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Case Report

Right popliteal vein aneurysm: a case report

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ABSTRACT

Venous aneurysms are rare. Popliteal venous aneurysm can lead to severe complications such as deep vein thrombosis, pulmonary emboli and death if they remain undiagnosed or untreated. The authors report a case of popliteal vein aneurysm in the right popliteal fossa of a 60-year-old male cadaver. Most venous aneurysms have a congenital origin. An early diagnosis of popliteal venous aneurysm with ultrasound examination is essential prior to the occurrence of any thromboembolic or other major complications. © **IJAV. 2011; 4: 61-62.**

Key words [popliteal venous aneurysms] [pulmonary emboli] [clinical applications]

Introduction

Popliteal vein aneurysm (PVA) is a rare pathology of the deep venous system. There are two types of PVA: saccular and fusiform [1]. Most venous aneurysms have a congenital origin, although they may also be acquired by trauma, inflammatory processes and degenerative changes. Popliteal venous aneurysm was first described as an uncommon cause of pulmonary embolism [2]. Popliteal venous aneurysms can lead to severe complications such as deep vein thrombosis, pulmonary emboli and death if they remain undiagnosed or untreated [3]. Asymptomatic incidental detection, local lower extremity symptoms or embolic pulmonary episodes may represent different aspects of presentation of the same condition [4]. A safe management approach lies in surgical repair and therefore the early detection of these conditions is crucial [5].

Case Report

The present case was reported in a 60-year-old male cadaver of South Indian origin in the Department of Anatomy, Melaka Manipal Medical College, Manipal, India. The dissection of lower limb was carried out according to the instructions by *Cunningham's Manual of Practical Anatomy* [6]. The dissection took place during the year 2009–2010. The PVA was identified in the right polpiteal fossa. The right popliteal vein had two fusiform shaped aneurysms. The proximal aneurysm measured around 6 cm in length and 5 cm in diameter. The distal dilatation was measured around 6.3 cm in length and 3.2 cm in diameter. The popliteal artery was placed deep to the vein and the sciatic nerve was placed laterally with its terminal branches. The formation and course of the popliteal vein was as usual. The small saphenous vein drained into popliteal vein after piercing the posterior wall of the popliteal fossa.

Discussion

Harris, in 1928, was the first person to mention about venous aneurysms in an infant with an aneurysm of the jugular vein. Dahl et al. in 1976 described the PVA as a source of pulmonary emboli [7]. PVA is occasionally characterized by local signs and symptoms and notably may cause fatal complications, such as pulmonary embolism and other thromboembolic episodes [8]. According to Chahlaoui et al., the primary venous aneurysms are rare. They are true aneurysms, as they consist of an intact vessel wall [9]. The cause is unknown; reports suggest that they are developmental, perhaps secondary to a weakness of elastic fibers in the vessel wall and others claim that they are secondary to endophlebohypertrophy and endophlebosclerosis [10]. In a retrospective analysis by Sessa et al. in a 25 patients study identified that 24% of cases involved pulmonary embolism, and 76% of PVAs were discovered during an investigation

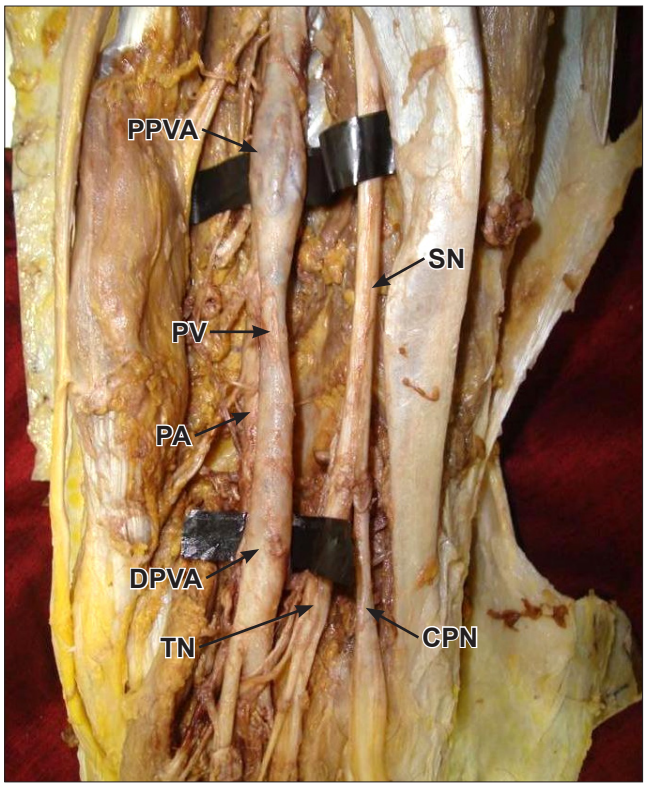

Figure 1. Photograph showing the popliteal vein aneurysms in the right popliteal fossa. *(**PV**: popliteal vein; **PPVA**: proximal popliteal vein aneurysm; **DPVN**: distal popliteal vein aneurysm; **PA**: popliteal artery; **SN**: sciatic nerve; **TN**: tibial nerve; **CPN**: common penoreal nerve)*

for chronic venous disease [1]. With the widespread use of venous duplex scanning, the occurrence of PVAs are increasingly found in patients with deep or superficial vein insufficiency.

Labropoulos et al. identified seven cases (5 women and 2 men with a mean age of fifty-nine years) of asymptomatic popliteal vein aneurysms through Color Flow Duplex imaging method [11]. In their study, all the aneurysm were of a saccular type, fully compressible, without evidence of thrombus in the sac, and with a maximal diameter ranging from 2.0 to 2.8 cm. Superficial vein incompetence was found in 6 patients. PVA are more common in females and occur more frequently in people over 40 years of age. An early diagnosis of PVA with ultrasound examination is essential prior to the occurrence of any thromboembolic or other major complications [9].

In a cadaveric study by Chaisiwamongkol et al., they observed a fusiform aneurysm of the right popliteal artery which measured 50 mm long with 30 mm diameter. They identified the first case of multiple aneurysms out of 843 of both gender specimens in their 34 years of experiences. Identification of aneurysm in the dissecting room would motivate the medical students and the anatomists which lead to the stimulation of the students' interests. This leads further to the thoughts for the application in the patients. The aneurysms left in the cadaver has been difficult to find [12].

Venous aneurysms can be detected by presence of soft subcutaneous mass, which disappears with limb elevation and increases with the Valsalva maneuver and will be confirmed by vascular ultrasound method [13]. Coffman et al. consider phlebography as mandatory for a precise determination of venous anatomy before the surgery [14]. PVA are a potentially dangerous, life-threatening and are source of pulmonary embolism, including asymptomatic ones and those have unpredictable course and therefore surgery is the treatment of choice for this pathology, which is usually not complicated by mortality, morbidity or recurrence [15].

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