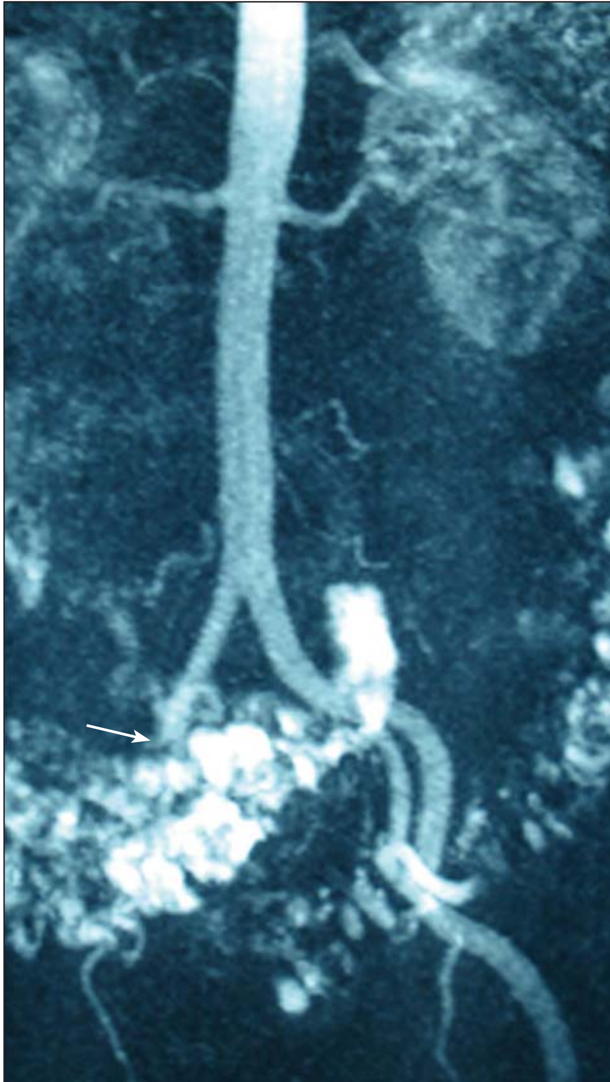
Phantom limb claudication

Figure 1. Magnetic resonance angiogram showing right external iliac occlusion (arrow).



Introduction

Over 6000 leg (hindquarter, hip disarticulation, above knee, through knee and below knee) amputations are undertaken in the UK each year (National Amputee Statistical Database, 2006). It is not unusual for amputees to develop pain or discomfort in the stump or absent leg and such patients will present to a variety of clinicians including accident and emergency doctors, orthopaedic surgeons, vascular surgeons, rehabilitation specialists and pain specialists. It is important to accurately diagnose and treat the pain as it causes much morbidity and can affect mobility.

This case report clearly shows that pain in the absent limb is not always phantom limb pain: in the case reported here the patient was suffering from 'phantom claudication' which can be diagnosed clinically by simple history and examination.

Case Report

A fit and well 29-year-old man underwent a right above-knee amputation in 1976 as a result of severe trauma sustained in a road traffic accident. After rehabilitation, he remained well and mobilized independently with his prosthesis. Twenty nine years later he was admitted to hospital for an infection of his stump following minor trauma.

There was no history of diabetes, hypertension or smoking. He was taking aspirin and lipid-lowering medication. During his admission and subsequent follow up, he gave a clear history of not only right stump (thigh) claudication but also claudication in his absent right calf when mobilizing with his prosthesis after walking 50 yards. The pain was relieved quickly by ceasing to walk. The claudication persisted after the stump was well healed.

At re-presentation, both the arterial duplex scan and magnetic resonance angiogram showed occlusion of the right external iliac artery (*Figure 1*).

His stump healed well with no surgical intervention or complication. He was advised to exercise to improve the claudication. After 4 months he was able to walk 100 yards without claudicating.

Discussion

There are several possible causes of pain at various stages after lower limb amputation. These are commonly orthopaedic or neurological, including phantom limb pain. However, the clinician should also consider vascular disease as a cause for the pain.

One would expect claudication pain to occur in the remaining muscle group(s) supplied by the stenosed or occluded artery. However, in this case, the claudication pain was also felt in the amputated calf. This characteristic pain has only been reported (in German) in two cases previously, again in traumatic amputees, and the term 'phantom claudication' was coined by the author (Franke, 1975). Both the German patients had angiographically proven iliac disease and reconstructive surgery resulted in symptom resolution.

The appropriate treatment here was conservative but the case serves as a reminder that pain in an amputation stump or absent limb on walking can be of a vascular origin, even if the amputation was undertaken for trauma rather than ischaemia. The femoral pulse should always be checked and imaging (duplex or arteriography) arranged as clinically indicated. A thorough history of the pain should raise the possibility of thigh or phantom claudication. This is a different clinical entity from phantom limb pain and efforts to treat it as the latter will have little success (Franke, 1975). It should not be assumed that pain in the absent leg, especially on walking with a prosthesis, is phantom limb pain. Other causes should be excluded by careful history, examination and investigation where indicated. **BJHM**

Franke F (1975) Arterial occlusion in two leg amputees. "Phantom claudication" due to pelvic artery stenosis. *Deutsche Med Wschr* **44:** 2275–7 (article in German)

National Amputee Statistical Database (2006) *Annual Report 2004-2005.* www.nasdab.co.uk/pdf.pl?file=nasdab/news/Miscellaneous_and_Additional_Information.pdf (accessed 12 August 2007)

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