



# POSTER PRESENTATION

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## Percutaneous ultrasound-guided aspiration as an alternative method of treatment for Adventitial Cystic Disease: A case series

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### INTRODUCTION

Adventitial cystic disease (ACyD) was initially documented in 1947 by Atkins and Key within the right external iliac artery. (1) This condition is exceedingly rare, constituting a mere 0.1% of all vascular disorders, predominantly impacting the popliteal artery unilaterally in 85% of cases. (1, 2) It represents a non-atheromatous form of arterial stenosis. ACyD frequently of the popliteal artery that typically manifests as intermittent claudication. There have been sporadic instances of bilateral involvement, leading to compromise of arteries such as the external iliac, common femoral, radial, and ulnar. This condition most frequently affects men in their fourth and fifth decades of life. (2)

Treatment options for ACyD encompass cyst excision, removal of the affected arterial segment with subsequent vein graft reconstruction, or percutaneous aspiration. In cases presenting with one cyst, cyst wall excision is considered the golden standard, while in multiple-cyst cases bypass is considered the best method of treatment. Previous reports

### AIM

The aim of this presentation is to demonstrate that percutaneous ultrasound-guided (USG) aspiration is a valid treatment option for ACyD of the popliteal artery. We present three cases of ACyD affecting the popliteal artery, detailing their subsequent management with percutaneous aspiration. All patients have approved the publication of images and details regarding their cases under full anonymity.

#### Patient Demographics

Gender, Age	Affected segment	Symptoms
M, 43	Popliteal Artery	Claudication <200m
F, 55	Popliteal Artery	Claudication ~50m; Heaviness behind the knee joint
M, 40	Popliteal Artery	Claudication ~200m

### METHODS

Three consequent cases of ACyD (male 66%, mean age 46yo) that were treated with percutaneous ultrasound-guided aspiration in two institutions were retrospectively recorded and analyzed (Table 1; Fig. 1-3)

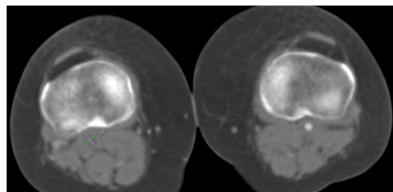
Patients reported claudication with sudden onset and fast decrease of walking distance.

After an initial differential diagnosis with the assistance of imaging (Magnetic Resonance Angiography - MRI or Computer Tomography Angiography - CTA), all three patient underwent percutaneous USG aspiration using a short bevel large bore (16G or 18G) needle (Fig.4). The amount of the aspirated fluid varied from 0.8ml for the smallest cyst (Fig. 3) to 1.1ml for the largest (Fig. 2). Aspiration required the application of significant negative pressure using Luerlock syringes. The content of very small cysts was not aspirated, but with the tip of the needle all cysts were punctured.

Once the aspiration was completed manual pressure was applied to the site for 5 minutes.

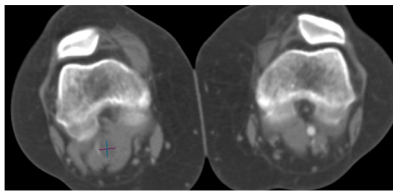
The follow up plan was decided to take place at every 6 months for the first year and then annually up to three years. Follow-up appointments consisted of medical history update plus handheld doppler examination or colour duplex ultrasound scan.

Figure 1



Patient 1; Right popliteal artery wall cyst measuring 6.8x9.5mm

Figure 2



Patient 2; Right popliteal artery wall cyst measuring 12.2x13.7mm

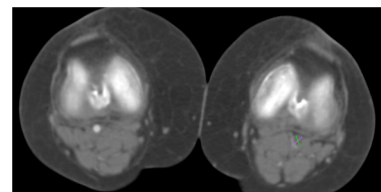
### RESULTS

All three patients were treated with percutaneous ultrasound-guided aspiration for popliteal adventitial cystic disease. technical success was 100%. The main manifestation was intermittent claudication for all three cases and was completely resolved within a period of two days after the procedure.

All patients complied with the follow-up schedule. One of the patients received only a telephone interview at the 6-month mark.

All patients remain symptom-free at 14.3 months (6-28 months). No additional procedures were necessary.

Figure 3

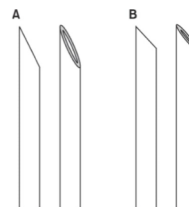


Patient 3; Left popliteal artery wall cyst measuring 7.1x8.1mm

### CONCLUSIONS

Our findings suggest that percutaneous ultrasound-guided aspiration of adventitial cysts is a safe and efficient method of treatment and restores the blood flow in the affected vessel (the popliteal artery in our cases). Early recurrence suggested by previously published data is not confirmed by our experience.

Figure 4



Types of short-bevel needles; Quincke needle (A), Chiba needle (B). (Modified from JH Hong & YH Lee, Korean Journal of Anesthesiology 2014)

### BIBLIOGRAPHY

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