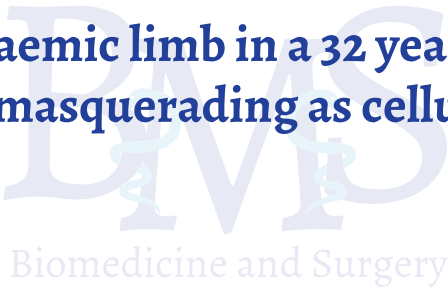


## Case report

# Ischaemic limb in a 32 year old, masquerading as cellulitis



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## ABSTRACT

A 32-year old man was admitted under the care of the Trauma and Orthopaedics team at a District General hospital with a 3-month history of a painful, erythematous right foot that had been preceded by paronychia of the right big toe. The presumed cellulitis was initially treated with flucloxacillin. A 5-day course of intravenous antimicrobial treatment resulted in no improvement. Clinical re-assessment revealed critical limb ischaemia. Arterial duplex and later angiography confirmed a popliteal artery occlusion. The patient underwent a femoral to below knee popliteal artery bypass with good results. This case demonstrates the importance of performing a thorough multi-system examination in cases of presumed cellulitis to avoid missing an unusual presentation of alternative pathology.

**KEYWORDS:** limb ischaemia; cellulitis; Buerger's; vasculitis

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**Date received:** August 19th 2017

**Date accepted:** September 22nd 2017

## INTRODUCTION

Limb ischaemia is rare in the young adult population and the aetiology often occult, leading to the potential for misdiagnosis. The consequences of missing such a diagnosis, particularly in the acute setting, can be significant. In this case, the presentation with erythema, the associated paronychia and the young age of the patient resulted in the mistaken diagnosis of cellulitis without a thorough vascular assessment of the limb being undertaken at presentation.

## CASE REPORT

A 32-year old man presented to emergency department with a painful erythematous right foot. He described a 3-month history of redness, pain and

swelling of the foot, preceded by a paronychia of the right big toe for which he was on oral antibiotics. He was admitted for intravenous flucloxacillin and monitoring. His inflammatory markers were low at presentation. This was attributed to the use of antibiotics. His past medical history included hypertension and he was a heavy smoker of 30 cigarettes per day from the age of 15.

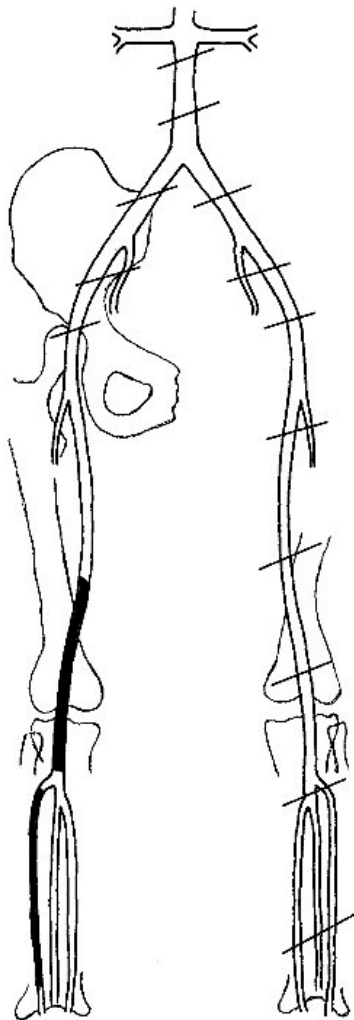
Following 5 days of intravenous antibiotics, his inflammatory markers remained low but clinically there was little improvement. This prompted a thorough reassessment of the foot. Buerger's test revealed pallor on elevation to 10° followed by florid reactive hyperaemia (figure 1). Ankle-brachial pressure index (ABPI) measurement of the dorsalis pedis (DP) and posterior tibial (PT) pulses were performed. DP pulses were undetectable on the right,

DOI: [10.5281/zenodo.1044003](https://doi.org/10.5281/zenodo.1044003)

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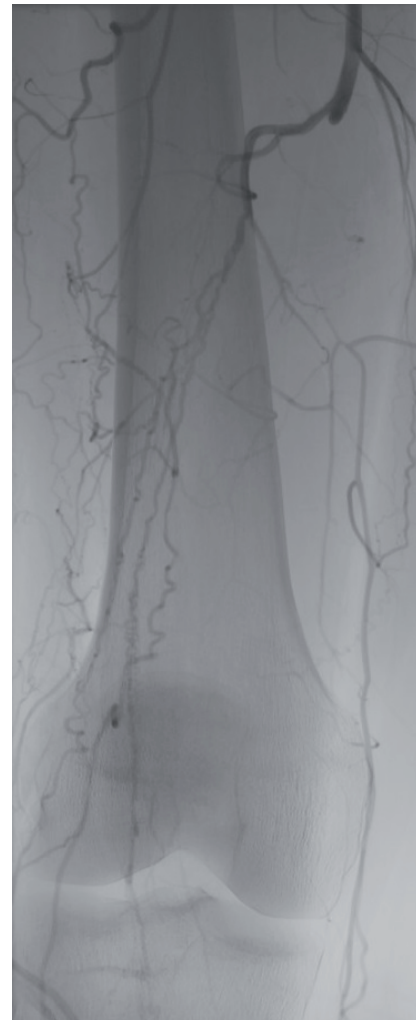


**Figure 1.** left: foot at the horizontal level, middle: foot at 10° elevation demonstrating pallor, right: reactive hyperaemia.



**Figure 2.** Duplex angiogram demonstrating levels of arterial occlusion.

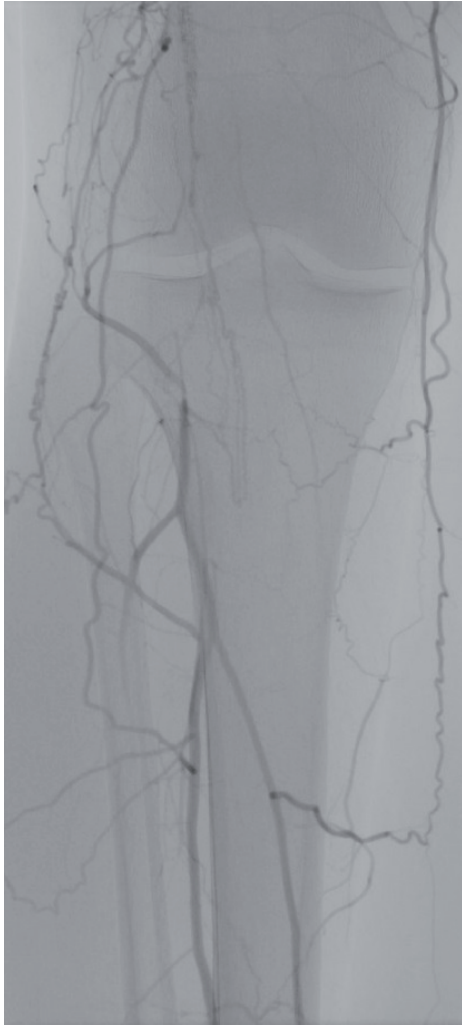
ABPI (PT) on the right was 0.41. Left ABPI (PT)= 0.61. Left ABPI (DP)=0.65. A blood screen for aetiology was undertaken and the patient was referred to Vascular Surgery. Screening blood tests were performed to exclude autoimmune or coagulopathic aetiology.



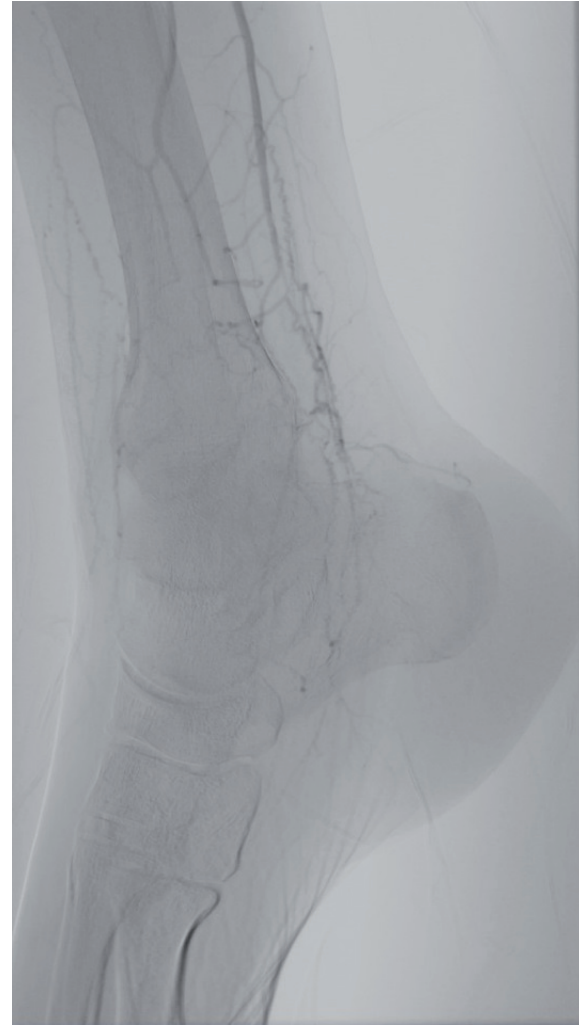
**Figure 3.** Angiogram demonstrating SFA occlusion.

Arterial duplex and angiography were diagnostic.

Arterial duplex demonstrated occlusion of the superficial femoral artery (SFA) from the mid-thigh, 15cm above the knee crease. The popliteal artery



**Figure 4.** Angiogram demonstrating reconstitution of flow in the distal popliteal artery via knee collaterals.



**Figure 5.** Angiogram demonstrating poor blood flow to the foot.

appeared chronically occluded measuring 2-3mm in diameter. In addition, the anterior tibial artery (AT) was mostly occluded, reconstituting at the ankle. The tibioperoneal trunk (TPT), peroneal and posterior tibial (PT) arteries were patent on duplex (figure 2).

Angiography suggested more extensive disease. The SFA was shown to be patent in the proximal and middle thirds beyond which it was occluded (figure 3). Reconstitution of flow occurred distally via collaterals at the level of P3 (figure 4). AT was occluded shortly beyond its origin. Angiography demonstrated PT was patent up to the level of the ankle joint at which point it was occluded. Beyond the ankle joint, collaterals via the PT perfused the plantar aspect of the foot. The peroneal origin was also occluded and filled via a large above-knee collateral. There was only a very small amount of flow into the proximal DP via peroneal collaterals with no significant flow to the dorsum of the foot (figure 5).

The patient underwent a right femoral to below knee popliteal artery bypass using a reversed left long saphenous vein graft. He made good

postoperative recovery with a well-perfused limb. His pain resolved.

## DISCUSSION

There have only been a handful of cases of young patients presenting with isolated popliteal artery occlusion and the aetiology is often difficult to determine (1). In this patient, other causes of arterial occlusion were excluded, making Buerger's disease a possibility (2). Diagnostic criteria for Buerger's disease are equivocal but universally associate young, heavy smokers with no other risk factors for arterial occlusion.

In this case, an initial paronychia promoted the misdiagnosis of an infective cause for the signs and symptoms shown by the patient. The paronychia may well have been a coincidence. Otherwise, the developing limb ischaemia may have contributed to the paronychia before revealing itself with overt signs and symptoms experienced by the patient. This, in addition to the presentation of an erythematous foot, rather than the more classical pallor, resulted

in a misdiagnosis. This is useful to bear in mind for future similar cases.

Key learning points include undertaking a full systematic examination of multiple organ systems to help prevent misdiagnosis. Critical limb ischaemia is a rare but significant diagnosis to make in a young patient. Finally, frequent re-assessment of a patient who is not responding to treatment is key.

### **ETHICAL APPROVAL**

A written informed consent was signed by the patient.

### **REFERENCES**

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