

Venous Diseases

Venous disorders are very common and especially affect the lower limbs. 20% of population suffers with varicose veins and 2% have skin changes which may precede venous ulceration.

Venous incompetence- varicose veins

One of the most common problems with the veins of the leg is the failure of their valves.

Varicose veins are recognized as tortuous dilated veins in the leg but physiologically speaking a varicose vein is one which permits reverse flow through its incompetent valves. Varices of major tributaries of the saphenous veins or the saphenous veins themselves are large (5-15 mm diameter) and usually start in the calf. Later Varices of the long saphenous system may also appear in the thigh. Patients may develop much smaller varices. These range from 0.5 mm diameter vessels in the skin which are commonly referred to as thread veins.

Clinical features

Often there are no specific symptoms but the cosmetic appearance is unsatisfactory. Patients may also report aching especially on standing, itching, restless legs and ankle swelling the severity of the symptoms is unrelated to the size of the veins and is often more severe during the early stages of development of varices.

Complications of varicose veins

1. Thrombosis which is referred to as superficial thrombophlebitis.
2. Hemorrhage can occur when large superficial varices are damaged.
3. Ulceration which complicates varicose veins in less than 5% of patients.

Deep vein incompetence

Valvular incompetence of deep veins may develop in the same way as in superficial venous system with degeneration of the valve cusps resulting in reverse flow in these veins. In other patients it may follow a deep vein thrombosis.

Clinical features of deep vein incompetence

In patient with venous valvular incompetence the calf muscle increases in size apparently in response to the greater work in returning blood from the leg. Also there may be ankle edema especially in those patients who have persistent venous obstruction.

An early sign of skin injury is brown pigmentation due to hemosiderin deposition in the skin.

Later more serious stage is lipodermatosclerosis in which palpable indurations develop in the skin and subcutaneous tissue.

Investigations of venous disease:

Doppler ultrasound: is now the minimal level of investigation required for before treating some body with venous disease.

Plethysmographic techniques: in this investigation a probe is attached to skin to assess venous filling of the surface venules by measuring light transmission of the skin.

Duplex ultrasound imaging: it's allow direct visualization of the veins and provides functional as well as anatomical information.

Venography: an ascending venogram is performed by cannulating a vein in the foot in order to inject x-ray contrast medium.

Management of patients with varicose vein

- Compression stocking: the symptoms of varicose veins may be relieved by the use of compression stocking.
- solution which destroys the endothelial lining of veins is injected, this leads to sclerosis of the vein and replaced by fibrous cord. The most widely employed drug is sodium tetradecyl.
- Surgical treatment of varicose veins: the main principles of surgical treatment are to ligate the source of venous reflux (usually the sapheno-femoral junction or the sapheno-popliteal junction) and to remove the incompetent saphenous trunk and the associated varices.

Deep vein thrombosis (DVT)

Is a serious life threatening condition which may lead to sudden death in short term (if complicated by pulmonary embolism) or to long term ulceration. The most common location of DVT is the lower limb.

Factors which lead to DVT: these were originally described by Virchow over a century ago.

1. Change in the vessel wall with damage to the endothelium due to injury or inflammation.
2. Diminished rate of blood flow in the vein. This may occur during and after surgical operation and debilitating conditions such as stroke and myocardial infarction.
3. Increased coagulability of the blood, this also occurs following and the presence of infection or systemic malignancy.

Signs and symptoms of DVT

The clinical features of a lower limb DVT are:-

- swelling
- pain and redness
- dilated superficial veins
- calf tenderness
- low grade pyrexia

Investigations: the test of choice is duplex ultra sound because it's non invasive, hazard free method of investigation. If this not available then ascending phlebography should be undertaken.

Differential diagnosis of DVT: - this includes

١. Ruptured baker's cyst.
٢. Superficial thrombophlebitis.
٣. Calf muscle hematoma.
٤. Ruptured plantaris tendon.

Treatment of DVT: standard treatment involves intra venous heparin with dose adjusted according to weight of patient and controlled according to activated partial thromboplastin (APTT). The duration of heparin treatment should be at least 5 days. The aim is minimize the risk of pulmonary embolism and encourage thrombus to resolve. At the same time the patient should be commenced on warfarin, the duration of treatment with warfarin usually 3-6 months. Warfarin dosage is controlled by measurement of international normalized ratio (INR), the INR should be prolonged between 2.5 and 3.5 times the control value. The more modern treatment is thrombolysis, achieved by passing catheter into affected vein and infusing fibrinolytic drug such as streptokinase or tissue plasminogen activator (TPA).

Venous thrombectomy

Occasionally massive venous thrombosis in the lower limb leads to sever impairment in blood supply to the limb leading to ischemia and eventually gangrene. This is surgical emergency and requires rapid relief of venous obstruction, this can be achieved surgically by opening femoral vein via incision in the groin and removing all the clot from the deep veins of the leg and the pelvis by balloon catheter.