Anterior Tibialis Tendon Rupture: The Other Cause of Foot Drop

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• Disclosures

Nothing to Disclose.
AVASCULAR ZONE
# EPIDEMIOLOGY, PATHOPHYSIOLOGY, and PMH

<table>
<thead>
<tr>
<th></th>
<th>Acute Rupture</th>
<th>Chronic, Acute on Chronic Rupture</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age</strong></td>
<td>Varies, Young</td>
<td>6&lt;sup&gt;th&lt;/sup&gt;-7&lt;sup&gt;th&lt;/sup&gt; decade</td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td>No difference</td>
<td>Men, rare in women</td>
</tr>
<tr>
<td><strong>Risk Factors</strong></td>
<td>Active</td>
<td>DM, RA, fluoroquinolones, local steroid use, gout</td>
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<tr>
<td><strong>MOI</strong></td>
<td>Powerful eccentric contraction of TA with hyper-plantarflexion</td>
<td>Laceration, degenerative tears, sudden hyper-plantarflexion and eversion forces; attritional</td>
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## CLINICAL FEATURES

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<td><strong>Chief Complaint</strong></td>
<td>“Pop” or “Snap” sensation</td>
<td>“Missed a Stair” or “Foot Slaps”</td>
</tr>
<tr>
<td><strong>Pain Associated</strong></td>
<td>Pain initially; Pain along course of tendon</td>
<td>Painless or Mild</td>
</tr>
<tr>
<td><strong>Edema</strong></td>
<td>Anterior Ankle Swelling</td>
<td>Minimal</td>
</tr>
<tr>
<td><strong>Other Visual Cues</strong></td>
<td>Non-palpable Defect, Loss of contour</td>
<td>Mass, Defect</td>
</tr>
<tr>
<td><strong>Ambulation</strong></td>
<td>Difficulty but possible via compensation, Limp</td>
<td>High Steppage Gait, Foot Drop, Toe Drag</td>
</tr>
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</table>
Loss of contour

http://dx.doi.org/10.1016/j.foot.2015.05.008
Mass in Chronic, Acute on Chronic Rupture

IMAGING

• Radiograph – possible osseous injury such as distal tibial fracture in acute setting
• CT – not indicated
• Ultrasound
• MRI - complete versus partial tear; level of proximal retraction for surgical planning
DIFFERENTIAL DIAGNOSIS

Neurological Deficit
• Lumbar radiculopathy (L4/L5)
• Common peroneal nerve palsy
• Herniated Intervertebral Disc

Neoplasm
TO TREAT OR NOT TO TREAT

What should I do?
CONSERVATIVE TREATMENT

Nonsurgical Candidates:
Older, Sedentary Individuals or >3 months delay
*controversial*

– Ankle Foot Orthosis
– Double Upright Brace attached to shoe
– Short Leg Cast (partial ruptures) 3-6 weeks
– No Treatment inability to tolerate devices; quality of life
SURGICAL TREATMENT

Surgical Candidates:
Young and/or Active Individuals
*controversial*

-Direct Repair
Within 1 month of initial injury ideal; up to 3 months

-Delayed Repair (Tendon Reconstruction)
> 6 weeks; chronic; acute direct repair not possible
DIRECT REPAIR

DELAYED REPAIR SURGICAL OPTIONS

• Sliding Tendon Graft
• Interpositional Graft
• EHL tenodesis or EHL tendon transfer
DELAYED REPAIR
POSTOPERATIVE COMPLICATIONS

- Failure of reconstruction/repair
- Weakness of dorsiflexion
- Adhesions
- Neuroma
- Wound dehiscence in delayed repair
LITERATURE REVIEW
Anterior Tibial Tendon Rupture

- 12 pts ruptured AT tendon
- 9 men/3 women, 18-83yo (avg age 61)
- 2 pts IDDM, 1 pt steroid dep RA
- 9 pts report acute trauma
- 7 pts surgery – Young active and/or active elderly patients with acute trauma
- 4 pts conservative (bracing) – Low functioning elderly pts with atraumatic pres

RESULTS

Surgical Group
- Postop f/u avg 22 months
- No postop complications
- Overall improved function
- Some loss of ankle motion

Conservative Group
- Overall improved slap foot gait
- Continued limited function
Anterior Tibialis Tendon Ruptures: An Outcome Analysis of Operative Versus Non-operative Treatment


• 16 pts ruptures AT tendon
• 4 women/12 men, 32-78 yrs
• Avg time from injury 71 days
• 8 pts surgery (~ 55yo) – 6 acute, 2 acute on chronic
• 8 pts conservative (~ 74yo) – all acute on chronic

RESULTS

Surgical Group
• Follow-up avg 6.68 years
• Operative care restores higher function level in young and/or active pts
• Direct surgical repair leads to improved AOFAS scores and improved levels of activity in young and/or active pts

Conservative Group
• Follow-up avg 3.86 years
CONCLUSION

• Anterior tibialis tendon ruptures are a rare occurrence
• Misdiagnosed
• Surgical management recommended in the young symptomatic patient with moderate to high activity level
• Conservative management recommended in elderly and/or patient with low activity level