Flexor Hallucis Longus Tenolysis/Tenosynovectomy in Dancers

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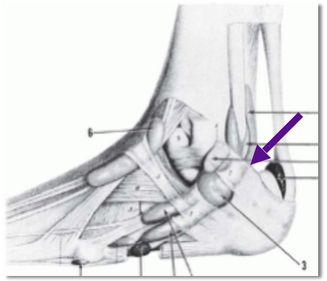
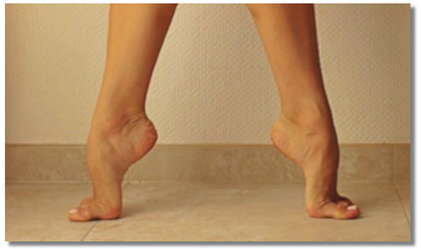
BACKGROUND

- FHL tendon passes through a fibro-osseous tunnel behind the medial malleolus
- Repetitive hyperplantarflexion at the tendon sheath entrance leads to tendon irritation
- History:
  - Pain/triggering with pointe, demi-pointe, relevé, tendu, and jumping
- Physical Exam:
  - Tenderness/crepitus/clicking and/or triggering over FHL tendon sheath posterior to medial malleolus
  - Functional hallux limitus - Thomasen Sign
- Diagnosis:
  - XRs, MRI, and ultrasound useful in ruling out additional pathology
- Treatment:
  - Conservative management is the gold standard
    - Physical therapy, NSAIDs, local modalities, rest
  - Surgical intervention indicated only for refractory cases





PURPOSE

- To determine if a clinically significant improvement in pain and function occurred in dancers following an *isolated* FHL tenolysis/tenosynovectomy via an open posteromedial approach
- To determine if any adverse events were associated with this surgical technique

METHODS

- Retrospective case series
- 63 ankles, 58 patients
- All dancers were interviewed and medical charts were reviewed
- Inclusion Criteria:
  - Isolated FHL tenolysis/tenosynovectomy via an open posteromedial approach
  - At least 6 weeks conservative management
  - Minimum 1 year follow up
- Exclusion Criteria:
  - Non-dancers
  - Any associated ankle pathology i.e os trigonum syndrome
  - Any associated ankle procedure i.e. ankle arthroscopy

DISCUSSION

- Average return to dance 7.1 weeks
- Dancers with tendon repair took an average of 4 weeks longer to return to dance
- Low rate of minor complications (7.9%) and return to the OR (1.6%)
- No neurovascular complications
- Technique is safe and successful with 97% return to dance
- High patient satisfaction (97%)
- Limitations:
  - Retrospective nature
  - 6 ankles out of 69 lost to follow-up
  - No validated outcome scores
  - Level IV evidence

CONCLUSIONS

- Isolated FHL tenolysis/tenosynovectomy via an open posteromedial approach is a safe, reliable, and effective treatment for stenosing FHL tendinitis/tenosynovitis in a dancer who has failed conservative management
- This is the largest series reported to date of isolated FHL tenolysis/tenosynovectomy via an open posteromedial approach in dancers

Patient Demographics

No. of Patients (n)	58 (63)
Female, n (%)	59 (94)
Age, years (range)	21.2 ± 7.6 (13-60)
Side of operation Right, n (%)	 29 (46)
Follow up duration (years)	7.1 ± 6 (1.1-24.8)
No. primary ballet dancers cases (%)	59 (94)
Level of dance prior to symptom onset Professional (≥40h/wk), n (%) Pre-professional (16≤x<40h/wk), n (%) Recreational (<16h/wk), n (%)	 17 (27) 38 (60) 8 (13)
Hours of dance practiced per week, pre-symptom, average (range)	27 (5-62)
Change in hours of dance practiced per week, while symptomatic, average (range)	2 (0-30)
Duration of symptoms/conservative management prior to surgery, average (range), months	16.1 (1.5-120)

Outcomes	Surgical cases	P Value
FHL triggering Pre-operative triggering, n (%) Post-operative triggering, n (%)	 40 (65.6) 0 (0)	<0.0001
Return to dance Yes, n (%)	 62 (98)	N/A
Return to dance symptom free Yes, n (%)	 61 (97)	N/A
Time to return to dance in weeks, average (range)	7.1 (2-24)	N/A
Pain/stiffness at follow-up, n (%)	4 (6.3)	N/A

Outcomes	Surgical cases	P Value
VAS Pre-operative, average (range) Post-operative, average (range)	 7.0 (Range 2-10, SD=1.5) 1.2 (Range 0-8, SD=1.7)	<0.0001
AOFAS Pre-operative, average (range) Post-operative, average (range)	 73 (73-73) 99 (73-100)	N/A
Subjective questionnaire Considered operation a "success," n (%) Would repeat procedure, n (%) Would recommend surgery to others, n (%)	 61/63 (97) 62/63 (98) 62/63 (98)	N/A

Operative Characteristics

Tenolysis, n (%)	63 (100)
Tenosynovectomy, n (%)	60 (95)
Tendon Debridement, n (%)	10 (16)
Tendon Repair, n (%)	7 (11)
FHL muscle belly impingement, n (%)	22 (35)
Surgical Time, average (range)	12 minutes (5-30)

Complications

Superficial infection, n (%) Wound issues, n (%)	2 (3.2) 3 (4.8)
Return to OR for revision	1 (1.6)

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