

3. DEEP VEIN THROMBOSIS

Deep vein thrombosis is the formation of a clot in one of the deep veins of the body commonly in the deep veins of the lower limb. The blood clot can partially or completely block the flow of blood. DVT may arise spontaneously or after injury or immobility to the limb. The complications of DVT such as pulmonary embolism and post thrombotic syndrome are the most common cause of hospital death and source of substantial long term morbidity.

- ◆ Calf vein DVT is the commonest
- ◆ Iliofemoral DVT is the most symptomatic
- ◆ Inferior vena cava thrombosis is the most lethal

Risk factors in the elderly

Individual related

- ◆ Smoking
- ◆ Hormone replacement therapy
- ◆ Obesity
- ◆ Long distance air /car travel

Illness / injury related

- ◆ Previous DVT
- ◆ Hypercoagulable states
- ◆ Myocardial infarction
- ◆ Trauma
- ◆ Advanced cancer

Intervention related

- ◆ Recent surgery
- ◆ Immobilization/paralysis
- ◆ Central venous catheterizations
- ◆ (three D's – Diameter, Drugs, Duration)

Presentation - Asymptomatic or silent
 Symptomatic
 Pain
 Limb swelling
 Pyrexia
 Pulmonary embolism

Progression of the disease

This may lead to limb threatening complications of phlegmasia alba dolens (painful white leg) and with the thrombosis involving both superficial and deep veins, phlegmasia cerulea dolens. (Blue leg) They may also primarily present with symptoms of pulmonary embolism.

Clinical features

Any unilateral limb swelling must be considered to be DVT unless proved otherwise.

- Limb swelling
- Pain
- Pyrexia
- Dilated superficial veins
- Tenderness along the deep veins

Moses sign – pain on pressing the calf muscle is the most reliable and Homans sign-pain in the calf on dorsiflexion of the foot (not reliable, may promote embolisation and hence should not be done.)

Differential diagnosis

- Cellulites
- Arthritis
- Muscle spasm
- Muscle haematoma
- Ruptured bakers cyst
- Kidney/heart/liver failure
- Lymph edema

Investigations

- Complete blood count
- Clotting profile
- D-dimer estimation
- Hypercoagulable screening
- Doppler ultrasound
- **Duplex scanning**
(Gold standard)
- Venography
- Magnetic Resonance Venogram

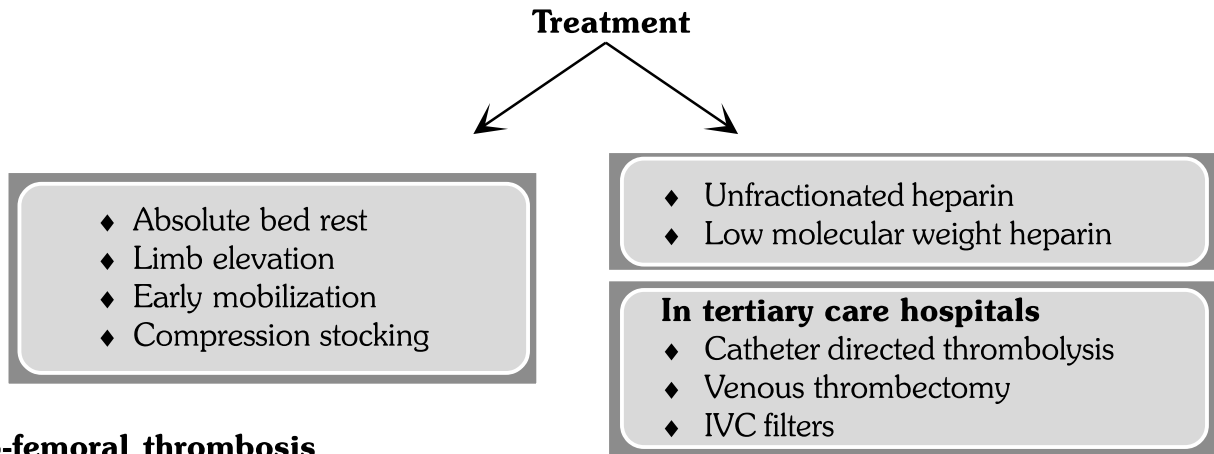
Well's clinical predictability score

A pretest predictability scoring is done in all the patients and investigations are carried out depending on the score

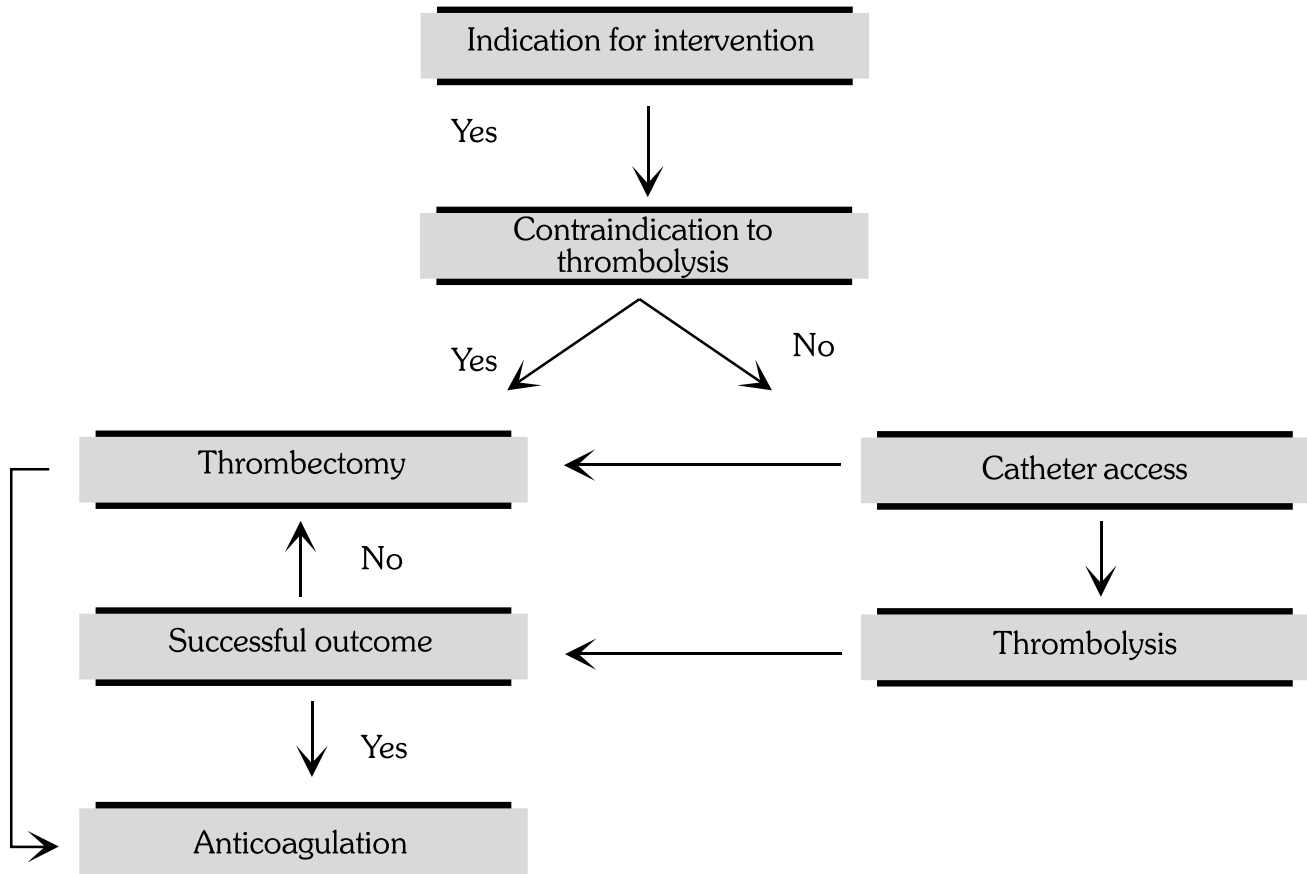
Well's Clinical predictability score

Clinical feature	Score
Active cancer	1
Paralysis/paresis/immobilization in POP	1
Recently bed ridden more then 3 days or major surgery within 4 wks	1
Tenderness along deep veins	1
Entire leg swollen	1
Calf swelling more then 3cm compared to opposite leg	1
Pitting edema	1
Collateral veins non-varicose	1
Alternate diagnosis likely	-2

Low < 0, Moderate 1 to 2, High >3)



Ilio-femoral thrombosis



All patients with DVT have to be given oral anticoagulation for a minimum period of six months Coumarin derivative(warfarin).

IVC filters have limited indication in the treatment of DVT. Their main indication is in patients with ileofemoral thrombosis in whom heparin therapy is contraindicated and patients with pulmonary embolism with poor cardiorespiratory reserve who will not tolerate another bout of embolus.

DVT prophylaxis

DVT prophylaxis is mandatory in patients undergoing surgery. According to the level of risk, patients are categorized into low, medium, high and highest risks.

Early diagnosis and prompt treatment with prophylaxis whenever indicated can reduce the mortality (Pulmonary embolism) and long-term morbidity (Chronic venous insufficiency) remarkably.

Table No. 5 DVT Risk Level and prophylaxis

RISK LEVEL	DISCRIPTION	PROPHYLAXIS
Low	Minor surgery, no risk	No specific measures, early mobilization
Medium	Minor surgery with risks	Low density unfractionated heparin(LDUH) Low molecular weight heparin(LMWH) Elastic stockings (ES) Intermittent pneumatic compression (IPC)
High	Major surgery with risks	Low density unfractionated heparin(LDUH) Low molecular weight heparin(LMWH) Intermittent - pneumatic compression (IPC)
Highest	Major surgery, prior VTE, molecular hypercoagulable state, Cancer, hip or knee surgery, major trauma, spinal cord injury	LMWH, IPC/ES + LDUH/LMWH, oral Anti-coagulation