

Tibial nerve palsy secondary to isolated popliteus muscle rupture and focal compartment syndrome

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Introduction

- Popliteus muscle injuries, rare. Usually associated with severe trauma
- Isolated popliteus rupture, exceptional
- Tibial nerve palsy at popliteal fossa, uncommon
- Tibial nerve palsy related to popliteus muscle injury, rare (8 cases)

Case Report



- 68-year-old man
- Type II diabetes, obesity, and hypertension



- Sudden and time-limited pain in the left popliteal fossa
- **No trauma**
- 24 hours later : increased pain, plantar anesthesia, inability to flex ankle and toes → **biphasic pattern**
- Clinical exam : Left calf swollen. Anesthesia of the left sole. Complete motor deficit (M0) FHL, FDL and PT muscles



- Edema and enlargement of the left popliteus muscle
- Increased signal intensity
- Neurovascular compression
- Thrombosis of popliteal vein (US confirmation)



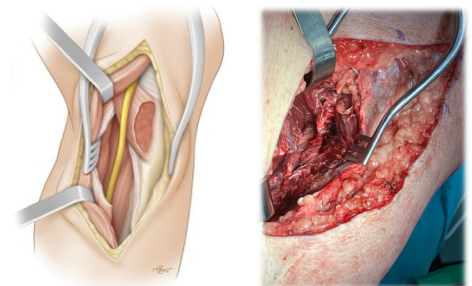
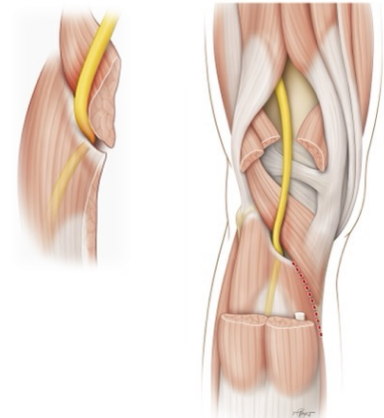
- **Longitudinal medial approach**
- Popliteus muscle : firm and necrotic
- Soleus arch release → Tibial nerve full decompressed



- **Histological confirmation** of popliteus muscle necrosis



- At 8 months : Full recovery



Discussion

Mechanism – Dual compression :

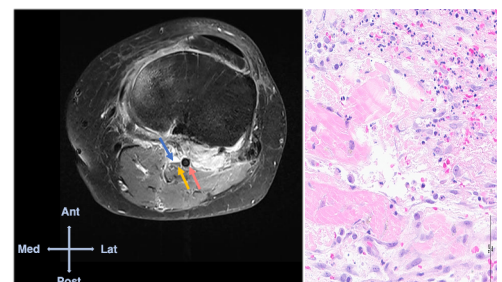
- **Direct mass effect** resulting from the swollen popliteus
- Focal **compartment syndrome**

Literature review (8 cases)

- Men (75%), mean age : 52.3 years
- Minor trauma, sometimes spontaneous
- Conservative management : incomplete recovery
- Surgical management : better pain relief, variable neurological outcome

Original aspect of the case :

- Histopathological confirmation of the popliteus necrosis
- Prompt surgical release (within 5 days)
- Medial surgical approach :
 - Direct access to popliteus muscle and tibial nerve.
 - Safer excision of necrotic tissue.
 - Supine position : safer in case of DVT



Take home messages

- Sudden calf pain and tibial nerve palsy → consider popliteus rupture
- **MRI** → essential for diagnosis
- Early **surgical decompression** → maximizing neurological recovery
- **Medial approach** → a safe and well-exposed option