Headache in a Collegiate Golfer after Dental Procedures

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HISTORY
An 18-year-old male college golfer presented to the athletic training facility (ATF) DAY 6 after a root canal to his right lower molar (tooth #30) with complaint of headache for several days. His headache pain was located behind both eyes, and was controlled with acetaminophen. He denied fever or vision changes. He was taking amoxicillin/clavulanate 575/125 BD (day 6/10) prescribed by his dentist for possible infection post procedure (DAY 6 physical exam located below).

PHYSICAL
Vital Signs: T-98.9°F, HR 68, BP 111/78
Head- NCAT
Eyes- FERRL, EOMI, vision normal, no proptosis
ENT: Hearing normal, external auditory canals & tympanic membranes normal, oropharynx clear without exudate or PND; No nasal congestion, No frontal and maxillary sinus tenderness, Teeth and gums were normal and suture sight on right lower jaw with no sign of infection. No tenderness to palpation of lower molars. No lymphadenopathy.
Neck: supple and non-tender with normal flexion extension, and rotation
Heart: RRR, no murmurs, gallops, or friction rub
Lungs: CTA bilaterally, no wheezing or crackles
Skin: No rash or wounds
Neurological Exam: A0x3; speech, concentration, attention normal, anterograde and retrograde memory intact; CN2-12, DTR’s, balance, and cerebellar testing normal

Due to his leaving on a multi-city trip that day, he was advised to continue amoxicillin/clavulanate and acetaminophen, keep-in-touch by phone, seek medical attention out-of-town if headache worsened, and follow-up when he returned to town.

DAY 8- Patient called athletic trainer with complaint of continued headache and advised to go to an ED. The out-of-town ED diagnosed him with a migraine. After symptom relief with narcotics, he was discharged home to f/u with PCP. No imaging obtained.

DAY 9-13- Headaches continued and he began to have difficulty remembering where he was and finding rooms in the apartment he was staying.

DAY 14- Returned home and saw dentist who extracted tooth #30 due to abscess and began another 10-day course of amoxicillin/clavulanic acid.

DAY 16- Went to ATF with pain behind right eye worse with movements while playing golf. Patient also complained of mouth pain, intermittent fevers (Tmax 102.6°F) during the previous five days, balance difficulty, and confusion. Vitals and neuro exam were normal. Laboratory studies and MRI ordered.

DIFFERENTIAL DIAGNOSIS
- Headache from dental abscess
- Meningitis
- Migraine headache
- Subarachnoid hemorrhage
- Tension headache
- Intracranial abscess
- Encephalitis (viral)

LABS AND RESULTS
- CSF cultures and serologies negative for: Lyme’s, Syphilis, Toxoplasma, Cryptococcus, CMV, EBV, West Nile, Enterovirus, fungal growth, bacterial growth
- Positive for: HSV-1 by PCR
- EEG: diffuse background slowing and some paroxysmal slowing from the temporal regions, R>L

IMAGING
MRI DAY 16: Serial axial FLAIR neuroimages of the temporal lobe demonstrating increased signal involving the right anterior temporal lobe (RAT) and the right mesiotemporal lobe including the right hippocampus extending along the right fimbria (RMT). This also involves the posterior left hippocampus (LMT) to a lesser extent. There is some hypointense signal within the right hippocampus suggesting possible internal necrosis (arrow).

MRI DAY 132: Serial axial FLAIR neuroimages of the temporal lobe demonstrating progressive gliosis and atrophy (arrows) of the right anterior temporal lobe (RAT), and also decreased signal in the mesial right medial temporal lobe with progressive gliosis and atrophy of the right hippocampus (RMT). There is additional progressive gliosis and atrophy of the left posterior hippocampus/parahippocampal (LMT).

TREATMENT
IV Acyclovir 10 mg/kg q8hr for 21 days total

RETURN TO ACTIVITY & FOLLOW UP
- DAY 38- MRI completed after 21 day acyclovic PICC line treatment, showed improvement of bilateral medial temporal lobe edema left> right. Patient received an additional 2 week course of valacyclovir 1g tid p.o. Allowed to return to golf.
- DAY 150- No headache or memory symptoms, the patient reported a successful return to golf both stateside and internationally without symptoms and normal neurological function.
- Patient will have follow up at 12 months post infection +/- MRI depending on how he is doing clinically
- Patient will need yearly follow up to assess for possible sequelae such as memory deficits or seizures induced by the damage of the HSV encephalitis

FINAL WORKING DIAGNOSIS
HSV-1 meningoencephalitis