A 60-year old patient presented with knee pain on the right side occurring while exercising. There was no memorable trauma and no patient history concerning either lower limb. In the clinical examination there was no sign of inflammation. No tumour was found on deep palpation and there was no increase of pain on palpation either.

**Imaging Findings:**

X-ray of the right knee was performed to exclude a fracture, degeneration and other bone lesions. (Fig. 1). The X-ray in p.a. and lateral projection demonstrated a beginning degeneration of the right knee, classified Grade 1 by Kellgren and Lawrence as well as a calcification of the insertion point of the quadriceps tendon. An MRI was performed to rule out a soft tissue injury of the knee and led to the incidental finding of a cystic lesion connected to the vessel wall (Fig. 2). The performed duplex ultrasound (Fig. 3) showed a compressible hypo-echoic lesion with contact to a knee vessel without a typical arterial flow signal (Fig. 4). In addition, a phlebography was performed (Fig. 5). It revealed an abnormal dilation of the right popliteal vein as well as signs of chronic venous insufficiency.

**Discussion:**

After ruling out the most common causes of knee pain in physically active middle aged patients, the incidental finding of a cystic lesion with contact to the vessel wall on MRI was followed by further diagnostic imaging in the form of ultrasound. This is the technique of choice and should be the first line tool when a clinician suspects vascular pathologies of extremities.

Phlebography, also performed in our patient, is an excellent technique for venous pathologies, such as thrombosis, venous insufficiency or anatomical variations. However, phlebography should only be used if duplex ultrasound cannot definitely determined the final diagnosis. In this case it led to the final diagnosis of popliteal venous aneurysm. Popliteal venous aneurysms (PVA) are a seldom cause of knee pain. There are 105 cases of PVA reported [1].
prevalence of PVA in patients with various venous symptoms and having had ultrasound is 0.1% to 0.2% [2, 3]. Most popliteal venous aneurysms are asymptomatic but can present with knee pain due to tibial nerve compression and superficial thrombophlebitis [5].

The aetiology of popliteal venous aneurysms includes traumatic damage, inflammatory processes such as syphilis, congenital weakness and degeneration [4].

The first clinical presentation of PVA might be pulmonary embolism [4]. Especially in patients with no known predisposing risk factors for deep vein thrombosis, who survive pulmonary embolism, radiological imaging is very helpful and important, as treatment of PVA is always surgical repair since anti-coagulation does not protect from pulmonary embolism [4].

**Differential Diagnosis List:** Popliteal Venous Aneurysm, Baker’s cyst, Popliteal artery aneurysm, Entrapment syndrome, Cystic adventitial degeneration

**Final Diagnosis:** Popliteal Venous Aneurysm

**References:**


Description: X-ray of the right knee showing beginning degeneration. Origin: Hosten N, Department of Radiology and Neuroradiology, University Medicine Greifswald, Germany
Description: MRI of the right knee showing a cystic lesion with contact to the popliteal vessels. Origin: Hosten N, Department of Radiology and Neuroradiology, University Medicine Greifswald, Germany
Description: Duplex ultrasound showing a compressible lesion with contact to knee vessels. Origin: Hosten N, Department of Radiology and Neuroradiology, University Medicine Greifswald, Germany
Description: Phlebography giving the diagnosis: poplital venous aneurysm. Origin: Hosten N, Department of Radiology and Neuroradiology, University Medicine Greifswald, Germany