A Subdural Empyema Presenting with Paresthesias and Headache

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Introduction

Cranial Subdural Empyema

- Suppurative intracranial infection between dura and arachnoid
- Origin is most commonly ototrinologic infections, especially paranasal sinuses.
- Other sources include mastoid/middle ear, skull trauma, neurosurgery and infection of preexisting subdural hematoma
- Microorganisms: aerobic streptococci, staphylococci, aerobic gram-negative bacilli, and anaerobes. Polymicrobial infections are common.

Case Presentation

History: A 54 year old man presented to EMS with a focal seizure with tonic-clonic movements of his right leg, followed by generalized seizure with LOC.
- Reported paresthesias in RLE and constant headache for 3 days prior
- Transfered to ICU
- Blood cultures
- Suppurative infections are common.

- Non
- Broad
- Leukocytosis with left shift
- 397 nucleated cells with a neutrophil predominance, elevated
- Declining dentist to population ratio since 1990 as well as uneven
- clot in left lateral ventricle requiring
- EEG showed generalized background suppression without frank
- Microbiology:
- Blood cultures – Streptococcus anginosus and Fusobacterium sp.
- CSF – 397 nucleated cells with a neutrophil predominance, elevated protein, normal glucose, normal gram stain & culture

Course:

- Broad-spectrum antibiotics and phenytoin
- Left partial cranectomy with evacuation of empyema
- Subdural pus cultures grew Fusobacterium sp. and Actinomyces sp.
- Complicated by subgaleal clot in left lateral ventricle requiring extraventricular drain placement
- Exubated, antibiotics narrowed to ceftriaxone and flagyl with outpatient removal of remaining teeth

Imaging

- FIGURE 1. CT revealing opacified maxillae around the roots of teeth in the right maxilla consistent with apical abscesses

- FIGURE 2. MRI demonstrating subdural collection with peripheral enhancement and restricted diffusion over left frontal and parietal lobes, suggestive of subdural empyema

References


Discussion

Frequency of clinical manifestations in 66 patients with subdural empyema

<table>
<thead>
<tr>
<th>Symptom or sign</th>
<th>N (%) of patients</th>
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<tbody>
<tr>
<td>Fever</td>
<td>63 (96)</td>
</tr>
<tr>
<td>Headache</td>
<td>57 (86)</td>
</tr>
<tr>
<td>Meningismus</td>
<td>55 (83)</td>
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<tr>
<td>Decreased mental status</td>
<td>50 (76)</td>
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<tr>
<td>Seizure</td>
<td>29 (44)</td>
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<tr>
<td>Sinus tenderness, swelling, or inflammation</td>
<td>28 (42)</td>
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<tr>
<td>Nausea or vomiting</td>
<td>18 (27)</td>
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<tr>
<td>Homonymous hemianopsia</td>
<td>12 (18)</td>
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<tr>
<td>Speech difficulty</td>
<td>11 (17)</td>
</tr>
<tr>
<td>Papilledema</td>
<td>6 (9)</td>
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</tbody>
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Barriers and consequences of lack of dental care in elderly/disabled

- Poor dentition is a chronic illness with impacts ranging from poor nutrition and chronic craniofacial pain to life-threatening infections
- 23% of 65-74 year olds have severe periodontal disease
- Non-Hispanic black persons (35.8%) and Mexican-American persons (36.4%) both have twice the prevalence of untreated cases compared to non-Hispanic whites (17.8%)
- For adults ages 51 years and older, out-of-pocket dental expenditures over a 2 year period averaged $776 for those with insurance and $1126 for those without.
- Government health insurance offers few dental options for older American adults, providing only limited treatment deemed “medically necessary”
- Declining dentist to population ratio since 1990 as well as uneven distribution favoring urban areas