

FATAL COMPLICATION OF FRONTAL SINUSITIS; POTT'S PUFFY TUMOR

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INTRODUCTION

Pott's Puffy Tumor (PPT) is a rare clinical entity characterized by subperiosteal abscess accompanied by osteomyelitis due to frontal sinusitis. This condition is usually not diagnosed at the beginning and can easily be mistaken for neoplasms, skin and soft tissue infections. This condition is usually observed in adolescents and is therefore considered rare in adults(1). Due to the widespread use of antibiotics, it is rarely seen in developed societies(2). In this case report, a 19-year-old male patient who was admitted to the emergency service with a complaint of swelling and headache on his forehead for the past month and was diagnosed with PPT due to complicated frontal sinusitis is described.

CASE REPORT

A 19-year-old male patient was admitted to the emergency service of the Kanuni Sultan Süleyman Training and Research Hospital with headache, swelling of the forehead and fever. Since the patient did not speak Turkish, anamnesis was taken by an interpreter. The patient had a recurrent headache for 4 months. Purulent nasal discharge has been added to this for the last 2 months. For the last month, swelling has developed on his forehead and there was a slight discharge from the swelling on the left. Sick Syrian refugee. He lived in unhealthy environments for about 1 year. She applied to the emergency department 2 months ago with headache and was treated for sinusitis. He could not take his medication for economic reasons. The patient has no known history of head injury or surgery. The patient applied to the emergency department with the increase in headache and fever.

In the physical examination of the patient, he was conscious, oriented and cooperative. Neurological examination of the patient was normal. The patient had an area of 3.5x3.5cm in the midline of the forehead and a 3x3cm area of soft consistency at the right eyebrow level. The lesion on the left eyebrow was more raised than the skin and there was crusting in the middle part (**Figure 1**).

There was WBC and CRP elevation in the laboratory tests of the patient. Sinusitis was detected in the left maxillary sinus and frontal sinus in the Brain Computed Tomography (BCT) of the patient. An abscess formation, which eroded the anterior wall of the frontal sinus, causing swelling in the forehead, also eroding the posterior wall of the frontal sinus and opening to the brain was detected (**Figure 2-3**).

After the first treatment of the patient, a consultation was made with a Neurosurgeon and an Otolaryngologist. The patient examination and treatment for the purpose of the Republic of Turkey Ministry of Health Istanbul Provincial Health Directorate was referred to the Istanbul Bağcılar Training and Research Hospital. Abscess drainage was performed with Functional Endoscopic Sinus Surgery (FESS) by the Otolaryngology department. Consulted with Neurosurgery. Neurosurgery did not consider additional surgery because the dura mater was intact. Antibiotic treatment was given to the patient (amoxicillin + clavulanic acid). The patient was called for control 3 months later. It was observed that the abscess did not recur.

DISCUSSION

PPT is a frontal osteomyelitis that accompanies the subperiosteal abscess in the frontal bone, and this "swollen" lesion occurs when the inflammation erodes the outer border of the frontal bone. While osteomyelitis secondary to sinusitis often develops in the maxilla in the first years of life, it often develops in the frontal bone in older children and adolescents. It is a rare complication in the adult age group. A systematic review of literature in 2020 reported 128 cases of PPT identified in adults (**3**).

Life-threatening complications can be seen in the event of delay in the diagnosis of PPT or inadequate antibiotic and surgical treatments. Among these complications, periorbital cellulitis, subperiosteal abscess and fistulization to the skin occur when the infection progresses towards the outer wall of the frontal bone. Skin fistulas, on the other hand, develop from the frontal region or the orbital region because the anterior wall and base of the frontal sinus are not resistant to infections. If the infection erodes the posterior wall of the frontal sinus, it can cause epidural, subdural or intracranial abscesses, meningitis, empyema, and cerebritis. If the infection is carried back with diploic veins, septic thrombophlebitis may develop and as a result sagittal sinus vein thrombosis can be seen (**4**).

In our patient, PPT secondary to frontal sinusitis was detected. In our patient, the frontal sinus posterior wall was eroded and the abscess was opened into the intracranial space. In the early diagnosis of this clinical condition, it is very important to choose the radiological imaging methods correctly and to perform them on time. Computed Tomography is the most preferred imaging method because of its good visualization of bone tissue and lesions. Computed tomography was preferred as the imaging method in our patient who presented with the complaint of swelling in the frontal region after sinusitis, and radiological images consistent with clinical suspicion were observed. Abscess drainage was done with FESS, an up-to-date technique performed by the Otolaryngology department (**5**).

CONCLUSION

In conclusion, Pott's puffy tumor is a sign of a potentially life-threatening infection of the frontal sinus, which may be accompanied by intracranial invasion. PPT should be kept in mind in the differential diagnosis of patients with poor socio-cultural level who present with swelling in the forehead.

Early diagnosis, appropriate antibiotic treatment and surgical abscess drainage applied in the early period in addition to these treatments are life-saving in PTT.

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Figure 1. A mass-looking lesion on the patient's forehead with a puffy, soft consistency from the skin.

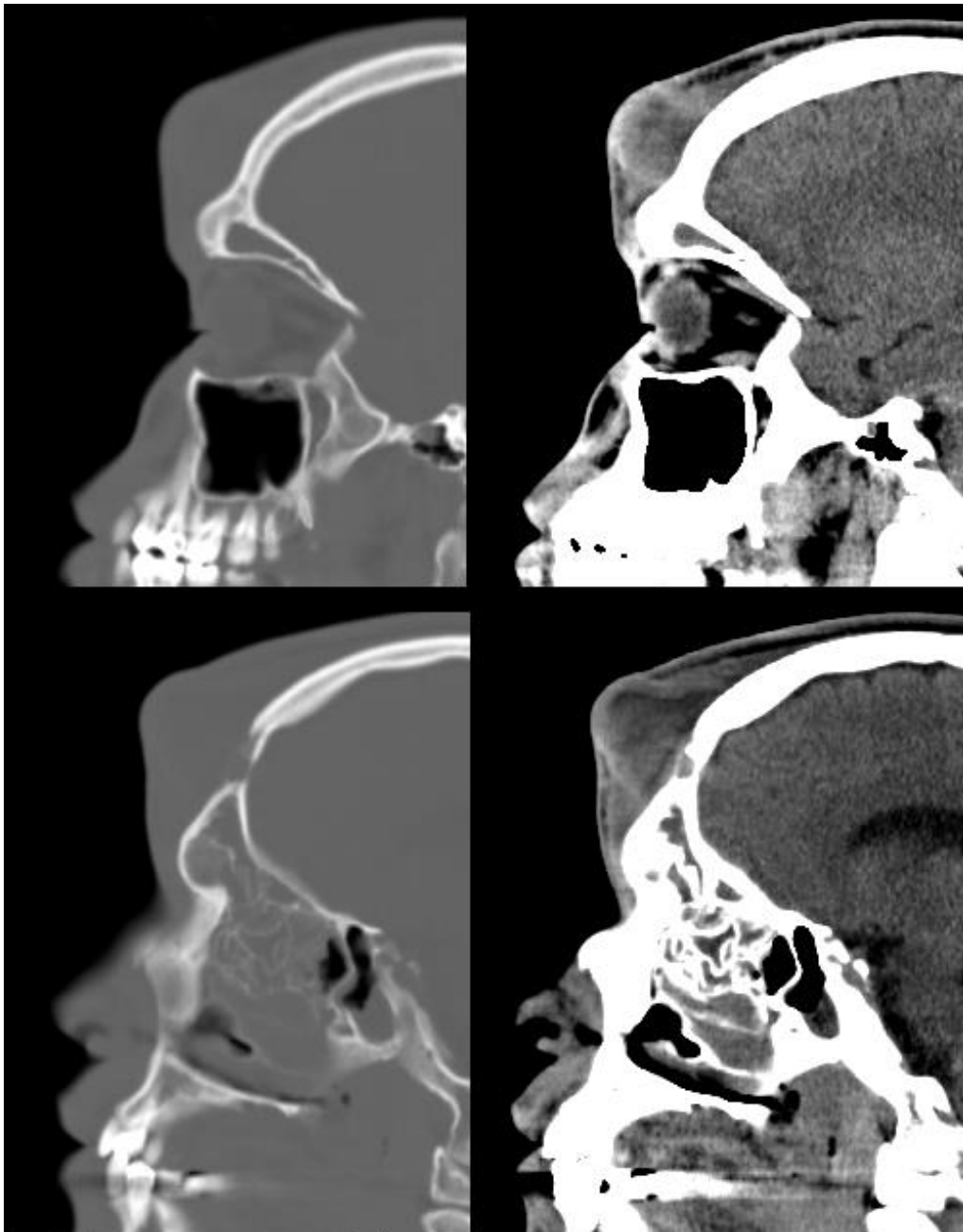


Figure 2. Cranial CT, Sagittal sections, bone and brain window. The appearance of an abscess forming a mass effect on the forehead and under the skin.

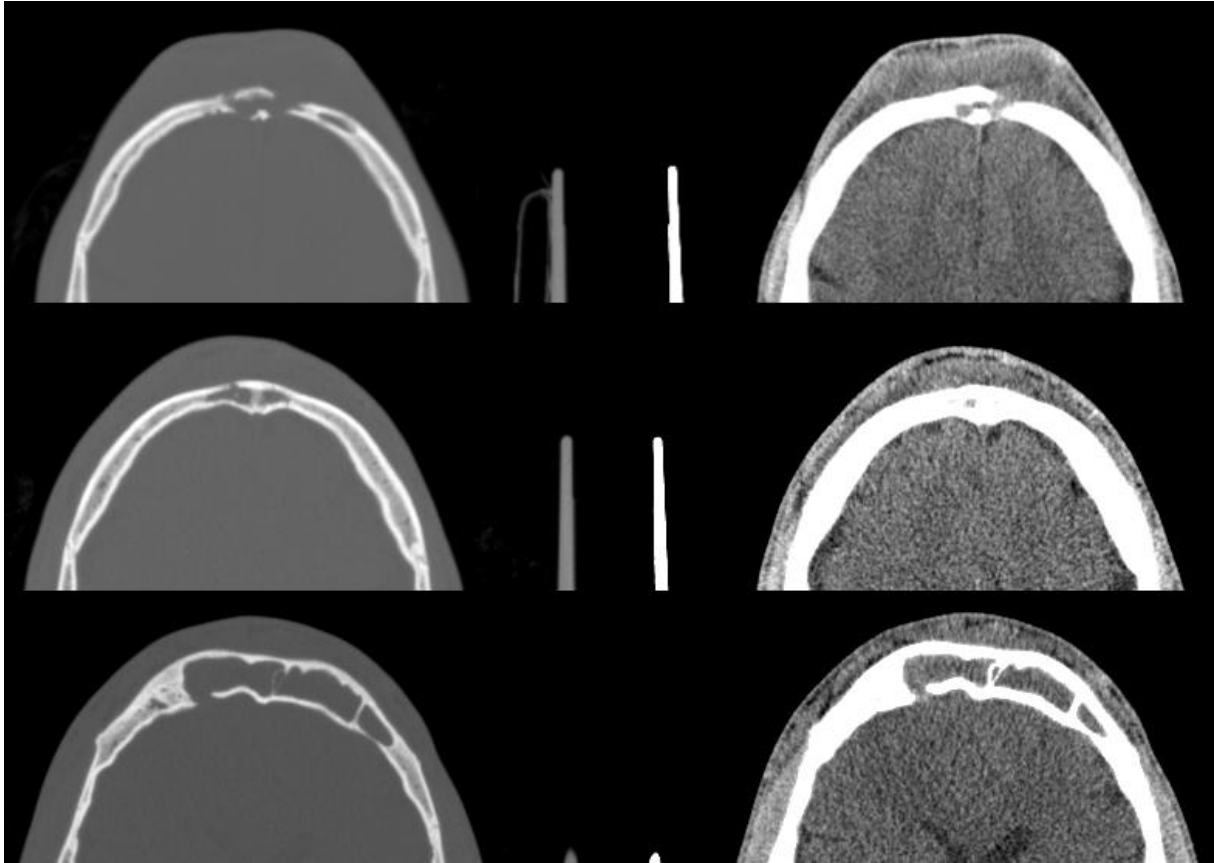


Figure 3. Cranial CT, Transverse section, bone and brain window. There is an abscess that opens under the skin by eroding the frontal sinus anterior wall and opening into the brain by eroding the posterior wall.