Amyloidosis: Pathway to Diagnosis
RED FLAGS AND DIAGNOSTIC ALGORITHM

“4 doctors thought I had Athlete’s heart. I didn’t.”

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Olympian

Amyloidosis Research Consortium
# Red Flag Symptoms

## Red Flags
Especially if in the presence of common symptoms and ≥1 other red flag

- Carpal tunnel syndrome, especially if bilateral
- Progressive symmetric sensory-motor neuropathy (suggestive of hereditary TTR amyloidosis-polyneuropathy)
- Ventricular wall thickening with preserved ejection fraction
- Congestive heart failure (including shortness of breath, generalized fatigue, peripheral edema)
- Intolerance of beta blockers and ACE inhibitors
- Protein in urine and/or renal failure
- Lumbar spinal stenosis
- Spontaneous biceps tendon rupture
- Periorbital ecchymosis (“Raccoon eyes”)
- Family history of hereditary transthyretin amyloidosis (hATTR)

## Other Common Symptoms

<table>
<thead>
<tr>
<th>General</th>
<th>Cardiovascular</th>
<th>Gastrointestinal</th>
<th>Autonomic Neuropathy</th>
<th>Ocular</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fatigue</td>
<td>New shortness of breath on incline and stairs</td>
<td>Unexplained weight loss</td>
<td>Orthostatic hypotension</td>
<td>Dark floaters</td>
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<tr>
<td>Periorbital purpura</td>
<td>Irregular heart beat (AFib most common)</td>
<td></td>
<td>Recurrent urinary tract infection (due to urinary retention)</td>
<td>Pupillary and blood vessel abnormalities</td>
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<tr>
<td>Enlarged tongue</td>
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<td>Peripheral edema</td>
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<td>Loss of libido</td>
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**Autonomic Neuropathy**
- Orthostatic hypotension
- Recurrent urinary tract infection (due to urinary retention)
- Sweating abnormalities

**Ocular**
- Dark floaters
- Pupillary and blood vessel abnormalities
**DIAGNOSTIC ALGORITHM**

- **Step in the diagnostic algorithm (test, biopsy, or conclusion)**
- **Key question in determining next step**

<table>
<thead>
<tr>
<th>Test for presence of monoclonal proteins</th>
<th>Fat pad aspiration</th>
<th>Fat pad aspiration or bone marrow biopsy</th>
<th>Does patient have heart involvement?</th>
</tr>
</thead>
<tbody>
<tr>
<td>(+)</td>
<td>(-)</td>
<td>(-)</td>
<td>yes</td>
</tr>
</tbody>
</table>

- **Suspicion persists?**
  - yes: Organ biopsy
  - (-): Amyloidosis unlikely

- **Is 99mTc-PYP available?**
  - yes: Perform non-invasive 99mTc-PYP
  - (-): Transthyretin amyloidosis (ATTR)

- **Mass spectrometry for typing**
  - (+): Light chain amyloidosis (AL)

- **Genetic counseling and testing**
  - Hereditary ATTR (hATTR)
  - Wildtype ATTR (ATTRwt)

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* 99m technetium pyrophosphate scintigraphy

a. A negative fat pad or bone marrow will exclude amyloidosis in 85% of cases. Clinical evidence should be evaluated to determine if there is still suspicion.

b. Depending on clinical presentation, appropriate organ biopsy will differ. Common sites are heart, kidney, liver, and nerve.
Amyloidosis: Don’t be the one who misses it.

arci.org/diagnosing-amylloidosis

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