

Deep vein thrombosis

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Deep vein thrombosis (DVT) is a well-known and, when complicated by pulmonary embolus, potentially fatal complication of surgery (Table 24.6). All hospitals must have a process for screening all surgical patients to identify those at risk and for implementing prophylactic measures to avoid this dreaded complication. Risk assessment should occur within 24 hours of admission. Risk should be reviewed if the clinical situation changes. Methods of prevention are guided by the risk score and include the use of compression stockings, calf pumps and pharmacological agents, such as low-molecular-weight heparin. Compression stockings are not offered to patients who have suspected or proven peripheral arterial disease or neuropathy . They are also avoided or used with caution in those with sensitive or broken skin and in those who are allergic to the material used, have severe leg oedema or have a leg deformity . The symptoms and signs of DVT include calf pain, swelling, warmth, redness and engorged veins. However, most will show no physical signs. On palpation the muscle may be tender and there may be a positive Homans' sign (calf pain on dorsiflexion of the foot), but this test is neither sensitive nor specific. Use the two-level DVT Wells score to assess the probability of DVT (Table 24.7).

TABLE 24.6 Stratification of surgical procedure and the associated risk of deep vein thrombosis.

Low	Maxillofacial surgery	Neurosurgery	Cardiothoracic surgery	Medium	Inguinal hernia repair
	Abdominal surgery	Gynaecological surgery	Urological surgery	High	Pelvic elective and trauma surgery
	Total knee and hip replacement				

If DVT is suspected, duplex Doppler ultrasound and venography can be used to assess flow and the presence of a thrombosis. If DVT is unlikely by Wells's score then d-dimer testing can be done. A negative d-dimer test makes DVT unlikely; however, patients should be told about the signs and symptoms of PE and how to seek medical help if necessary . If a significant DVT is found (one that extends above the knee), treatment with parenteral anticoagulation initially , followed by longer term warfarin or a new oral anticoagulant (refer to national guidance, e.g. National Institute for Health and Care Excellence [NICE]; see Further reading) is necessary . In some patients with a large DVT , a caval filter may be required to decrease the possibility of PE.

score. Clinical features Points Active cancer (treatment ongoing, within 6 months or palliative) Paralysis, paresis or recent plaster immobilisation of the lower extremities 1 Recently bedridden for 3 days or more, or major surgery within 12 weeks requiring general or regional anaesthesia Localised tenderness along the distribution of the deep venous system Entire leg swollen 1 Calf swelling at least 3 cm larger than asymptomatic side Pitting oedema confined to the symptomatic leg Collateral superficial veins (non-varicose) 1 Previously documented DVT 1 An alternative diagnosis is at least as likely as DVT Clinical probability simplified score Points DVT likely 2 points or more DVT unlikely 1 point or less

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