Treatment

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Deep vein thrombosis The management of DVT has in the past been focused upon reducing the risk of pulmonary embolus. Patients who are confirmed to have a DVT on duplex imaging should be rapidly anticoagulated with a ‘treatment dose’ of subcutaneous LMWH. Patients with significant renal impairment should be commenced on intravenous unfractionated heparin. Patients who have a sensitivity towards heparinoids, such as those with heparin-induced thrombocytopenia, should commence on another anticoagulant, such as fondaparinux (an indirect factor Xa inhibitor) or bivalirudin (a direct thrombin inhib itor). This will achieve rapid anticoagulation and reduce the risk of embolisation. Typically , patients will then commence on oral anticoagulation for at least 3 months (or longer depending upon the persistence of risk factors or in recurrent cases). Oral anticoagulation using new or ‘novel’ anticoagulants (NOACs), which directly inhibit either factor Xa (rivaroxaban and apixaban) or thrombin (dabigatran), is recommended as they are equally e ff ective as vitamin K antagonists (warfarin) in preventing recurrent symptomatic VTE but are associated with less major bleeding complications. Patients who cannot be safely anticoagulated (usually because of bleeding risks) should be considered for a tempo rary inferior vena cava filter, until either they are safe to be Leo Buerger , 1879–1943, Professor of Urologic Surgery , The New Y ork Polyclinic Medical School, New Y ork, NY , USA, described thromboangiitis obliterans in 1908. the filter may be retrie ved. Endovascular surgery aiming to restore patency , including thrombus removal, lysis and stenting tec hniques, are increasingly /uni00A0 used in patients with acute DVT aiming to reduce the risk of chronic post-thr ombotic syndrome. Research suggests this may be beneficial in selected patients, for example those with iliofemoral thrombosis. Pulmonary embolus Most pulmonary emboli can be treated by anticoagulation and observation, but severe right heart strain and shortness of breath indicate the need for thrombolysis or radiologically guided catheter embolectomy . Superficial vein thrombosis This condition was previously known as thrombophlebitis. An abnormal endothelium is a much more common precip - itating factor than in most DVTs. Common causes include external trauma (especially to varicose veins), venepunctures and infusions of hyperosmolar solutions and drugs. The presence of an intravenous cannula f or longer than 24–48 hours often leads to local thrombosis. Some systemic diseases such as thromboangiitis obliterans (Buerger’s disease) and malignancy , especially of the pancreas, can lead to a flitting thrombophlebitis (thrombophlebitis migrans), a ff ecting di ff er - ent veins at di ff erent times. Finally , coagulation disorders such as polycythaemia, thrombocytosis and sickle cell disease are often associated, as is a concomitant DVT . The surface vein feels solid and is tender on palpation. The overlying skin may be attached to the v ein and in the early stages may be erythematous before gradually turning brown. A linear segment of vein of variable length can be easily palpated once the inflammation has died down. A full blood count, coagulation screen and duplex scan of the deep veins should usually be obtained. Any sugges - tion of an associated malignancy should be investig ated using Summary box 62.3 Venous thromboembolism - /uni25CF /uni25CF /uni25CF /uni25CF /uni25CF /uni25CF -

May be unprovoked, in which case an association with an inherited thrombophilia should be considered Is much more commonly seen as a complication of illness or surgery Is associated with both quality-of-life impairment and a risk of mortality All healthcare professionals should actively assess the risk and consider preventative measures where this risk is increased Management should involve measures to reduce the risk of extension and/or embolisation, typically with systemic anticoagulation Early thrombus removal is increasingly being used aiming to prevent chronic post-thrombotic syndrome, and rarely for limb salvage

inal CT scan. Most patients are treated with NSAIDs and topical heparinoid preparations and the condition resolves spontaneously . Proximity to a deep venous junction or long a ff ected length are indications for short-term anticoagulation and interv al duplex assessment. Rarely , infected thrombi require incision or excision. Ligation to prevent propagation into the deep veins is almost never required. Associated DVT or thrombophilia is treated with anticoagulation.

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