Fusobacterium Brain Abscess: An Absolute Headache

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BACKGROUND

- Headache is one of the most common complaints in the Emergency Department (ED), accounting for 1-4.5% of all visits, and around 42% of all neurology cases presenting in the ED.
- The majority of atraumatic headache presentations (approximately 98%) are determined to be benign in nature.
- Unfortunately, the 2% of patients with significant intracranial pathology can be difficult to discern, mandating vigilance when assessing these patients.
- We present a case of a patient presenting with an atraumatic headache, who was ultimately diagnosed with a bacterial brain abscess.

PATIENT DESCRIPTION

- A 37-year-old male presented to the emergency department (ED) complaining of a headache of 11 days duration.
- He described this headache as “the worst headache he has ever had,” experiencing associated nausea, vomiting, and diaphoresis.
- He believed there was some relief after drinking beer a few evenings prior to presentation.
- He had been evaluated twice in the previous week in other EDs and diagnosed with vascular headache.
- On his third visit to the ED, the patients wife stated that he had behavioral changes and difficulty concentrating.
- Vital signs and physical exam were unremarkable, without any neurological deficits or localizing signs of infection. Pain intensity was 10/10
- A head CT without IV contrast was performed at this point which revealed a posterior temporal necrotic mass with large surrounding edema, concerning for primary malignancy, metastatic disease, or infection (Figure).

INTERVENTION

- MRI of the brain was performed which better characterized the lesion as a 3.4 cm rim enhancing lesion, likely a cerebral abscess.
- The patient was admitted to neurosurgery and started on cefepime, vancomycin, and metronidazole. He underwent a right-sided craniotomy with evacuation of abscess revealing purulent material which was cultured, with gram stain revealing gram-negative rods.
- Cultures grew *Fusobacterium nucleatum*, an anaerobic, gram-negative non-spore forming bacilli found in human oral flora.
- After a course of antibiotics, the patient had a full recovery.

CONCLUSIONS

- Bacterial brain abscesses are a rare cause of intracranial pathology in immunocompetent patients.
- Most bacterial brain abscesses present with fever and focal neurological deficits. However, as in this case, patients may present with minimal symptoms.
- Clinical gestalt, as well as the patient’s persistence in presentation, resulted in an early diagnosis and treatment with an excellent clinical outcome.
- When found early, fusobacterium brain abscesses are treated effectively with surgical drainage and a lengthy course of IV antibiotics.

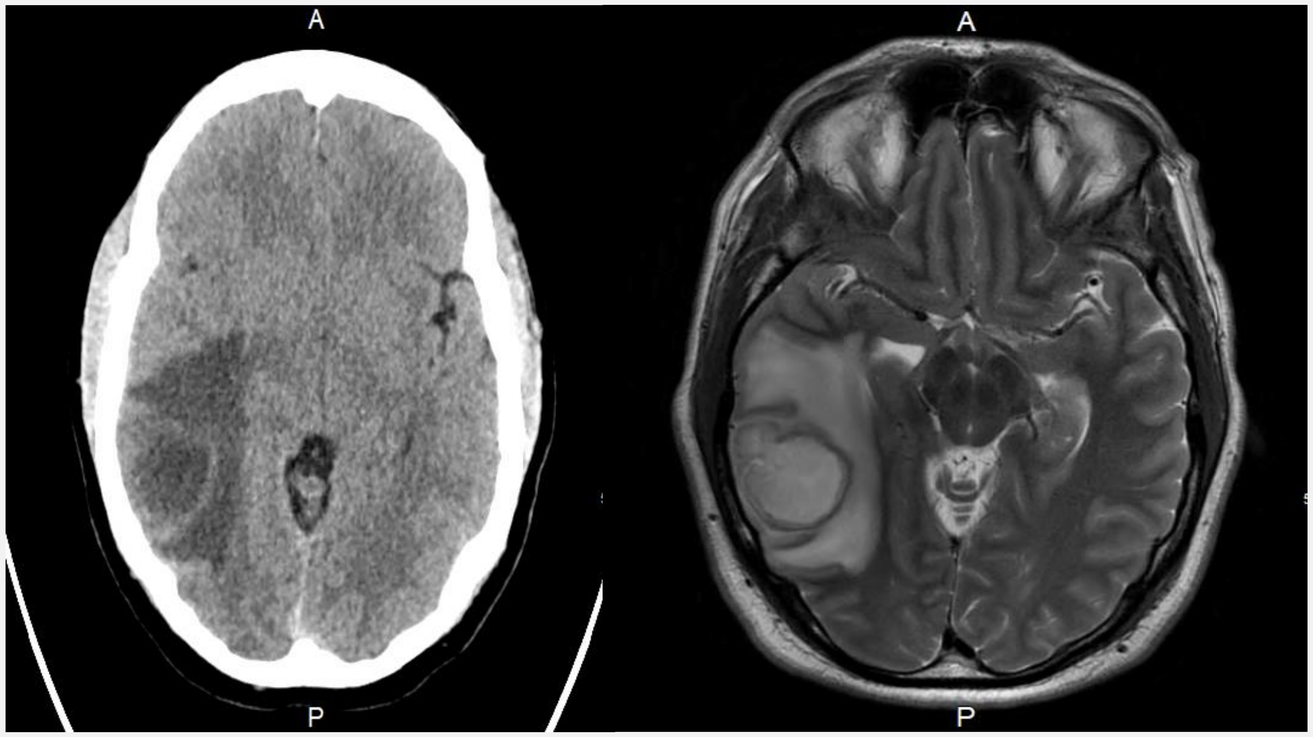

Figure. A head CT without IV contrast was performed at this point which revealed a posterior temporal necrotic mass with large surrounding edema, concerning for primary malignancy, metastatic disease, or infection. MRI with and without contrast of the brain was performed which better characterized the lesion as a 3.4 cm rim enhancing lesion, likely a cerebral abscess.