



FRONTAL BONE OSTEOMYELITIS

Dr. Killi. Mamatha Postgraduate, Department of Otorhinolaryngology

Dr. S. Sharu Postgraduate, Department of Otorhinolaryngology

Dr. Meka Pavani Rao* Assistant professor, Department of Otorhinolaryngology. *Corresponding Author

ABSTRACT Pott's puffy tumor is a relatively uncommon clinical condition, particularly in this antibiotic era. It manifests as frontal skull osteomyelitis with a frontal subperiosteal abscess, which usually results from frontal sinusitis. Here we report a case of a 45-year-old female patient who presented to ENT OPD with swelling in the forehead for two weeks, fever, and headache for two days. Radiological investigations confirm the diagnosis of frontal osteomyelitis. Surgical debridement of the tumor was done by osteoplastic flap method and the patient was kept on broad-spectrum antibiotics.

KEYWORDS : Pott's puffy tumor, frontal bone osteomyelitis

INTRODUCTION:

Pott's puffy tumor is characterized by frontal skull osteomyelitis with associated subperiosteal abscess.^(1,3) Unusually, other extracranial regions may be involved.⁽⁴⁾ It can also spread to the intracranial, periorbital, and intraorbital regions.^(5,6) This condition is now rare with the advent of antibiotics. Direct spread of frontal sinusitis and frontal trauma are two common aetiological factors. With an intracranial extension, the clinical manifestations progressively became severe with attendant neurological deficits. Cranial computed tomographic scanning is the radiological investigation of choice because it delineates extracranial and intracranial soft tissue lesions in addition to the associated bony lesions. Cranial magnetic resonance imaging can provide additional information about intracranial lesions

CASE REPORT:

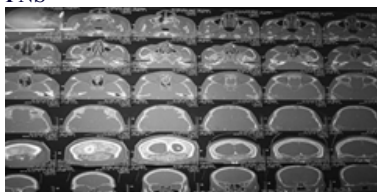
A 45-year-old female patient presented to ENT OPD with swelling in the forehead for 2 weeks, headache, and fever for 2 days. Apart from that there was no history of loss of consciousness, Vomiting, convulsions, or diminished vision. She is a known diabetic and she is taking metformin 500 mg once daily. On physical examination, she was alert and oriented. Her Blood pressure was 120/80 mm of Hg, pulse rate-80/min, and temperature-98.6 degrees F. There was a diffuse soft swelling of size about 4x3 cm on the forehead extending from the root of the nose up to 3 cm below the hairline. There was no local rise in temperature and tenderness.

Figure 1. Photograph showing frontal swelling



CT paranasal sinuses revealed aggressive lytic destruction of frontal bone involving predominantly outer table. Opacification of the frontal sinus was noted. Which is suggestive of frontal bone osteomyelitis.

Figure 2. CT PNS



Frontal trephination was done, and aspirated 5 ml of frank pus from the swelling was sent for microbiological examination. The pus culture was sterile after 48 hours of incubation. 10 days after the trephination

swelling in the frontal region was increased with sinus formation which was discharging pus.

Frontal sinus exploration was done by the osteoplastic flap method under general anesthesia.

Procedure: Transverse incision was given over the frontal region extending laterally along the supraciliary ridge. The periosteal flap was elevated, and the anterior plate of the frontal sinus in the form of calculus or concretion was removed. The posterior wall and floor of the frontal sinus were intact. Necrotic tissue in the frontal sinus was removed. The left frontal sinus ostium was stenosed, the right frontal sinus ostium was cleared off the necrotic debris and patency was achieved by placing a drain and the frontal sinus was irrigated. Subperiosteal and subcutaneous tissue was closed in layers. Histopathological examination confirms the diagnosis of frontal bone osteomyelitis.

DISCUSSION:

The history and clinical presentation suggested osteomyelitis of the frontal bone with a subperiosteal abscess. X-rays and CT scans confirmed these. Frontal sinusitis was the most likely cause of osteomyelitis (Pott's puffy tumor) in our patient.

The patient may present with headache, swelling, and on occasion a discharging sinus. The infection can spread posteriorly giving rise to intracranial sepsis either by erosion of the posterior table or more likely by septic thrombophlebitis via the diploic veins. (3)

Pott's puffy tumor is associated with significant morbidity and complications such as intracranial sepsis, cerebral vein thrombosis, seizures, focal neurological deficits, and chronic calvarial osteomyelitis.

Figure 3. Surgical debridement of the frontal bone



Mortality has significantly reduced from as high as 60% in the pre-antibiotic era to as low as 0-3.5% in the antibiotic era. Treatment of Pott's puffy tumor is an urgent surgical intervention with a long period of adjuvant antibiotic therapy. Surgery involves incision and drainage of the abscess with debridement of the osteomyelitis bone and devitalized soft tissues. Endoscopic approaches have also been described. (7,8) Antibiotics are administered parenterally in high doses over a long period of time, typically 4-6 weeks.

CONCLUSION:

Frontal osteomyelitis (pott's puffy tumor) is a rare clinical presentation. It usually occurs as a complication of trauma or sinusitis. The prevalence of skull base osteomyelitis is 1.5% of all osteomyelitis. This is associated with a subperiosteal abscess. Early diagnosis and treatment are required to avoid neurological complications. A combination of effective surgical debridement and prolonged antibiotics in early termination of osteomyelitis provides complete resolution.

REFERENCES:

1. Masterson L, Leong P (2009) Pott's puffy tumor: a forgotten complication of frontal sinus disease. *Oral Maxillofac Surg* 13: 115-117.
2. McDermott C, O'Sullivan R, McMahon G (2007) An unusual cause of headache: Pott's puffy tumor. *Eur J Emerg Med* 14: 170-173
3. Jung J, et al. Endoscopic endonasal treatment of a Pott's puffy tumor. *Clin Exp Otorhinolaryngol* 2012; 5(2): 112-115.
4. Schwartz RH, Zingariello C, Levorson R, Myceros JS, Kamat R, et al. (2013) Pott puffy tumour in an unusual location. *OJPed3*: 147-150.
5. Morley AM (2009) Pott's puffy tumor: a rare but sinister cause of periorbital edema in a child. *Eye (Lond)* 23: 990-991.
6. Domville-Lewis C, Friedland PL, Santa Maria PL (2013) Pott's puffy tumor and intracranial complications of frontal sinusitis in pregnancy. *J Laryngol Otol* 1: S35-S38.
7. Monteiro M, Castillo R, Andre C, Santos M, Antunes L, et al. (2007) Pott's puffy tumor, a rare complication of frontal sinusitis. *Fr ORL* 93: 350-352.
8. Khan MM, Khwaja S, Bhatt YM, Karagama Y (2014) Pott's Puffy Tumour Complicating Frontal Sinus Osteoma – A Case for Combined Approach Surgery. *Otolaryngology* 4: 152-154.