

# POPLITEAL ARTERY ENTRAPMENT SYNDROME

(PAES)

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# WHAT IS IT?

- Vascular disease
- Effects the popliteal artery
- Abnormal relationship in musculotendinous structures
- Most commonly from the medial gastrocnemius head
- PAES could be congenital

**Table 1** Popliteal entrapment syndrome classification (Popliteal Vascular Entrapment Forum)<sup>6</sup>

<b>Type I</b>	<b>The popliteal artery passes medially and then deep to the normal medial head of gastrocnemius.</b>
Type II	The medial head of gastrocnemius inserts more laterally than usual. The popliteal artery descends normally but passes medially to the muscle.
Type III	The medial head of gastrocnemius has an accessory slip arising more laterally that compresses the popliteal artery.
Type IV	The popliteal artery is compressed by running deep to the popliteus muscle or by an anomalous fibrous band.
Type V	Primary popliteal vein entrapment.
Type VI	Functional entrapment with no anatomical abnormality.

## TYPES OF PAES

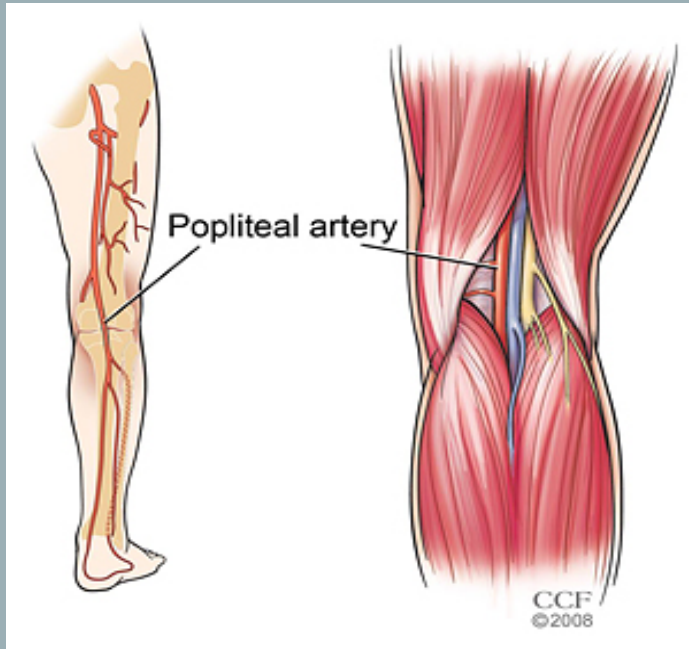
# ANATOMY

Gastrocnemius muscle

Popliteal artery

Popliteal vein

Popliteus muscle



<https://www.howtorelief.com/gastrocnemius-origin-insertion-action-nerve-supply/>

# SIGNS AND SYMPTOMS

- Numbness
- Aching
- Cramping
- Fatigue
- Swelling
- Claudication
- Lack of pulse in feet
  - Commonly in dorsalis pedis, and posterior tibialis arteries

## COMMON POPULATION

- Male athletes
- Young adults
- Young female athletes

## PERCENT OF POPULATION

- Male to female ratio 15:1
- Less than 3% congenital
- underdiagnosed in athletic populations
- Bilateral cases 29%-67%

# CAUSES

- Congenital
- Hypertrophy
- Exercise/training
  - Running, rugby, soccer

# DIAGNOSIS

- Referral to vascular specialist
- Ankle brachial pressures with exercise
- Computed tomographic angiography
- Duplex ultrasound



# TREATMENT

- Requires vascular intervention
- Musculotendinous release of popliteal artery
- Anticoagulants
- Serious cases cause arterial bypass
  - Saphenous vein
  - Superficial femoral artery autograft

## TIMELINE OF PATIENT

- Numbness started occurring in the foot during exercise
- Discoloration of the toes and sole of the foot
- Referral to the physician was not immediate
- During physical activity loss of function in the 5<sup>th</sup> toe occurred
- Toes on the right foot were significantly colder when compared to the left
- Numbness and discoloration started to occur in non-sports related activities
- An appointment was made to see a general physician

## TIMELINE OF PATIENT CONT.

- No pulse was detected on the dorsalis pedis artery
- Referral to a vascular specialist was ordered
- Doppler ultrasound was used on arteries in the foot
- Duplex ultrasound was done on the right leg and foot
- Referral to a vascular surgeon was ordered
- CT angiography was ordered
- Results revealed narrowing of the anterior tibial arteries
- Amlodipine was prescribed for increased blood flow to extremities
- No further treatment options have been made

## REFERENCES

- <https://journals-sagepub-com.ezproxy.gardner-webb.edu/doi/10.1177/1538574413495466>
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