POPLITEAL VENOUS ANEURYSMS

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Incidence

• Popliteal aneurysms are rare anomalies that are frequently associated with pulmonary embolism.
• Difficult to diagnose with physical exam; duplex ultrasound, venography, or CTV or MRI are usually necessary.
• Many patients with Popliteal venous aneurysms have evidence of prior clinical or silent pulmonary embolism.
• Berquist et al, 2006 reported 105 cases of Popliteal venous aneurysm with 46/105 presenting with symptoms of pulmonary embolism and 38/105 with local symptoms referable to the popliteal fossa.

• Frequently associated with venous insufficiency.
• Sessa, et al, JVS, 2000 reported the management of 25 patients with popliteal venous aneurysms, 24% with PE (2 with cardiac arrest, 1 successfully resuscitated with pulmonary embolectomy).

• 76% with symptoms of CVI, and leg pain.
• Smith, Grice, Robinson, and Rheudasil, in 1990 reported a case of recurrent occult pulmonary emboli in a 57 year old man found to have a saccular aneurysm of the popliteal vein, with indium 111 scan, MRI and subsequent venography.

• The aneurysm was repaired with resection and tangential venorrhaphy.
• McDevitt, el al, Ann Vasc Surg, 1993, suggested that an isolated venous dilatation 2x the size of the normal vein is aneurysmal.

• Malleti, et al, Phlebology, 1997, defined venous aneurysms as 3x normal size.
Treatment

• Most institutions counsel surgical repair as the preferred approach.
• In a literature review Jenkins, ANZ J Phlebology 2008, reported up to 80% recurrence rate and death from PE in patients treated with anticoagulation alone.
• We report 3 patients with peripheral venous aneurysms, 2 popliteal venous aneurysms and 1 soleal sinus aneurysm.

• 37 year old female with Sx of CVI, 2.5 cm saccular aneurysm of the left popliteal vein detected of venous reflux testing.
Left Popliteal Vein
Popliteal Vein Aneurysm
Popliteal Vein Aneurysm Repair
Operative and Post—Operative Course

• The repair was well tolerated on 03-01-16 and she has been maintained on rivaroxaban 20mg daily.

• At the last visit 04-04-16 her wound was healing, she had minimal edema, and was using compression hose and elevation.
Postoperative Duplex
Case two

• 22 year old female started on OPC and presented with DVT and PE 3 weeks later.
• Found on US to have a 3.0x1.9 cm non compressible left soleal aneurysm.
• Being maintained on apixaban 5mg bid.
• Repeat US no DVT Left soleal vein 1.87 cm dia., no thrombus noted.
Acute Soleal DVT
Subsegmental PE

IMPRESSION:
1. There is a pulmonary embolus to a tertiary branch to the right lower lung. No other pulmonary emboli are seen.
***** Final *****
2016 Chest Guidelines do not address treatment of subsegmental PE in the presence of distal LE venous aneurysms.
Case Three

• 100 year old male with US, 05-28-15, revealed 1.8x2.0 cm Right popliteal aneurysm.
• Pt has ASHD, Occluded left ICA, AAA Endograft 2006.
•Being maintained on Clopidogrel and ASA.
• Duplex 03-19-16 1.9x1.8 cm Right popliteal aneurysm without evidence of thrombus.
Popliteal Vein Aneurysm
Conclusions

• Popliteal Venous Aneurysms are uncommon anomalies that should be sought of routine venous duplex examinations.

• Best detected in the standing or steep reverse Trendelenburg position when the vein is dilated by gravitational pressure.

• Surgical repair is generally felt to be preferred approach, but therapy must individualized.
• Thank You for your attention.