

Management Of Functional Popliteal Artery Entrapment Syndrome In Athletes: What Is The Pathological Anatomy And What Symptoms Does It Cause: Technique Of Surgical Repair


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Disclosures

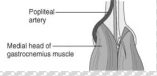
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- Not related to this presentation



Vascular Surgery

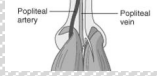
Popliteal Artery Entrapment Syndrome - ANATOMIC

Type I (classic)



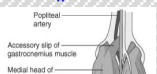
Medial deviation of popliteal

Type II




Less medial deviation and deep to muscle

Type III



Abnormal additional bands


Type IV



Persistence of axial artery, deep to popliteus muscle

Five Year Outcomes of Surgical Treatment for Popliteal Artery Entrapment Syndrome

Lee JT, et al. J Vasc Med Biol. 2013;25(1):1-6



Functional Popliteal Artery Entrapment (FPE, Type VI)

Functional Popliteal Entrapment Syndrome in the Sportsperson

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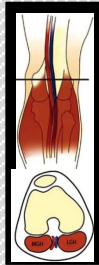
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European Journal of Vascular and Endovascular Surgery 43 (2012) 81–87

Functional popliteal artery entrapment syndrome: A poorly understood and often missed diagnosis that is frequently mistreated

William D. Turnipseed, MD, *Madison, Wis.*



J Vasc Surg 2009;49:1189-95.






CTA Lower Extremity with Plantar Flexion-Stanford protocol




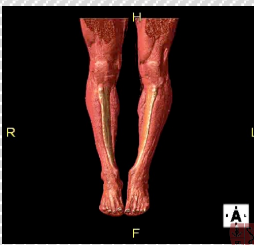



CTA Lower Extremity with Plantar Flexion

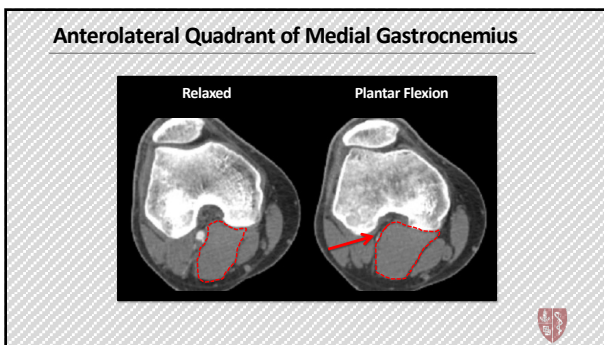
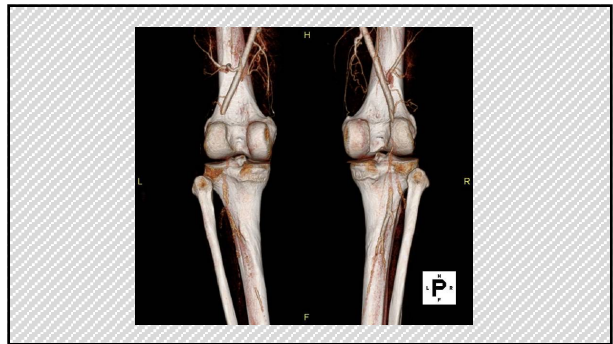
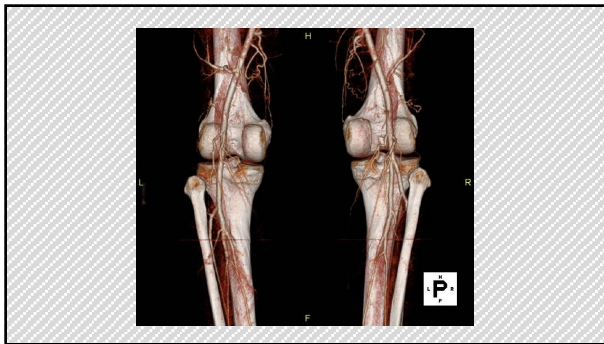
Relaxed



Plantar Flexion







From the Western Vascular Society

Surgical management of functional popliteal entrapment syndrome in athletes

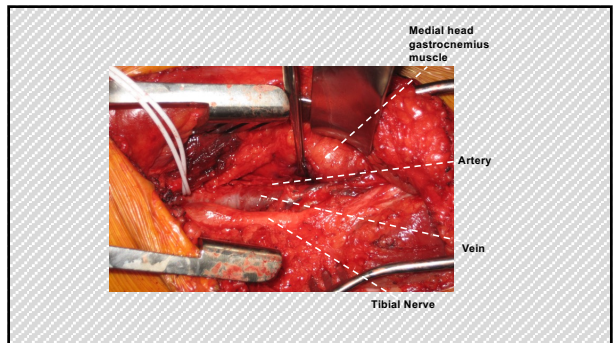
Kedar S. Lavigna, MD* Anantha Dua, MD* Kara A. Rothenberg, MD* Michael Fredericson, MD and Jason T. Lee, MD* Spartan, Calif

Sport	Number	% High School	% College	% Pro/Semi-Pro
Track/Field	17	18	24	58
Soccer	9	56	33	11
Water Sports	3	0	100	0
Lacrosse	2	0	100	0
Basketball	2	0	100	0
Skiing	1	0	0	100
Gymnastics	1	0	0	100
Climbing	1	0	0	100

Operative Technique

STEP 1
 "Lazy S" incision is marked in the popliteal fossa
 • Lines marked to ensure cosmetic closure of skin

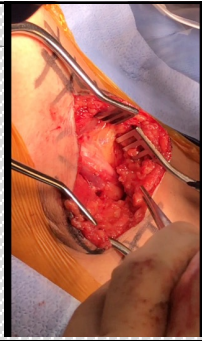
STEP 2
 Superficial posterior fascia opened and raphe of gastroc identified.
 • Lesser saphenous vein, sural nerve, and tibial nerve protected



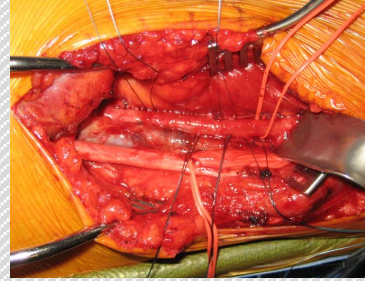
Operative Technique

STEP 3

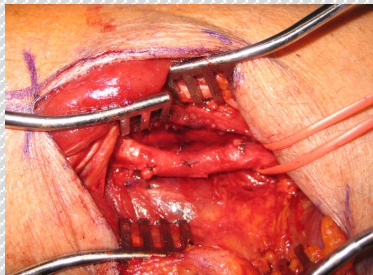
- Gastrocnemius encountered, side branches ligated and popliteal artery dissected out
- Popliteal vein branches can be ligated to create space



Operative Technique

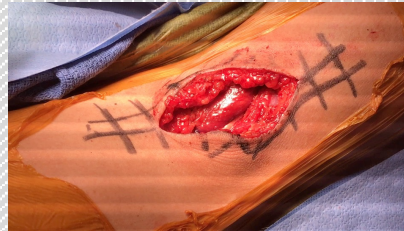


Operative Technique



Operative Technique

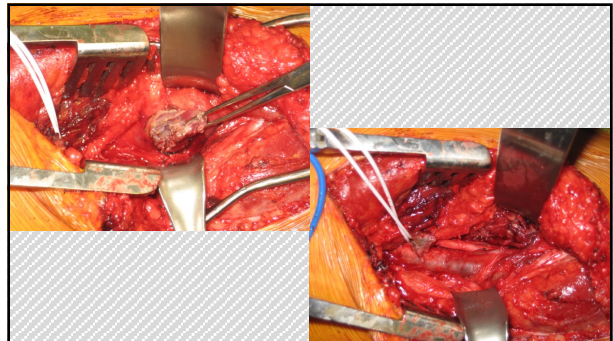
- #### STEP 4
- Provocative maneuvers of lower extremity to confirm region of compression and identify region of affected gastroc muscle



Operative Technique

STEP 5

Gastrocnemius debulked using Liga-sure device and measured in syringe with saline.



Postoperative outcomes

Followup	Average Follow-up	52 months (\pm 23)
	Resolution of symptoms	At 6 months: 87% At 12 months: 95% At 36 months: 100%
	Return to Competitive Sports	78%
	Return to Recreational Sports	100%



Summary

- Over 75% of athletes limited by FPAES demonstrate full return to prior competitive levels with surgical debulking of the anterolateral quadrant of the medial head of gastrocnemius muscle
 - 100% are able to return to recreational sports
- CT-A protocols help identify region of gastroc muscle impingement and guides intraoperative debulking
- This technique is an option in athletes with FPAES looking to return to competitive athletics
- 4 compartment fasciotomy also done as part of this procedure
- Knee immobilizer for 1week, no running for 1 month

