

Pott's Puffy Tumour: An Uncommon Complication of Frontal Sinusitis: Case Report

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Abstract

A subperiosteal abscess linked to frontal bone osteomyelitis characterizes Pott's puffy tumor, a rare disease. The most common diagnosis is frontal sinusitis. Initially going undiagnosed, this condition is frequently misdiagnosed as neoplasms, skin and soft-tissue infections, and infected hemorrhages. Even though Pott's puffy tumor is more typically described in children, it should be considered in the differential diagnosis of swelling on the forehead in adults. Thrombophlebitis, subgaleal frontal abscess, subdural empyema, and a Pott's puffy tumor in a 20-year-old male patient are the complications in this report. It was treated with antibiotics and abscess drainage and was cured.

Keywords: Frontal Sinusitis; Epidural Abscess; Puffy Tumor; Osteomyelitis

Introduction

The disorder known as Pott's inflated tumor is known to result from the osteomyelitis of the skull, which is typically caused by trauma or a frontal sinusitis. It may also be linked to a purulent buildup under the periosteum. This lesion, which Sir Percivall Pott first described in 1775, typically affects children [1]. In this article, we describe the case of a young man who suffered from a frontal sinusitis and afterwards developed Pott's puffy tumor.

Case Report

A 20-year-old man presented with an evolving right mass on the forehead that quickly progressed over the course of two weeks and was accompanied by headaches, convulsions, fever, and rhinorrhea. He didn't have a sinus infection or a head trauma. The physical examination revealed a fever (39°C), stable hemodynamics, and a 6 X 5 cm fluctuating mass over the right scrotum and above the frontal sinus with surrounding cellulite. Clinical examination results for the visual field, the eye, and the brainstem were all normal. A brain and sinus CT revealed a frontal sinusitis, osteomyelitis of the forehead with a sub-galeal abscess and an extradural abscess in the right orbit, and bilateral transverse sinus thrombosis (Figure 1 and 2). The patient required both surgical sinus drainage and extra-dural craniotomy drainage, after which the patient was placed under antibiotherapy with a broad probabilistic spectrum and then customized according to the antibiogram. Then a control IRM was implemented (See figure 3).

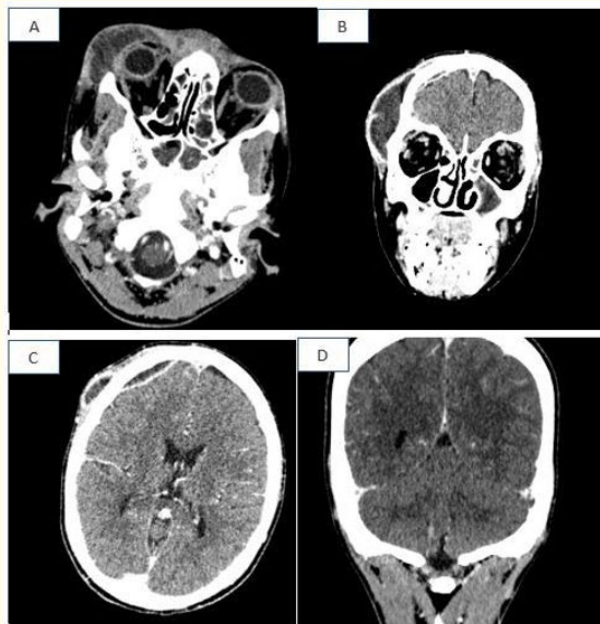


Figure 1: A) Contrast-enhanced CT through the orbits demonstrates frontal sinusitis as well as left pre-orbital cellulitis. B, C) Coronal and axial reconstructed image from CECT shows epidural abscess and subgaleal frontal abscess, D) Bilateral thrombosis of transverse sinuses.

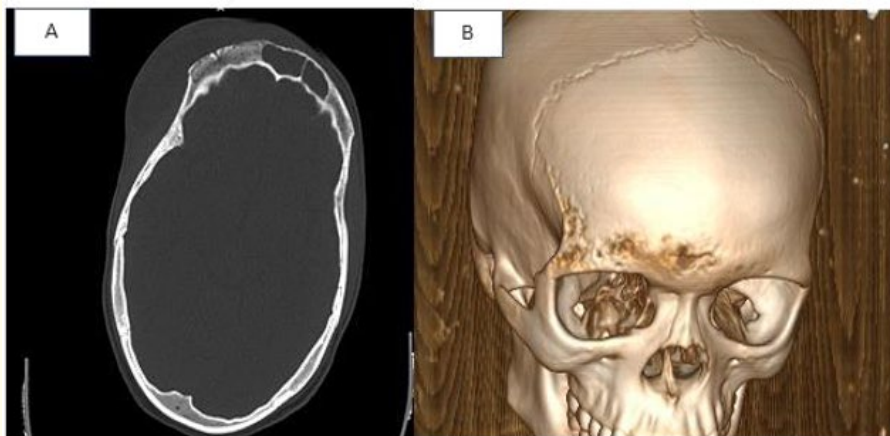


Figure 2: Axial CT bone windows (A), 3D Reconstruction 3D (B) Demonstrate extensive osteomyelitis of the right frontal bone.

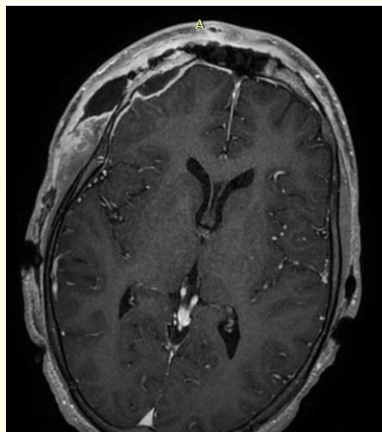


Figure 2: Axial CT bone windows (A), 3D Reconstruction 3D (B) Demonstrate extensive osteomyelitis of the right frontal bone.

Discussion

Frontal osteomyelitis caused Pott's puffy tumor, an extracranial, frontal, subperiosteal abscess. Typically, frontal sinusitis is the cause. A neurosurgeon from the eighteenth century named Sir Percival Pott initially referred to it as a bloated frontal mass [1]. Headache, fever, and a mass on the forehead in the patient following frontal sinusitis are common presentations for Pott's puffy tumor [2]. Adults with swelling on the forehead may also have infected hematomas, benign and malignant skin, soft tissue, bone, and frontal sinus tumors, as well as skin and soft tissue infections [3]. Even though Pott's puffy tumor is more typically described in children, it should be considered in the differential diagnosis of swelling on the forehead in adults.

Pott's puffy tumor is a risk factor for intracranial sequelae such as extradural abscess, subdural empyema, and intracerebral abscess. These problems have been reported in 60% to 85% of patients with Pott's puffy tumor a frontal, extracranial tumor [4,5].

Given its speed and accessibility, TDM is a good first tool for assessing patients in emergency rooms. CECT of the brain and small-section TDM of the orbits and sinuses must be performed. The investigation should be redirected to the coronal and sagittal planes in order to highlight the minute intraorbital and periorbital collections.

Given that the TDM without contrast typically increases radiation exposure without providing more diagnostic information, it shouldn't be used in a consistent manner. On the osseous CT windows, the osseous abrasions may be seen. The TDM with a small piece of the sinuses is a useful tool for diagnosing sinusitis and for demonstrating the anatomy of the sinuses, which is crucial for ENT interventions [6].

The IRM is superior for assessing the early stages of osteomyelitis as well as subcutaneous, intracranial, and intraorbital mucous tissue. Therefore, there should be a lower threshold for doing an additional IRM, especially for individuals with neurological or orbital symptoms [7,8].

To treat the abscesses and stop the spread of the disease, early intravenous treatment is essential. Antibiotic therapy alone is rarely sufficient, and surgical drainage is frequently required, several reports state that the surgical procedure used to treat Pott's enlarging tumor included debridement removal. Occasionally, a fronto-ethmoidectomy must be performed to drain the frontal and ethmoid sinuses using a fronto-nasal drainage tube. A Caldwell-Luc strategy could be used if it's necessary to also clear the maxillary sinus. Abscess may occasionally spread intracranially, requiring drainage. Thanks to recent advancements in functional endoscopy of the sinus, it is now

possible to surgically treat the Pott tumor caused by frontal sinusitis by combining endonasal and percutaneous surgery. We completely restored the patient's vision by using a combination of long-acting antibiotics, gentamycin beads, and abscess drainage [9-12].

To ensure that all issues have been resolved, patients must be monitored by imaging both during and after treatment. The preferred method is IRM, secondarily because of its higher sensitivity and lack of ionizing radiation. The TDM for follow-up care should only be used for patients who are not stable and who require a quick test to guide urgent care.

Conclusion

A seldom occurring consequence of frontal sinusitis is the Pott tumor. Serious intracranial and ocular problems may result from transcortical dissemination. Due to these potentially fatal consequences, early detection and treatment are essential.

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