

Infragenicular femoral popliteal bypass in a nonagenarian: Doctor, I am too old to live without my leg!

Doksanlı yaşlarda infrajeniküler femoropopliteal baypas: Doktor, bacağımdan yaşamak için çok yaşıyım!

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ABSTRACT

Peripheral artery disease (PAD) and intermittent claudication (IC) may be difficult to diagnose in elderly patients, as these patients are relatively immobile. Those elder patients without any previous history are often admitted to the emergency departments with sudden-onset critical limb ischemia (CLI) symptoms. Radiological tests in the emergency department may sometimes be suboptimal or interpreted incorrectly. Consideration of metabolic complications that may occur during the long revascularization period may also result in easier sacrifice of the extremity. A nonagenarian female patient was admitted to the emergency department with CLI, and the absence of the distal popliteal run-off was observed on computed tomography angiography. Her limb was salvaged upon a surprisingly strong intention for revascularization, as she did not give her consent for amputation. This case report highlights that the radiological findings should not always be credited, particularly in the emergency setting.

Keywords: Arterial occlusive disease; elderly; limb salvage.

ÖZ

Yaşlı hastalarda periferik arter hastalığı (PAH) ve intermitan klodikasyonun (İK) teşhis edilmesi, bu hastalar nispeten daha hareketsiz olduğu için güç bir hal alabilmektedir. Geçmiş öyküsü olmayan bu yaşlı hastalar çoğu kez aniden gelişen kritik bacak iskemisi (KBİ) semptomları ile acil servise başvurmaktadırlar. Acil serviste yapılan radyolojik tetkikler kimi zaman istenen düzeyde olmayabilmekte veya yanlış yorumlanabilmektedir. Yaşlı hastalarda revaskülarizasyon için geçen sürede gelişebilecek metabolik komplikasyonlar da düşünülerek ekstremitelere daha kolay feda edilebilmektedir. Doksanlı yaşlarda kadın hasta KBİ tanısı ile acil servise başvurdu ve bilgisayarlı tomografi anjiyografide distal popliteal akımının olmadığı izlendi. Hastanın amputasyon için rıza göstermemesi üzerine yapılan revaskülarizasyon sonucunda hastanın bacağı sürpriz bir biçimde kurtuldu. Bu olgu sunumu, özellikle acil şartlarda radyolojik bulgulara her zaman itibar edilmemesi gerektiğini vurgulamaktadır.

Anahtar sözcükler: Arteriyel tıkaçıcı hastalık; yaşlı; bacak kurtarma.

The term peripheral artery disease (PAD) includes the vascular diseases primarily caused by the atherosclerotic and thromboembolic disorders affecting the visceral and lower extremity branches of the aorta.^[1] It affects approximately 30% of the elderly population over 70 years of age, half of whom are likely to be almost asymptomatic.^[2] Radiological tests may be

problematic or misinterpreted during the emergency conditions. Thus, the real radiological pathology may sometimes be irrelevant with the actual anatomical pathology.

Herein, we present a female patient in her late 90s who was admitted to the emergency room with an ischemic limb and had a successful femoral popliteal

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bypass revascularization, despite discouraging preoperative radiological imaging.

CASE REPORT

A 96-year-old female was referred to the emergency department with the complaint of pain in her left leg. On admission, she was conscious and had no presenting dementia. On inspection, her left foot was ischemic and almost cyanotic, and she had the history of pain for the past eight hours. Distal pulses were non-palpable. There was an unsettled demarcation silhouette at the mid-tibial level. Medical history of the patient revealed intermittent claudication (IC) symptoms which started two years ago, but underestimated as she had limited mobilization. Color Doppler ultrasound (DUS) examination revealed a triphasic pattern in the common femoral artery which is, then, interrupted in the superficial femoral artery immediately after entering the Hunter's canal. Computed tomography (CT) angiography revealed arterial obstruction at the same level as in the color DUS (Figure 1). No appropriate arterial lumen with an antegrade distal filling was observed on CT angiography, rendering a

bypass operation impossible. She was diagnosed with chronic PAD with a critical limb ischemia (CLI). As the atherosclerotic lesion was chronic in nature, amputation of the extremity was planned after a futile intention of embolectomy, considering that it would be incapable of producing any satisfactory results. However, the patient insistently rejected amputation.

As a result, the left femoral artery was explored under general anesthesia. The superficial femoral artery was totally obstructed, and the Fogarty catheter was unable to be progressed distally through the atherosclerotic lesion. Although CT angiography did not reveal a patent lumen below the popliteal level, we decided to explore the vascular structures before deciding for amputation. We performed infragenicular exploration and, fortunately, found a small popliteal artery with a collapsed, but open lumen (Figure 2a). A gentle arteriotomy incision was made and the arterial lumen was found intact (Figure 2b). Also, the insertion and distal progression of a Fogarty catheter were easily achieved. A femoral popliteal bypass was successfully performed with a 6-mm ringed polytetrafluoroethylene (PTFE) synthetic graft (Figure 3). The biphasic pattern of the posterior tibial artery pulse was detected using intraoperative color DUS. The patient was

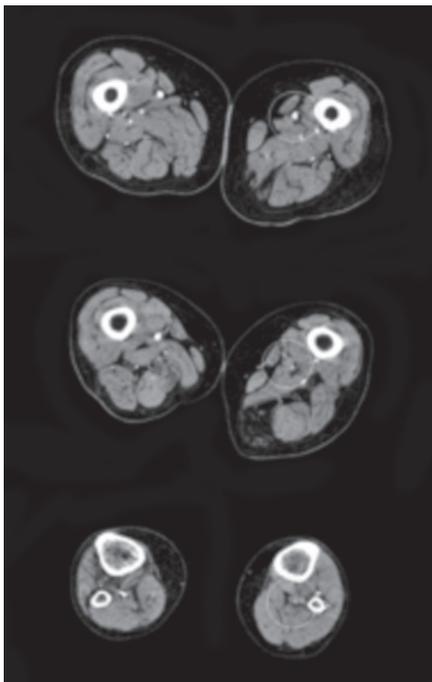


Figure 1. Computed tomography angiography scan showing that superficial femoral artery is interrupted just after entering the Hunter's canal (upper and middle sections) and the absent distal filling at the infragenicular portion (lower section).

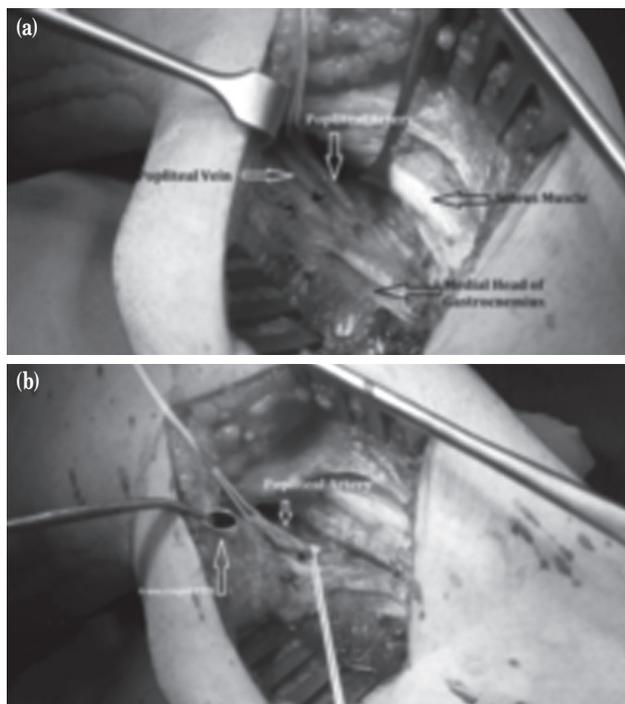


Figure 2. (a) Infragenicular exploration of the popliteal artery. (b) Popliteal arteriotomy showing an open lumen.

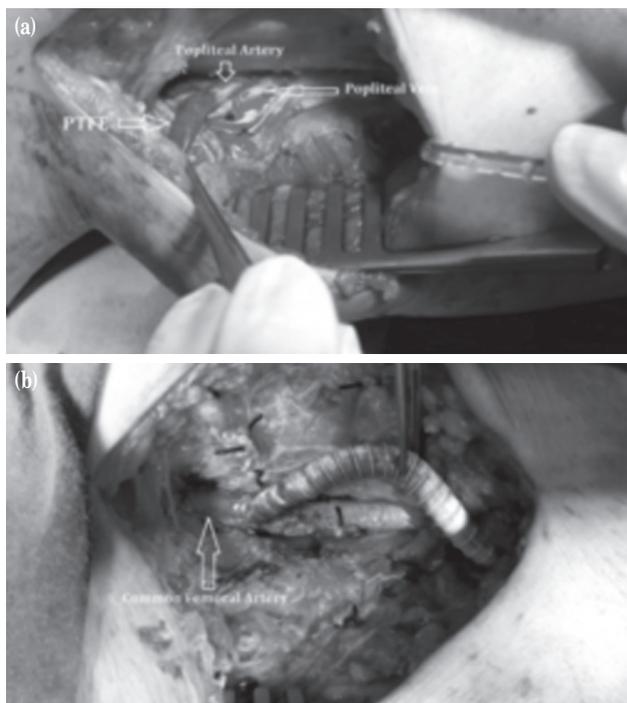


Figure 3. (a) Distal anastomosis. (b) Proximal anastomosis.

discharged with an intact perfusion and normal color of the leg on the sixth postoperative day.

DISCUSSION

The incidence of PAD is eight times higher in septuagenarians, compared to the tricenarians.^[2] However, there is no sufficient data considering the frequency and prevalence of PAD and critical limb ischemia (CLI) among the octogenarians and nonagenarians.^[3] In the nonagenarians, IC symptoms may be weakened or even absent due to relative immobilization and, thus, the disease may present as an acute CLI without any prior ischemic period, as in our case. A relatively small proportion of PAD patients with the complaints of IC are demonstrated among this age group, since most of the elder patients do not walk long enough to experience symptoms of IC. This may either be the result of an impaired vascularization of the extremities or other typical disorders at this age, such as osteoarthritis, rheumatoid arthritis or neurological diseases.^[4] Therefore, the radiological tests should better be routinely performed to upon their admittance to the outpatient clinics, even if they have no evident CI symptoms.

Furthermore, PAD is often considered as a precursor of generalized atherosclerosis, and is associated with coronary artery disease.^[5] Therefore, a thorough cardiovascular check-up should be performed soon after resolving the primary clinical intention. The status of the contralateral limb vascularity, as well as the carotid system, should be evaluated and the patient should be scheduled for the intervention as early as possible.^[4] The ankle-brachial index (ABI) should be measured in all PAD patients. However, vascular compressibility may be lost over the age of seventy and may cause incorrect results.^[1,3]

The misrepresentation or underestimation of a radiological imaging may also occur due to some technical reasons. These technical pitfalls include the technician mistakes, radio-opaque material dosing errors, and the calculation faults of the radio-opaque perfusion sequence. These parameters should be also carefully considered before interpreting the radiological imaging findings. This case report should remind the clinicians that the radiological images are not always reliable, and an elder patient is not always a potential candidate for immediate amputation without a struggle. In addition, prompt intervention significantly decreases mortality and morbidity in the elderly patients with CLI.^[6]

In conclusion, although this intervention is not a novel technique, it has an important message to the readers. This case is important to remind that the preoperative radiological imaging does not always match with the real anatomy. One should not always rely on the radiological images, and the age of the patient is not an obstacle for an aggressive intervention. In addition, the age of the patient should not discourage the surgeon for salvaging the extremity.

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