Beware: Ptosis with Exophthalmos

Analysis of Ocular Myasthenia Gravis and Thyroid Eye Disease

A rearview perspective

Wade Reardon, MD
Resident Physician, MUSC Storm Eye Institute
Dr. Pamela Chavis, MD, project advisor
Financial Disclosures

- None
Purpose

- To examine:
  - The co-existence of Thyroid eye disease with Ocular myasthenia
  - Time to co-diagnosis
  - Potentially life threatening complications
Background

**Thyroid Eye Disease**

1. Current or treated thyroid dysfunction
2. Orbital signs
3. Radiographic evidence of myopathy

**Need 2 of the 3 signs**

- Graves
- Hashimoto’s
- Circulating antibodies

**Thyroid Eye Disease—Orbital signs**

- Lid retraction
- Lid lag
- Proptosis
- Myopathy of Extraocular muscles
- Compressive optic neuropathy

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Background

- Myasthenia Gravis– fluctuation and fatiguability (ocular)³
  - Ptosis (fatiguing)
  - Cogan’s Lid twitch
  - Enhancement of ptosis
  - Diplopia (variable degrees on serial exams)
  - Obicularis oculi weakness

- Incidence roughly 1:10,000 to 1:50,000

Background

- Myasthenia Gravis\textsuperscript{3,4,5}: Important to recognize
  - 85% of pts with ocular MG $\rightarrow$ systemic disease in 2 years
  - 20% will need intubation and/or ventilator support due to myasthenic crises in <1 year
- Autoimmune related, Ab’s:
  - Acetylcholine receptor (modulating, binding, blocking)
  - Muscle Specific Kinase

Methods

- Retrospective review of patient data, spanning from 2005-2013
- 9 patients selected
  - TED + Myasthenia Gravis
Results

- **Demographics**
  - African American: 56%
  - Caucasian: 44%
  - Average Age at presentation: 54.7 years (±19.8)
  - Sex: Male 4:9, Female 5:9
  - Median length of follow: 32 months

- **Time to co-diagnosis**:
  - Mean: 5.3 months ±5.7 (0-14 months range)
  - Excluding those diagnosed at presentation: 6.1 months ±5.1
Results

MG testing

- Ach Antibody proven MG (3)
- MuSK antibody positive (1)
- SF EMG proven (4)
- Seroneg, SFEMG neg* (1)

* Patient still met clinical criteria for myasthenia gravis
Results

- Complications:
  - 2 patients were known to have severe respiratory issues
    - 1 of which had multiple hospitalizations for respiratory crises
      - Same patient required ventilator assistance prior to diagnosis of myasthenia
## Results

<table>
<thead>
<tr>
<th>Thyroid status</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hypothyroid</td>
<td>11.1% (1/9)</td>
</tr>
<tr>
<td>Euthryoid</td>
<td>22.2% (2/9)</td>
</tr>
<tr>
<td>Hyperthyroid</td>
<td>66.7% (6/9)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Thyroid status</th>
<th>Abnormal TPO antibody levels (percentages)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Euthryoid (2/9)</td>
<td>100%</td>
</tr>
<tr>
<td>Hyperthyroid (6/9)</td>
<td>66.7% (4/6)</td>
</tr>
</tbody>
</table>
## Results

<table>
<thead>
<tr>
<th></th>
<th>N=9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tested for Thyroglobulin Abs</td>
<td>5 (55.5%)</td>
</tr>
<tr>
<td>Met Criteria for Hashimoto’s Thyroiditis</td>
<td>6 (66.7%)</td>
</tr>
</tbody>
</table>
Conclusions/Pearls

- MG and TED are not mutually exclusive, but can exist simultaneously
- Antibody testing alone is insufficient if negative
- Follow of up to 1 year may be needed to make co-diagnosis
- If MG is missed, could have dire consequences
- Hashimoto’s thyroiditis should be considered in patients with apparent TED and MG
Thank you

- Dr. Pamela Chavis
- Dr. David Stickler
- Ms. Brenda Thompson
- Dr. Lucian Del Priore
- Dr. Rupal Trivedi
Questions?