Thrombophlebitis of Aneurysmal Antecubital Vein causing Pulmonary Embolism: A Case Report

S.P. Joseph and J. Sathianathan*

Dumfries Royal Infirmary, General Surgery Unit, Scotland, UK

The authors report a case of thrombophlebitis arising in an antecubital fossa vein resulting in a pulmonary embolism. Thrombophlebitis occurred in a vein with aneurysmal dilatation (27 mm dia) and was confirmed on duplex ultrasonography. A pulmonary embolism was suspected clinically and was confirmed by ventilation-perfusion scanning. The patient was managed by anticoagulation with warfarin. Two months later she developed features of a cerebro-vascular accident secondary to bleeding into cerebral hygromas following which anticoagulation was discontinued.

Keywords: Superficial thrombophlebitis; Pulmonary embolism; Upper limb; Upper extremity; Venous aneurysm.

A 76-year old female patient presented with aneurysmal dilation of a left antecubital vein and recurrent episodes of phlebitis affecting this vein. Her past medical history included presence of bilateral cerebral hygromas, hypertension and varicose veins of legs. She had had an augmentation mammoplasty performed 25 years previously. She was a non-smoker and non-alcoholic.

On clinical examination she had a significantly aneurysmal segment of left antecubital vein. An ultrasound scan confirmed the presence of a 27 mm long and 22 mm diameter segment of thrombosed with extension of thrombus into the adjacent undilated vein. The veins were patent in the proximal part of the arm. She was reassured and was followed up in the surgical outpatient clinic. Her symptoms of phlebitis improved spontaneously and a repeat scan a few months later showed no evidence of thrombus and veins were patent although there was some thickening of the wall. She again developed features of phlebitis 18 months later and was managed with anti-inflammatory drugs. However, 24 months after the onset of symptoms she developed unexplained shortness of breath and was initially treated by her primary physician as chronic obstructive airway disease. A repeat ultrasound scan showed that the affected vein was expanded by an irregular thrombus with the proximal veins being patent. An ultrasound of the lower limbs did not reveal any evidence of deep vein thrombosis and thrombophilia screen was negative. Subsequently a ventilation-perfusion scan (V/Q scan) showed a normal ventilation scan but the perfusion scan demonstrated multiple segmental unmatched perfusion defects within both lungs. The appearances suggested a high probability of pulmonary embolus with the likelihood of pulmonary thromboembolism in the region of 95%. On suspicion of venous thromboembolism from the dilated phlebitic vein (Fig. 1) of the forearm, the affected segment of the vein was excised and intraoperatively she was found to have a free-floating thrombus within the affected vein (Fig. 2). Patient was started on warfarin and her symptoms improved gradually. However, 2 months later the warfarin had to be stopped as she developed features of a cerebro-vascular accident secondary to bleeding into the cerebral hygromas.

Discussion

There have been only 4 case reports in literature of an upper limb superficial thrombophlebitis (SVTP) causing pulmonary thromboembolism although many
cases have been reported from deep venous thrombosis affecting the upper limb\textsuperscript{10,12,13} as well as septic emboli secondary to catheter-induced septic thrombophlebitis.\textsuperscript{11} Recently many series and case reports of venous aneurysms in superficial and deep veins have been published.\textsuperscript{12} The complication of pulmonary embolism has been reported only from deep venous aneurysms affecting mainly the popliteal vein.\textsuperscript{13}

Venous aneurysms involving major veins may cause thrombophlebitis, thrombus formation, pulmonary embolism and in addition they always have the remote risk of spontaneous rupture.\textsuperscript{14} Less than 5\% of venous aneurysms involve upper limb veins. Generally venous aneurysms of the upper limb have been considered to be benign compared to popliteal venous aneurysms.\textsuperscript{15} Even when thrombosed, pulmonary embolism has not been considered to be a major complication. Diagnosis is often made after excision has been done for a mistaken diagnosis of soft tissue lesion or for cosmetic purposes. The differential diagnosis of venous aneurysm of the superficial vein should also include haemangiomas, lymphocele, arteriovenous fistulas and similar subcutaneous swellings. Venectasis of palms and fingers also termed palmar and digital varicosities is also clinically significant as thrombophlebitis of these veins presents as small, painful and palpable nodules.\textsuperscript{4}

Thrombosis in any superficial vein is accompanied by tender swelling, often red and slightly warm and may signify a serious background such as malignancy, vascular disease or polycythemia. It can also be caused by trauma such as catheter insertion or a direct intimal injury or infection. It is important to differentiate between upper extremity suppurative thrombophlebitis and SVTP, as aggressive treatment is required for the former to avoid the complication of septic pulmonary emboli. The rare causes of upper limb thrombophlebitis and venous thrombosis include hormonal contraception.\textsuperscript{1} Upper extremity venous thrombosis with pulmonary embolism following excretory urography has also been reported.\textsuperscript{2} There has been rare association between papillophlebitis and upper limb thrombophlebitis after fluorescein angiography.\textsuperscript{3}

The initial diagnosis of SVT is usually made from physical examination. The patient presents with a painful cord like structure associated with redness and induration along the course of the affected vein secondary to perivenous inflammation. Duplex scanning confirms the diagnosis.

Various treatment options are available however, they can be broadly divided into conservative and surgical management. Superficial thrombophlebitis has been successfully treated with transdermal nitroglycerin. The nitroglycerin that is metabolized to nitric oxide imitates the action of nitric oxide that is present in the endothelium.\textsuperscript{5} Randomized, placebo-controlled study to evaluate the effect of local treatment with Essaven gel in comparison with placebo have shown improvement in signs and symptoms with its local use.\textsuperscript{6}

The surgical procedures that have been reported include thrombectomy,\textsuperscript{7} resection of aneurysmal or affected vein. Small studies have recommended surgical treatment to prevent complications in all cases of venous aneurysm and that venous continuity with graft was found unnecessary although it may be necessary for deep veins.\textsuperscript{8} Superficial thrombophlebitis has been treated with surgical excision of the affected segment thus preventing any thromboembolic complications and shortening healing times.\textsuperscript{9}

We present this case to describe a potentially life threatening complication from an uncommon

---

Fig. 1. Exposed aneurysmal thrombophlebitic segment of left anticubital vein.

Fig. 2. Opened venous aneurysm sac with adherent free floating thrombus.
condition, affecting the superficial veins and that has previously been thought to be benign. There are many simple and novel ways of treating venous aneurysms complicated by superficial thrombophlebitis in order to prevent venous thromboembolism.

References


Accepted 26 November 2006