It is important to determine which patients require further imaging and evaluation, and which patients are safe to be discharged.

**History and Physical Examination**

- **History** – An 11 year-old girl was brought to the ED with a progressive swelling on her forehead after bumping her head onto a wall 8 hours prior. The patient also was having a right sided, peri-orbital headache over two weeks, mild fever over the last four days, and vomiting over the last few hours.
- **ROS** - Denied loss of consciousness, vertigo, seizures, photophobia, blurry vision, cough or nasal congestion
- **Medical history** – unre markable
- **Immunizations** – up to date
- **Vital signs** – Normal except for T101°F
- **Physical examination** – A single 5x5 cm, roughly midline, circular, tender swelling without surrounding erythema on the patient’s forehead. Bilateral maxillary tenderness. Neurologic and other systems normal.

**Investigations**

- Total WBC count – 11,290/μL
- Differential count – neutrophilic leukocytosis
- ESR of 82 mm/hr
- CRP of 9.8 mg/dL

**Differential Diagnosis**

- **Cutaneous** – Cellulitis, infected dermoid or sebaceous cyst, carbuncle
- **Subcutaneous** – Hematoma, orbital or peri-orbital cellulitis, unilateral non-Hodgkin lymphoma, lymphadenitis, inflammatory cutaneous tuberculosis
- **Sub-galeal** – Subgaleal hemorrhage
- **Sub-periosteal** – Pott’s puff y tumor

**Treatment Plan and Outcome**

- MRI showed right frontal sinusitis with associated osteomyelitis, epidural abscess, dural enhancement, and overlying subcutaneous abscess, with trans-ossseous connections of the frontal sinus with the subcutaneous tissue and the epidural space.
- Functional endoscopic sinus surgery was performed for frontal sinus drainage
- IV Ceftriaxone and IV Metronidazole were administered for a period of six weeks through a PICC line
- Patient improved and the swelling was resolved

**Discussion**

- Pott’s Puffy Tumor is a rare non-neoplastic sequela of frontal sinusitis, complicated by acute osteomyelitis and subperiosteal abscess. This condition often presents with facial swelling.
- In the initial stages, this tumor is often misdiagnosed as hematoma or infected sebaceous cyst.
- Delay in diagnosis could lead to serious intracranial complications such as epidural abscess, intracranial abscess, and pre-septal orbital cellulitis.

**References**

3. Case courtesy of Dr Mark Thurston, Radiopaedia.org. ID: 59019

**Figure 1** – A case of Pott’s Puffy Tumor in an 8-year-old girl

**Figure 2** – Non-contrast CT of the head showing soft tissue swelling anterior to the glabella

**Figure 3** – Non-contrast CT of the head showing frontal sinusitis

**Figure 4** – Non-contrast CT of the head sagittal view of a 20-year-old female with Pott’s Puffy Tumor showing frontal sinusitis, frontal osteomyelitis and sub-periosteal abscess

**Figure 5** – Frontal sinusitis and the scope for extensions extracranially (A), intracranially (B) and intra-orbitally (C)(7)