Pott’s puffy tumor

- Pott's Puffy Tumor in the Adult Population: Systematic Review and Meta-Analysis of Case Reports
- Pott's Puffy Tumor: A Case Report of a Complication of Rhinosinusitis in the Pediatric Age
- A Pott's Puffs Tumor With Coexisting Intracranial Complications
- A Rare Case of Pott's Puffy Tumor in an Adult With Paranasal Osteoma and Pachymeningitis
- Pott's Puffy Tumor Associated with Subperiosteal Empyema and Osteomyelitis in a Pediatric Patient
- Trends in Complications of Pediatric Rhinosinusitis Before and During the COVID-19 Era
- Sinusitis
- Functional Endoscopic Sinus Surgery in Management of Pott's Puffy Tumor in a Pregnant Woman: A Clinical Case Report and Literature Review

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Subperiosteal abscess of the anterior wall of the frontal sinus associated with underlying frontal osteomyelitis.

It is named after Sir Percivall Pott, an English surgeon who described it in 1768

Pott's puffy tumor is an infrequent entity characterized by one or more subperiosteal abscesses associated with frontal bone osteomyelitis. Although cases in patients of all ages have been reported, teenagers are the most frequently affected. Early diagnosis and aggressive treatment are essential because of the high risk of severe neurological complications, such as epidural abscess, subdural empyema, and secondary septic thrombosis of the dural sinuses.

Pott's puffy tumor (PPT) and intracranial complications of sinusitis are considered rare in the post-antibiotic era.

Diagnosis

Findings show that a high index of suspicion for PPT should be applied to adolescents presenting with prolonged headache and frontal swelling. Contrast-enhanced computed tomography is an appropriate first tool for the evaluation; however, an magnetic resonance imaging should be performed to determine the necessity of intracranial interventional treatments if there is any suspicion of intracranial involvement. Complete recovery can be expected with appropriate antibiotic treatment and surgical intervention in most of the cases [1)].

Case series

2011

A computer search identified nine pediatric patients who were admitted to the hospital between October 2006 and July 2009. The patients' charts and imaging studies were reviewed. There were eight males (11-16 years old) and one female (9 years old). All patients presented with significant headache and fever. Only two patients had sinusitis symptoms. CT and MRI revealed sinusitis in seven patients. These patients were diagnosed with epidural abscess (six), subdural empyema (one), PPT (five), focal meningitis (six), and orbital cellulitis (four). Two patients did not have sinusitis on the day of admission, but were treated recently for sinusitis. These two patients presented with frontal epidural abscess, PPT, thrombosis of the superior sagittal sinus, and frontal bone osteomyelitis. All patients were treated with a multidisciplinary approach and had good outcome with no residual neurologic deficits. Complications of sinusitis are not rare in the studied population. The presentation may be misleading. Therefore, a high index of suspicion is needed, particularly in adolescent males who present with significant headache and fever. Evaluation with contrast-enhanced CT of the brain, sinuses, and orbits should be done first, followed by MRI examinations [2].

Case reports

A 6-year-old boy with a medical history of anterior cranial vault remodeling presenting with localized forehead swelling. Computed tomography imaging demonstrated mucosal thickening and a region of dehiscence in the wall of the frontal sinus; the presence of midline subperiosteal abscess was consistent with a diagnosis of PPT. Due to concerns for intracranial involvement, they utilized removal and replacement of the anterior wall of the frontal sinus, complete removal of sinus mucosa, and frontal sinus obliteration with bilateral peri-cranial flaps. This is the first case description of a PPT secondary to cranial vault reconstruction in a patient with metopic craniosynostosis [3]

A 3-year-old patient who developed multifocal abscesses in the epidural space with frontal and orbital SPA, requiring surgical intervention. Additionally, her course was complicated by a superior sagittal venous thrombosis, a complication commonly associated with PPT. We present an unusual case of orbital SPA and aim to highlight a life-threatening pediatric condition that is often underrecognized [4]

A 12-year-girl following an insect bite. The patient presented with painful forehead swelling for 4 weeks without any history of head trauma or signs of sinusitis. She had a history of a purulent pimple 2 months before presentation, following an insect bite. The primary diagnosis of PPT was made based on clinical and imaging findings. The patient was treated surgically and medically with intravenous antibiotics and had a satisfactory recovery upon the 6-month follow-up visit. This case highlights the differential diagnosis and thorough evaluation for PPT in a child with acute headache and forehead swelling, even without sinusitis symptoms [5]

Apostolakos D, Tang I. Image Diagnosis: Pott Puffy Tumor. Perm J. 2016 Summer;20(3):15-157. doi: 10.7812/TPP/15-157. Epub 2016 Jun 24. PMID: 27352411; PMCID: PMC4991902.

A case of a patient with a subperiosteal abscess resulting from sinusitis, with orbital and intracranial extension, and subsequent neurological complications. Despite modern methods of diagnosis and treatment, 13 new cases have been published in the last 5 years; in at least 3 (23%) of these cases there were serious neurological complications. Upper respiratory infections and sinusitis are leading causes of visits to the emergency department in the paediatric age group; however, no risk factors for poor outcome have so far been identified in any of these patients [6].

1)
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2)
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Shabih S, Lewis B, Koenig ZA, Brooke SM, Meltzer H, Uygur HS. Pott Puffy Tumor Secondary to Cranial Vault Reconstruction in a Patient With Metopic Craniosynostosis. J Craniofac Surg. 2023 Nov 8. doi: 10.1097/SCS.0000000000009815. Epub ahead of print. PMID: 37938063.
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Kuhar BG, Dunn TM, Liming BJ, Yakopson VS. Pott's Puffy Tumor: A Rare, Life-Threatening Presentation of Periorbital Edema. Mil Med. 2023 Nov 3;188(11-12):3696-3698. doi: 10.1093/milmed/usad291. PMID: 37489872.
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6)
Guillén A, Brell M, Cardona E, Claramunt E, Costa JM. Pott's puffy tumour: still not an eradicated entity. Childs Nerv Syst. 2001 May;17(6):359-62. PubMed PMID: 11417418.