



The Mind Boggling Case of a Boggled Mind: A Case Report

Ellen Ratliff, MD

Pediatrics Chief Resident

LSUHSC Shreveport

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Chief Complaint

- ▶ 14 year old male brought to the ED by his grandmother for severe headache

History of Present Illness

- ▶ 1 week of flu-like symptoms including cough, congestion, headache, and decreased appetite prior to this evaluation
- ▶ Flu positive 1 week ago
- ▶ Previously feeling better but then developed sudden worsening of headache

Past Medical History

- ▶ No significant past medical or surgical history
- ▶ Completed recent course of oseltamivir, no regular medications
- ▶ Developmentally normal, although in special education classes for "comprehension problem"

ED Course

- ▶ Noted to be afebrile, hypertensive, and tachycardic
- ▶ Waiting room: patient had a generalized tonic-clonic seizure with prolonged post-ictal period
- ▶ Trauma bay: combative, had 2nd generalized tonic-clonic seizure
- ▶ STAT CT head: No acute intracranial process, however near complete opacification of left frontal, ethmoid, sphenoid, and maxillary sinuses and thickening of mucosa of right sinuses.
- ▶ Blood: CBC with leukocytosis (24K), CMP and procalcitonin unremarkable
- ▶ CSF: elevated protein, glucose, and mildly elevated WBC
- ▶ Started on levetiracetam, ceftriaxone, and acyclovir and transported to PICU

PICU Course

- ▶ On arrival: disoriented, confused, febrile to 102.3F
- ▶ MRI brain: leptomenigeal enhancement
- ▶ CSF viral panel negative
- ▶ Initially started on cefepime and vancomycin, transitioned to ceftaroline and metronidazole per ID recs
- ▶ Continued on maintenance levetiracetam per neuro recs
- ▶ Mental status improving & no new seizure activity - transferred to floor

Wards Course

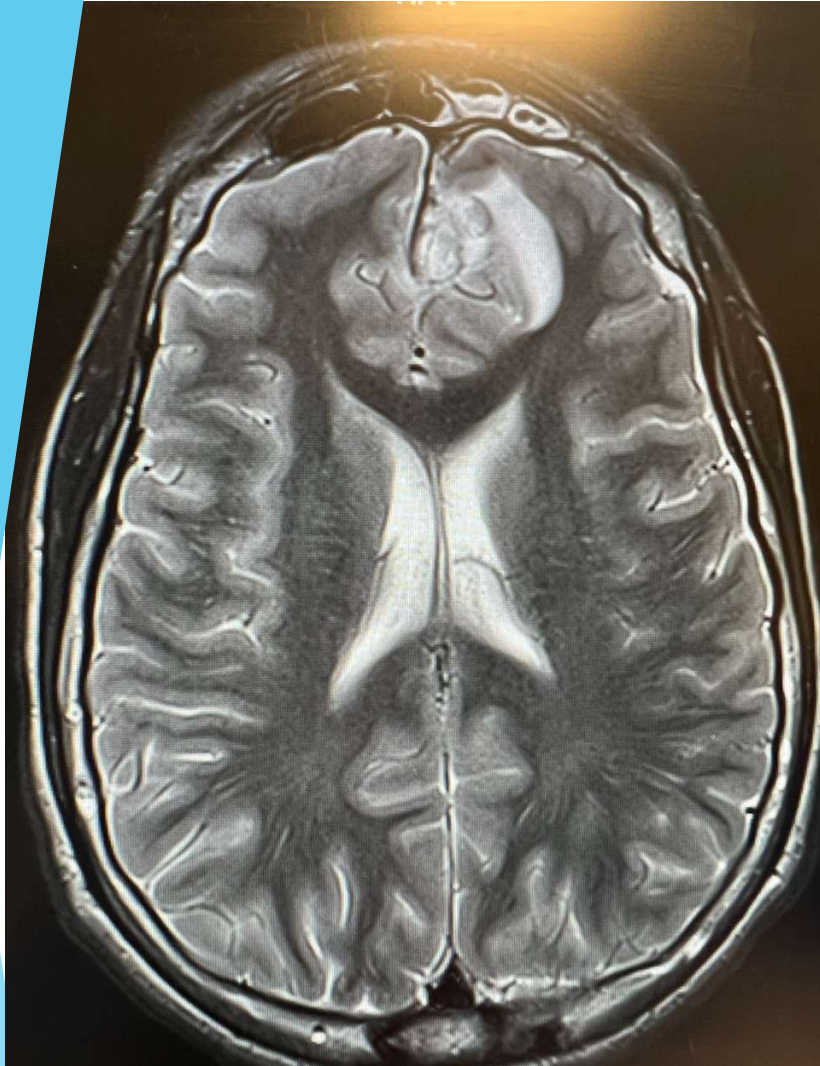
- ▶ Blood & CSF cultures remained NGTD
- ▶ EEG: normal
- ▶ Fever curve and mental status improving, however persistent headache and vomiting
- ▶ Plan was for repeat head imaging in the AM for re-evaluation until...

Overnight Event

- ▶ Acute worsening of mental status:
 - ▶ No voluntary movement of R arm
 - ▶ Progressively less responsive to questioning/verbal commands
 - ▶ Slurred, unintelligible speech
 - ▶ Twitching of extremities
 - ▶ Mild L-sided facial drooping
- ▶ Taken for stat CT
- ▶ On return, had 3-minute generalized tonic-clonic seizure
- ▶ Given lorazepam & transferred back to PICU

Imaging

- ▶ STAT CT head: frontal sinus erosion with cerebritis
- ▶ STAT MRI brain: intracranial abscess



Imaging

- ▶ STAT CT head: frontal sinus erosion with cerebritis
- ▶ STAT MRI brain: intracranial abscess
- ▶ Taken to OR for emergent craniotomy with neurosurgery

Further Management

- ▶ Mental status immediately improved post-op
- ▶ Blood, CSF, and intra-op cultures remained no growth to date
- ▶ 6 weeks of ceftaroline and metronidazole post-op
- ▶ Nasal saline irrigations + fluticasone until outpatient surgical management with ENT
- ▶ Repeat imaging after 4 weeks of antibiotics: significant improved with small amount of residual fluid
- ▶ Repeat imaging ~3 months later: no re-accumulation of abscess
- ▶ At subsequent follow-up appointments, was virtually back to baseline

The background features several blue geometric shapes. A large, bright blue trapezoid is on the right side, with a darker blue vertical strip to its right. A thin, light blue line runs diagonally across the lower right. On the left, there are partial blue shapes, including a light blue triangle at the bottom and a darker blue shape at the top.

Final Diagnosis: Pott's Puffy Tumor



Pott's Puffy Tumor

- ▶ Subperiosteal abscess of anterior wall of frontal sinus with underlying frontal osteomyelitis
- ▶ Rare, but more common in adolescents
- ▶ Risk factors
 - ▶ Acute or chronic sinusitis
 - ▶ Recent head trauma

Pathogens in Pott's Puffy Tumor

Pathogen	No. (%)
<i>Streptococcus</i> species	44 (39.7%)
<i>Staphylococcus</i> species	11 (12%)
<i>Fusobacterium</i>	11 (12%)
<i>Pseudomonas</i>	3 (3.2%)
<i>Klebsiella</i>	1 (1%)
<i>Actinomyces</i>	1 (1%)
Sterile	21 (22.5%)
NA	8 (8.6%)
Not sent	2 (2.1%)

Management

- ▶ CT is diagnostic choice, but MRI is better for intracranial involvement
- ▶ Treatment: surgery + antibiotics
- ▶ Prognosis: majority have full recovery without residual neurologic deficit

Learning Points

- ▶ Pott's puffy tumor is a rare but present complication of sinusitis
- ▶ Early detection & intervention is critical to prevent long-term consequences, particularly in the presence of intracranial abnormalities
- ▶ In general, if the current treatment plan is not improving the patient's clinical status, broaden the differential

References

- ▶ Koltsidopoulos, Petros, et al. “Pott's Puffy Tumor in Children: A Review of the Literature.” *The Laryngoscope*, vol. 130, no. 1, 2018, pp. 225-231., <https://doi.org/10.1002/lary.27757>.
- ▶ Tsai, BY., Lin, KL., Lin, TY. *et al.* Pott's puffy tumor in children. *Childs Nerv Syst* **26**, 53 (2010). <https://doi.org/10.1007/s00381-009-0954-z>
- ▶ Onesimo, R., et al. “Pott's Puffy Tumour by Streptococcus Intermedius a Rare Complication of Sinusitis.” *Case Reports*, vol. 2011, no. oct16 1, 2011, <https://doi.org/10.1136/bcr.08.2011.4660>.

Thanks!

The image features a white background with several abstract blue geometric shapes. A large, bright blue parallelogram is positioned on the right side, tilted slightly. To its left, a smaller, lighter blue triangle is partially visible. A thin, light blue line runs diagonally across the lower portion of the image, intersecting the larger blue shape. The overall design is clean and modern.