Concurrent Atlantoaxial Septic Arthritis and Septic Thrombosis of the Ophthalmic Vein due to *Staphylococcus aureus*: A Case Report and Review of the Literature

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Case Presentation

History of Present Illness
- 68 year-old man with hypertension presented with a 4-day history of worsening neck pain, right shoulder pain and one episode of diplopia
- He reported left wrist pain and swelling 3 weeks prior to presentation
- Temperature increased to 39.2°C within hours of admission

Physical Exam
- Right eye ptosis and right cranial nerve VI palsy
- Severe cervical tenderness and stiffness
- Right shoulder with erythema, tenderness and decreased range of motion
- Left wrist with mild swelling and tenderness

Diagnostic Tests
- WBC: 14.8 x 10^9/µL with 89% neutrophils (Normal range: 1.0-10)
- ESR: > 120 mm/h
- CRP: > 190 mg/L
- Blood cultures grew *Staphylococcus aureus* (MSSA)
- TTE with no valvular lesions or vegetations
- TTE with no valvular lesions or vegetations
- Staphylococcus aureus
- CRP: > 190 mg/L
- ESR: > 120 mm/h
- WBC: 14.8 x 10^9/µL

Imaging Studies

Whole body 18FDG-PET/CT scan
- Abnormal hypermetabolic activity in the atlanto-axial joint (A) and right shoulder (B)

MRI of orbits
- Right superior ophthalmic vein thrombosis detected as (C) hyperintensity within right superior ophthalmic vein before gadolinium (arrow) and absence of contrast within the right superior ophthalmic vein after gadolinium (D)
- No evidence of cavernous sinus thrombosis

Previously Reported Cases of Atlantoaxial Septic Arthritis (AASA) & Superior Ophthalmic Vein Thrombosis (SOVT)

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>AASA N = 6</th>
<th>SOVT N = 6</th>
<th>AASA &amp; SOVT (This report)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age in years (average, range)</td>
<td>62 (53 – 76)</td>
<td>63 (49 – 80)</td>
<td>68</td>
</tr>
<tr>
<td>Male</td>
<td>5 of 6</td>
<td>2 of 6</td>
<td>1</td>
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<tr>
<td>Pathogen</td>
<td>5. aureus</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>Other</td>
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<td>1</td>
</tr>
<tr>
<td>Unknown or not specified</td>
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<tr>
<td>Invasive Procedures</td>
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<td>3</td>
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<tr>
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</tr>
<tr>
<td>Major procedure</td>
<td>4</td>
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<tr>
<td>Length of Therapy</td>
<td>7 – 14 days</td>
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<tr>
<td>6 – 12 weeks</td>
<td>6</td>
<td>2</td>
<td>1</td>
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<tr>
<td>Outcomes</td>
<td>Recovered</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>Improved with sequelae</td>
<td>1</td>
<td>3</td>
<td>1</td>
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<tr>
<td>Deceased</td>
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Treatment & Outcomes

- Surgical debridement of right shoulder
- Worsening right arm weakness and numbness while on IV antibiotics
- Repeat MRI showed atlantoaxial instability
- He underwent C1-C4 arthrodesis and fixation
- Resolution of visual symptoms
- Neck stiffness is the only sequela
- After completing 10 weeks of IV cefazolin, remains on long-term suppression with oral cephalixin

Discussion & Conclusion

- To the best of our knowledge, this is the first report of concurrent atlantoaxial septic arthritis and septic thrombosis of the ophthalmic vein
- In this case, early recognition, prompt initiation of appropriate antibiotic therapy and surgery prevented long-term sequelae often associated with these conditions

References


Pietris, F. et al. Superior ophthalmic vein thrombosis Developed after Orbital Cellulitis. *BMJ Case Rep* 2017; 0:1.}

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