

Case 23 A painful calf

A building construction worker aged 48 years is referred by his family practitioner to the vascular clinic of a university hospital. His excellent referral note reads as follows:

The patient has been a heavy smoker since his teens. He has attended the surgery for the past year or so with pain in the left calf on walking. I have tried, without any success at all, to cut down his 30 cigarettes a day habit. Recently the pain has got much worse, so that he can now only hobble a few yards, and I have had to sign him off work. On examination the left foot is cold and pale. Although I can feel all the pulses in his right leg, I can only find his left femoral pulse. His BP is 150/80 and his capillary glucose was normal.

What is your provisional diagnosis on reading this letter?

He has severe claudication pain affecting the calf muscles of the left leg as a result of occlusion of the arterial supply to his lower limb. The block is somewhere between the femoral artery at the groin, whose pulse can be felt, and the popliteal artery, whose pulse is impalpable.

Are there any further details you would want to elicit in your history and examination of this patient?

Yes indeed. You would want to find out if there is clinical evidence of other areas involved in this occlusive arterial disease. Enquire carefully for any history of angina pectoris or transient ischaemic attacks (TIAs), and any story that might suggest a previous myocardial infarct or cerebral vascular accident. Carefully examine the heart and central nervous system, and examine the blood vessels of the retina through an ophthalmoscope.

Locally, is the skin of the foot cold, does it look pale or cyanotic, does it blanch on elevation and become cyanosed when hanging dependent (Buerger's sign*), and do

the superficial veins of the leg 'gutter' when the leg is elevated? Is the return of capillary circulation to the toes delayed when the skin is blanched by firm pressure?

A useful measurement is to take the brachial blood pressure and then the lower limb pressure using a special long blood pressure cuff. Normally, the brachial and ankle pressures are about the same. 'Critical ischaemia' is defined as when the ankle pressure is less than 50% of the brachial pressure (the ankle-brachial pressure index, ABPI). It will almost inevitably be so in this case, but the test provides useful objective documentation.

At the peripheral vascular clinic, an urgent arteriogram was ordered, and is shown here. What does it demonstrate?

There is a short block at the bifurcation of the left common femoral artery (Fig. 23.1, arrowed); the main vessels show irregularities due to atherosclerosis. Collateral vessels can be seen around this occlusion.

What is the condition of the artery distal to the obstruction on the left side, and why is this important?

The distal superficial femoral artery and the popliteal artery are patent. This means that there is a 'good run-off' and, other things being equal, the patient is suitable for some sort of reconstructive procedure.

How can the patient's disabling symptoms be treated?

Smoking must be prohibited. There is little point in carrying out any reconstructive procedure unless the patient gives up the habit because of the very high risk of re-occlusion. This short section of occlusion is best treated by angioplasty using a balloon catheter under X-ray control, with or without insertion of a stent.

*Leo Buerger (1879–1943), born in Vienna, surgeon, Mount Sinai Hospital, New York.

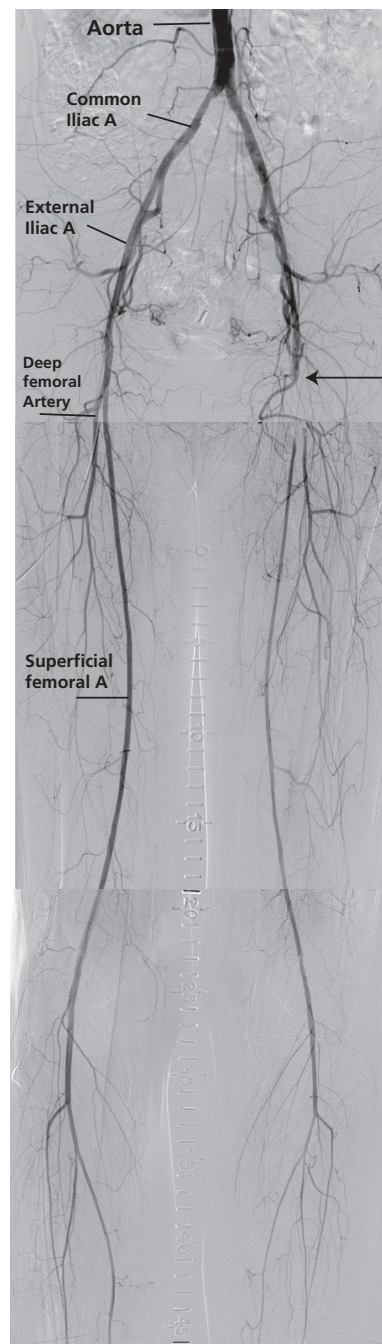


Figure 23.1 Arteriogram of the patient showing the arteries from aortic bifurcation to calf. The block in the left superficial femoral artery is arrowed. A, artery.