

# Effect of Embolization of Anterior Tibial Artery Branch in Peroneal Neuropathy : A case report



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## Introduction

Common peroneal neuropathy is the most common entrapment neuropathy. Recently, vascular embolization is introduced for the treatment of frozen shoulder and knee joint pain. Here, we present a case of a patient whose left lateral shin area intractable pain which was relieved after the embolization on the inferior genicular collateral vessels revealed in digital subtraction angiography (DSA).

## Case Report

### Patient information

- Age/Sex : 74-year-old / male
- Chief complaint : Left lateral shin area pain, from 2020, NRS 6, along with numbness and paresthesia : but not with back pain
- Past history : DM (duration : 20 years)  
Hx. of exposure to defoliants  
Hypertension, Dyslipidemia,  
Deep partial thickness burn around the area(2021)

### Hospital course

- Lumbar MRI : moderate left central disc herniation at L4/5
- Left knee MRI & tibia MRI : non-specific
- Previous procedures : at OS department Percutaneous epidural nucleoplasty, selective nerve root block, trans-foraminal epidural block targeting L4-5 sensory dermatome.  
→ no effect
- Consultation to the rehabilitation medicine for further evaluation and treatment
- Trigger point injection was done 3 times on the left tibialis anterior and extensor digitorum longus  
→ no effect
- Electrodiagnostic study : left common peroneal neuropathy at fibular head combined with peripheral polyneuropathy : no evidence of lumbar radiculopathy
- Peroneal nerve block with ultrasonography guidance  
→ effective but 1 month only

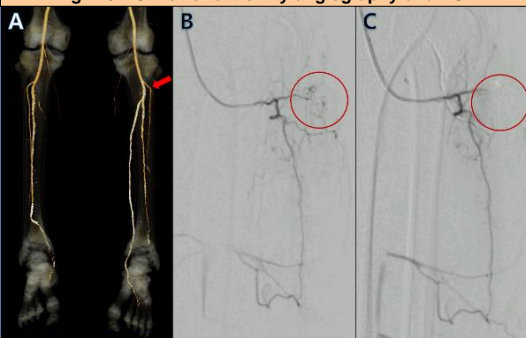
### In the search of multidisciplinary approach

- Ankle-brachial index was 1.23/1.17
- Interdepartmental conference with the radiology : conclusion - the condition might be vascular in nature
- 3D CT lower extremity angiography (E) : revealed the hypotrophy of the left anterior tibial artery (Fig. 1-A)
- The left anterior tibial artery is supplying : common peroneal nerve : anterior compartment of the leg

### Admission course

- Digital subtraction angiography : many collateral vessels of the left inferior genicular artery which is the branch of anterior tibial artery : embolization was performed. (Fig. 1-B)
- The follow-up angiogram right after the procedure : disappearance of collateral vessels (Fig. 1-C).
- The day after the procedure, the left shin area color changed to purple (Fig. 2-A).  
→ improved a few days later (Fig. 2-B)
- At discharge, the symptom remained.
- 2 months later, the patient reported “Complete relief from paresthesia, but still felt numbness, NRS dropped from 6 to 3.”

Fig 1. 3D CT lower extremity angiography and DSA



- (A) 3D CT lower extremity angiography with enhancement : Left anterior tibial artery hypotrophy supplying TA and EDL muscles.  
(B) DSA revealing collateral vessels of inferior genicular artery which is the branch of the anterior tibial artery.  
(C) After the embolization, collateral vessels are not seen.

Fig. 2.



- (A) The day after the procedure, skin color change appeared  
(B) Improved color change.

## Conclusion

Various approaches to chronic pain have been tried, especially recently, vascular intervention for patients whose symptoms have not been improved despite conservative treatment. Further studies are needed to determine the long term effect of vascular approach.