RARE Atherosclerotic Aneurysms of the Dorsalis Pedis Artery in Young Women: A Multicenter Study of Case Reports and Literature Review

Teixeira BM; Giusti MF; Costa AJV; Domingos FUG; Santos RC; Moon TY; Moon FH; Pimenta TC; Cardoso NK; Karina MUP; Correa JA

Background: True atherosclerotic aneurysms of the dorsalis pedis artery (DPA) are uncommon, with an incidence of 0.5% of peripheral arteriography. Pseudoaneurysms secondary to trauma are more frequent. Those lesions can lead to harmful complications such as acute foot ischemia or arterial rupture if not treated. The aim of this report is to present successfully cases with different open surgical approaches and review important literature topics.

Methods: We present herein 2 cases of true dorsalis pedis artery aneurysm in relatively young; 46 and 51-year-old women, with no history of local trauma or injury to their foot. Clinical evaluation and Doppler ultrasound examinations confirmed the aneurysm as well the patency of collateral circulation of the foot. In the first case, the aneurysm was resected and the reconstruction was made through an end-to-end anastomosis. In the second case the aneurysm was resected and the DPA was proximal and distally ligated offering a continuous Doppler showed good perfusion to the interdigital arteries.

Results: Both patients recovered uneventfully and were discharged in the next day. They remained asymptomatic in 3 years follow-up, without any signs of foot ischemia. Graft patency and good flow were also documented on follow-up Doppler studies. Histological evaluation of the aneurysm wall excised revealed typical atherosclerosis with focal intima enlargement and partial thrombus.

Conclusions: DPA true aneurysms are uncommon and can lead to several complications such as rupture, embolization and thrombosis, Open surgical repair still have a pivotal role in the treatment, with flow reconstruction recommendations in patients with occlusive disease or risk factors, such as diabetes.

BACKGROUND

Dorsalis pedis artery (DPA) aneurysm is extremely rare, often associated with atherosclerotic change. On the other hand, DPA pseudoaneurysms occur more frequently and are associated with local trauma. Due to the risk of nerve compression, thrombosis and distal embolization, surgical management of symptomatic aneurysms is usually recommended. The employed approach varies according to the pedal arch anatomy and risk factors.

PURPOSE

Report two new cases of true atherosclerotic aneurysm of DPA successfully treated with different open surgical procedures and 2-year follow-up, as well as review important literature topics.

CASE REPORT 1

A 46-year-old woman was referred to the São Camilo Hospital Vascular Department with a sporadically painful mass over the dorsum of the right foot, present for 6 months. No history of local acute trauma, nor family history for arterial aneurysm. The only relevant fact in previous medical history was a bariatric surgery. At physical examination a 1.5 cm pulsating mass over dorsum of foot was found. Duplex ultrasound confirmed a 1.2 cm x 1.0 cm x 1.1 cm right DPA aneurysm (Fig 1). All other arteries in inferior members, aorta and renal were patent with no evident stenosis or aneurysm. Magnetic resonance arteriography demonstrated patent plantar arteries (Fig 2). The aneurysm was resected (Fig 3) and the reconstruction was made through an end-to-end anastomosis.

CASE REPORT 2

A 51-year-old woman with painful mass over the dorsum of the left foot, present for 2.5 years. No history of local acute trauma. Relevant previous medical history included Hypertension and Hysterectomy 20 years prior. Family history for arterial aneurysm was negative. There was a 3.0 cm pulsatile mass over DPA. No other vascular abnormalities was found at physical examination. Duplex ultrasound confirmed a 3.2 cm x 2.5 cm x 2.0 cm left DPA aneurysm, with mural thromb. All other arteries in inferior members, aorta and renal were patent with no evident stenosis or aneurysm. The aneurysm was resected (Fig 5) with ligation of the DPA proximal and distal to it, after intraoperative doppler showed good perfusion to the digital arteries.

DISCUSSION

The frequent complaint is disconfort associated with wearing footwear and may present chronic toe ischemia or bluish discoloration of the toe. In general, symptomatic aneurysms are believed to be at high risk of complications.

RESULTS

In both cases satisfactory perfusion of the foot was present. Histologic analysis of both aneurysms revealed typical atherosclerosis. There was no evidence of vasculitis, malignancy or infection. On the 2-year follow, both patients had no complications and duplex ultrasound without hemodynamic alterations (Fig 4).

CONCLUSION

True DPA aneurysms are extremely rare. It is important that DPA aneurysms are repaired before complications happen. Even in the absence of symptoms, the presence of thrombus remains a reasonable indication for elective surgery because of the potential risk of embolism.

Ligation appears to be a safe and simple treatment, but reconstruction is recommended in patients with occlusive disease or vascular risk factors and children.

DISCLOSURES

None


