

Infragenicular Femoropopliteal Bypass in A Nonagenarian: Doctor, I am Too Old to Live Without My Leg! Case Report

Doksanlı Yaşlarda Infrajeniküler Femoropopliteal Baypas: Doktor, Bacacağım Olmadan Yaşamak için Çok Yaşlıyım!

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ABSTRACT Peripheral arterial disease (PAD) and intermittent claudication (IC) may sometimes be hard to diagnose in elderly patients as they are relatively immobile. Those elder patients without any previous history often admit to the emergency departments straightaway with critical limb ischemia (CLI) symptoms. Radiological tests in the emergency department may sometimes be sub-optimal, or interpreted incorrectly. Additionally, consideration of the metabolic complications that may occur during the long revascularization period may result in easier sacrifice of the extremity. A nonagenarian patient was admitted to the emergency department with CLI, and the absence of the distal popliteal run-off was observed on computerized tomography angiography scan. Her limb was salvaged upon a surprisingly strong intention for revascularization as she did not give her consent for amputation. In this case report, we aimed to demonstrate that the radiological findings should not always be credited, particularly in emergency conditions.

Key Words: Aged; arterial occlusive diseases; limb salvage.

ÖZET Periferik arter hastalığı (PAH) ve intermitan klodikasyonun (İK) değerlendirilmesi, göreceli olarak daha hareketsiz olan yaşlı hastalarda bazen teşhisi güç bir hal alabilmektedir. Geçmişte belirgin bir hikayesi olmayan bu yaşlı hastalar bu yüzden çoğu kez, aniden gelişen kritik bacak iskemisi (KBİ) semptomlarıyla acil servise başvurmaktadırlar. Acil serviste yapılan radyolojik tetkikler de kimi zaman suboptimal olmakta, veya yanlış yorumlanmaktadır. Ayrıca yaşlı hastalarda revaskülerizasyon için geçen uzun sürede gelişebilecek metabolik komplikasyonlar da düşünülerek ekstremitelere daha kolay feda edilebilmektedir. Doksanlı yaşlarında bir hasta KBİ tanısı ile acil servise başvurmuş ve çekilen bilgisayarlı tomografi anjiyografisinde distal popliteal akımının olmadığı görülmüştür. Hastanın amputasyonu kabul etmemesi üzerine yapılan revaskülerizasyon girişimi sürpriz bir biçimde başarılı olmuş ve hastanın bacağı kurtulmuştur. Bu olgu sunumunda, özellikle acil şartlarda edinilen radyolojik görüntüye her zaman itibar edilmemesi gerektiğinin gösterilmesi amaçlanmıştır.

Anahtar Kelimeler: Yaşlı; arteriyel tıkaçıcı hastalık; bacak kurtarma.

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The term “peripheral arterial 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 PAD 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.

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In this paper, We present a patient in her late nineties who admitted to the emergency room with an ischemic limb, and had a successful femoropopliteal bypass revascularization despite discouraging preoperative radiological imaging.

CASE REPORT

A 96-year-old female referred to the emergency department with the complaint of pain in her left leg. 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 last eight hours. Distal pulses were non-palpable. There was an unsettled demarcation silhouette at the mid-tibial level. The history of the patient revealed intermittent claudication (IC) symptoms that 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. Computerized tomography (CT) Angiography revealed arterial obstruction at the same level as in the DUS (Figure 1). The appropriate arterial lumen with an antegrade distal filling was not observed on CT Angiography, making a bypass operation impossible. She was diagnosed with chronic PAD, with a critical limb ischemia (CLI). The atherosclerotic lesion was chronic in nature. Therefore, amputation of the extremity was planned after a futile intention of embolectomy, knowing that it would be incapable of producing any useful results. However, the patient insistently rejected amputation.

The left femoral artery was explored under general anesthesia. The superficial femoral artery was totally obstructed, and the Fogarty catheter could not be progressed distally through the atherosclerotic lesion. Although the 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

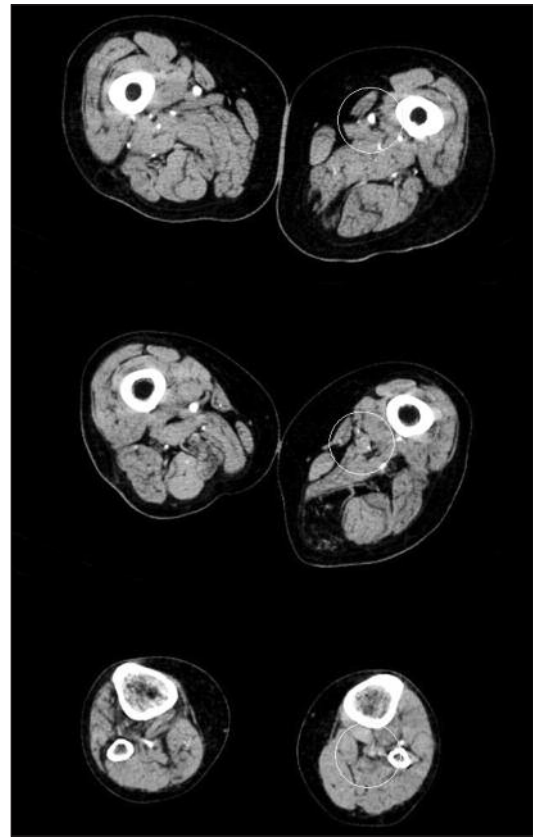


FIGURE 1: Computerized tomography angiography scan revealing the superficial femoral artery is interrupted just after entering the Hunter's canal (upper and middle sections) and the absent distal filling at the infragenicular portion (lower section).

lumen (Figure 2 a). A gentle arteriotomy incision was made, and the arterial lumen was found intact (Figure 2 b). Moreover, insertion and distal progression of a Fogarty catheter were easily achieved. A femoropopliteal bypass was successfully performed with a polytetrafluoroethylene (6 mm, ringed PTFE) synthetic graft (Figure 3). The biphasic pattern of the posterior tibial artery pulse was detected with an intraoperative DUS examination. The patient was discharged with an intact perfusion, and normal color of the leg on the sixth postoperative day.

Consent: Written informed consent was obtained from the patient for publication of this case report and accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal on request.

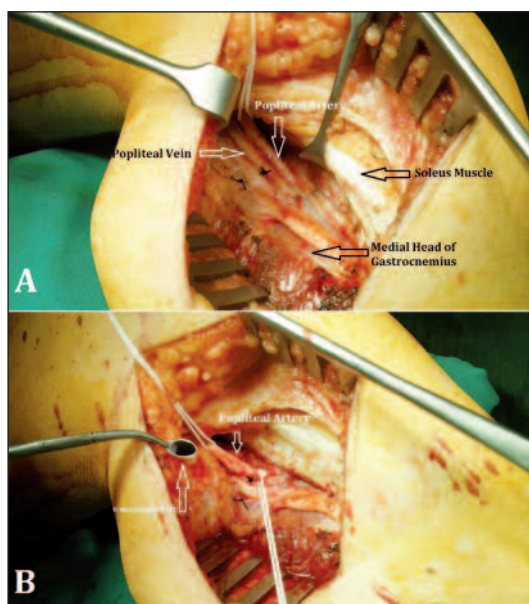


FIGURE 2: a) Infragenicular exploration of the popliteal artery b) Popliteal arteriotomy revealed an open lumen.

DISCUSSION

The incidence of PAD is eight times higher in septuagenarians compared to the tricenarians. However, there is no sufficient data considering the frequency and prevalence of PAD and CI among the octogenarians and nonagenarians.³ In the nonagenarians, the 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.

PAD is often considered as a precursor of generalized atherosclerosis, and it is associated with coronary artery disease.⁵ Thus, a complete cardiovascular check-up should be performed soon after resolving the primary clinical intention. 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 also be carefully considered before interpreting the radiological imaging. 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.

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. We concluded that prompt intervention significantly de-

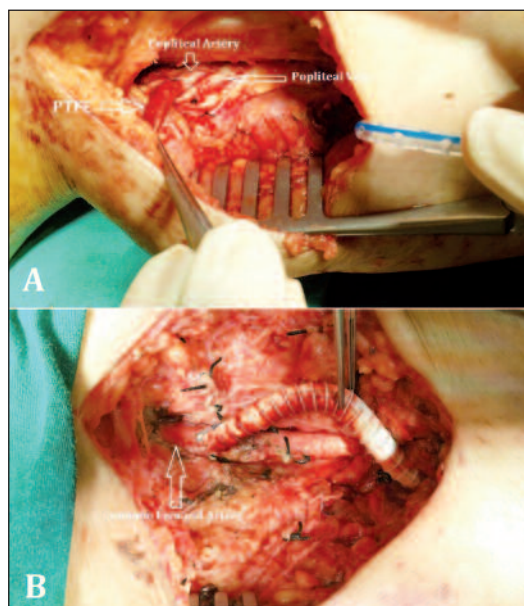


FIGURE 3: a) Distal anastomosis b) Proximal anastomosis.

creases mortality and morbidity in the elderly patients with CLI.⁶ Moreover, the age of the patient should not discourage the surgeons for salvaging the extremity.

Conflict of Interest

Authors declared no conflict of interest or financial support..

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