British Heart Foundation

Factfile 9/2001

PERIPHERAL VASCULAR DISEASE

Intermittent claudication

The term claudication is allegedly named after the Emperor Claudius who limped. Patients with intermittent claudication (IC) experience cramping pain and weakness in the calf and/or buttocks on walking. The pain usually disappears upon standing still and occurs at a fixed distance walked before it recurs. It comes on more rapidly when walking uphill than on the flat. The condition is caused by atherosclerosis of the peripheral arteries, is more common in men than women and usually presents after the age of 50 years. It is particularly common in smokers and 10% of affected patients are diabetic.

Diagnosis

The differential diagnosis of pain in the lower limb when walking includes sciatica, deep vein thrombosis and muscle injury. Examination of the affected limb(s) reveals absent pulsation and sometimes the leg is paler with a loss of hair. The investigation of choice is colour duplex scanning which reveals the site of the arterial stenosis causing the problem. Blood lipids should be checked as patients with IC are at an increased risk of stroke and heart attack. Furthermore, 60% of patients with IC have evidence on ECG of pre-existing coronary heart disease and approximately one third will have been treated for hypertension.

Management

The key to management is to encourage patients to walk as much as possible and to stop smoking[1]. Walking through discomfort is not damaging and indeed promotes the collateral circulation leading to an improvement in walking capacity. Although other forms of exertion have been advocated they are no better and walking programmes have been shown to be effective.[2] The further the patient can walk on the flat in six minutes[3], the lower is the risk of a cardiovascular event.[3] Patients with IC are at high risk of complications of cardiovascular disease and for this reason they should be maintained on low dose aspirin (unless contra-indicated). In addition, patients with elevated cholesterol concentrations should receive statin therapy. If medical management proves inadequate patients with IC should be investigated in a specialist vascular unit with an integrated approach from vascular surgeons and interventional radiologists. Depending upon the results of investigations, balloon angioplasty with or without a stent may be considered.[4] This procedure requires an overnight stay. Bypass surgery is only required in the most severe cases and this may necessitate admission for up to two weeks.

Ischaemic Rest Pain

Severe, extensive peripheral arterial disease can lead to persistent pain in the foot and toes particularly at night. Classically, the patient hangs his leg out of the bed in order to increase blood flow and relieve the pain. Typically such patients are male, smoke and are aged over 60 years; about 20% are diabetic. The majority have evidence of extensive arterial disease.

Raising the affected leg allows the blood to drain from the limb, which becomes pale. When it is lowered it turns dark blue and becomes engorged. There may also be evidence of ulceration or gangrene. Such patients require urgent referral to a specialist vascular unit. The principles underlying management are essentially similar to those described above. Fortunately, some 90% of patients can have their problems corrected either by balloon angioplasty or surgical revascularisation. However, about 10% of patients will require an amputation (usually below the knee). Amputation is most likely to be necessary in those patients who continue to smoke.

Finally, because of the probability of significant coronary artery disease, patients who require vascular surgery to the lower limb(s) may need coronary artery revascularisation as a prelude.

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Factfile *is produced by the British Heart Foundation in association with the British Cardiac Society and is compiled with the advice of a wide spectrum of doctors, including general practitioners. It reflects a consensus of opinion.*

References:

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3. Bittner V et al "Prediction of mortality and morbidity with a 6-minute walk test in patients with left ventricular dysfunction". JAMA 270: 1702-7.

4. Reekers JA, Bolia A "Percutaneous intravascular extraluminal (subintimal) recanalisation: how to do it yourself". *Eur. J. Radiol.* 1998, 28: 192-8.