

Peripheral Vascular Disease

Patient Awareness

Interventional Radiology:
your alternative to surgery

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Cardiovascular and Interventional Radiological Society of Europe

PERIPHERAL VASCULAR DISEASE (PVD)

(also known as *Peripheral Arterial Disease - PAD*)

Atherosclerosis:

the thickening or hardening of the wall of large body arteries or the deposition of lipid-rich material.



Atherosclerosis

Cross-section of body artery:

Increasing degree of atherosclerotic artery damage



Normal

Slight lesion

Advanced lesion

Subtotal occlusion

The Facts

Risk Factors

- increased blood lipids
- smoking
- high blood pressure
- hypertension
- diabetes
- lack of physical exercise
- overweight

These risk factors in particular increase the normal aging process of the arteries, which can be fatal even at a young age. The occlusion of a coronary artery can lead to myocardial infarction, and an obstructed carotid artery can cause a stroke. In western countries, myocardial infarction and stroke are the most common causes of death.

The blood vessels continue to narrow over months and years, and at some point the arteries become completely blocked.

Symptoms

- Pain in calf or thigh muscles when exercising, walking or going upstairs
- Non-healing ulcers or wounds
- Continued leg pain at night or a red-coloured foot
- Buttock claudication

You have to interrupt the exercise and stand still. After some minutes of resting you can continue walking. After a while, the pain free walking distance decreases, the pauses necessary when walking increase. Finally, complaints occur after a few metres of walking or during slight physical exercise.

A critical state of PVD "critical ischemia"



PVD: a progressive condition

Stop smoking and keep walking

(the most important basic treatment as described by E. Housley, the Scottish specialist of PVD)

Lifestyle

In most PVD patients, treatment requires changes in lifestyle. Smoking cessation and a structured exercise programme are often all that are required to alleviate symptoms and prevent further progression of the disease.



Medication

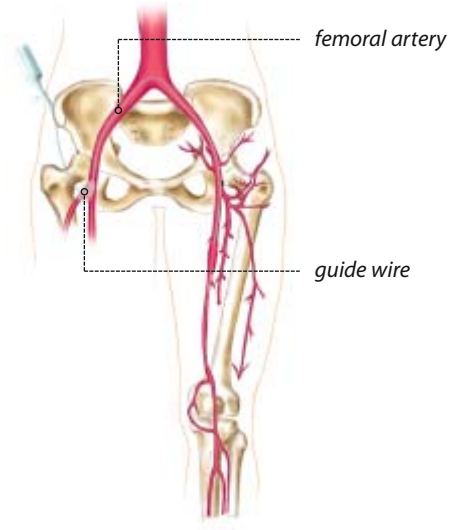
PVD patients frequently have elevated blood lipids that contribute to the disease. A low-fat diet and cholesterol-lowering drugs are often part of the treatment plan. Drugs that control high blood pressure may be prescribed. Many patient studies demonstrated that administration of low-dose aspirin can prevent blood clots and therefore should be taken by patients with symptomatic PVD.



Interventional Radiology: Angioplasty & Stenting

This minimally invasive treatment does not require general anaesthetic.

The Interventional Response



*Principle of angioplasty:
the puncture is made and the guide wire threaded
into the femoral artery*

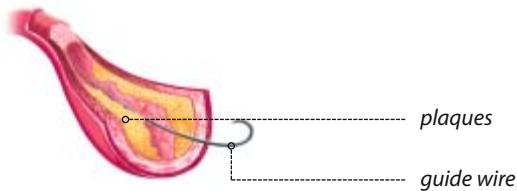


Implantation of a Stent

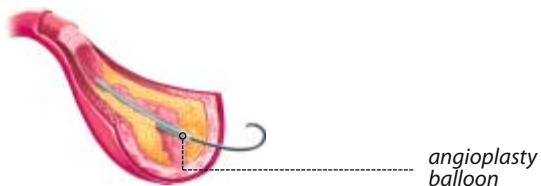


Balloon Angioplasty

Angioplasty



First of all, a guide wire is inserted up to the lesion site.



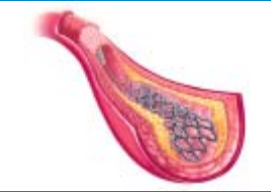
An angioplasty balloon is pushed over the guide wire.



The balloon is inflated so as to widen the artery walls and compress the plaques (build up of cholesterol and other fatty deposits on the artery walls).



In some cases, a stent (small, metal mesh tube supporting the inside of the artery) is implanted. This can either be placed on the balloon or is, by nature, self-expandable.



The stent is positioned at the level of the lesion, the balloon is deflated and the guide wire removed, only the stent remains in place.



The stent remains in place and the artery walls are now widened, the artery no longer runs the risk of narrowing.

Before



plaques
blood

An artery completely obstructed by plaques. Very poor blood circulation accounts for the related symptoms.

After



With plaques compressed against the walls, the artery's diameter is restored and blood circulation is back to normal.

Currently, new methods for reopening obstructed blood vessels are being researched

(cryoplasty, laser angioplasty, rotation ablation angioplasty)

Organisation

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