Seeing Is Believing: Diffuse Large B-cell Lymphoma Presenting as Horner Syndrome and Syncope
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Introduction

- Horner syndrome (HS) consists of the classic triad of symptoms: miosis, ptosis, and anhidrosis.
- The oculosympathetic pathway is made up of a three-neuron system – central, preganglionic, and postganglionic – and HS can be caused by a lesion anywhere along this pathway (Figure 2).
- Diffuse large B-cell lymphoma (DLBCL) commonly presents in the form of a mass due to its aggressive nature and rapid growth.
- Here we present an unusual case of DLBCL with initial manifestation due to Horner syndrome and syncope.

Case Presentation

- A 66-year-old previously healthy woman presented to her PCP with right-sided ear pain and was treated supportively for eustachian tube dysfunction. Her symptoms persisted and one month later she presented to the ED following a syncopal event. On arrival, her vitals were notable for a mild tachycardia. Physical exam was notable for right-sided ptosis and miosis but was otherwise non-focal. CT head was normal, but CT neck revealed a right neck mass with narrowing of the nasopharyngeal airway.

<table>
<thead>
<tr>
<th>Neuron</th>
<th>Pathology</th>
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</thead>
<tbody>
<tr>
<td>Central</td>
<td>Stroke (hypothalamus, LMS), tumor, spinal cord demyelination</td>
</tr>
<tr>
<td>Preganglionic</td>
<td>Apical lung tumors, brachial plexus injury, subclavian artery aneurysm, trauma</td>
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<tr>
<td>Postganglionic</td>
<td>ICA (dissection, aneurysm, trauma, tumor), cluster headache, cavernous sinus lesion</td>
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</tbody>
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Table 1: Differential diagnosis of Horner syndrome based on order of neuron. ICA = internal carotid artery; LMS = lateral medullary syndrome

Clinical Course

- CT-A neck was obtained that demonstrated encasement and displacement of the right cervical internal carotid artery by mass (Figure 1c).
- Fine needle aspiration of the mass was performed and the pathology was suggestive of lymphoma.
- The patient subsequently had an incisional biopsy that revealed the final diagnosis of DLBCL.
- She was initiated on treatment with R-EPOCH (rituximab, etoposide, prednisone, vincristine, cyclophosphamide, and doxorubicin).
- Lumbar puncture was performed and CSF studies were negative for CNS involvement.
- Follow up CT neck two months later showed significant treatment response and reduction in mass size.
- With initiation of chemotherapy, the patient’s syncopal episodes resolved.

Discussion

- Causes of HS range from benign to life-threatening, and neck imaging is essential to rule out mass or carotid dissection (Table 1).
- The majority of HS cases are caused by a second- or third-order neuron lesion, as was the case for our patient.
- Her syncope was explained by mass effect on the right carotid sinus; her HS was likely due to disruption at the superior cervical ganglion.
- Carotid artery invasion is commonly seen in squamous cell carcinoma, while only a few case reports exist describing involvement with DLBCL.

Key Points

- It is important to keep malignancy at the top of the differential diagnosis in adults presenting with neck mass.
- HS with neck pain should be treated as carotid artery dissection until proven otherwise.
- Swift recognition of HS is essential to not only diagnose the underlying cause but to prevent neurologic morbidity.

References