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Short-communication

Management of Lower Limb Deep Venous Thrombosis in the Acute Take

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Short Communication

Patients presenting with lower limb swelling, pain, redness and warmth should be evaluated for deep venous thrombosis (DVT) [1].

A modified Wells score (Table 1), which is a combination of clinical findings and history should be applied, if DVT felt to be likely then USS doppler exam is the next step regardless of D-Dimer blood test, while if DVT is felt to be unlikely according to modified Wells score then D-Dimer can be applied, if positive then proceed with USS doppler exam [2]. Proximal DVT is a blood clot in the popliteal, femoral, or iliac veins, which has a high risk of embolization compared to a DVT in the calf veins [3].

Early treatment as soon as a proximal DVT is expected is advisable, the rate of recurrence or progression to a fatal DVT or pulmonary embolism (PE) is high in the first three months of the initial DVT [4].

Distal DVT (blood clot below knee) should be treated if there is a high risk of embolization, while distal DVT with low risk of embolization can be monitored with serial doppler ultrasound scans as resolution of the DVT is expected [5]. Symptomatic distal DVT is a high risk one and can potentially extend into the proximal veins in more than 30% of cases, this extension usually occurs within two weeks [6].

Treating symptomatic distal DVT is advisable as anticoagulation treatment can reduce the risk of recurrence as well as propagation to a proximal DVT or pulmonary embolism [7]. While asymptomatic distal DVT can be monitored by surveillance as mentioned above due to low risk

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of recurrence or extension, however, few asymptomatic distal DVTs can have a high risk for proximal extension. High risk factors for asymptomatic distal DVT are unprovoked DVT, extensive thrombosis including multiple veins, DVT within 2 cm of the popliteal vein, provoked DVT with persistent risk factors like cancer or immobility long term, and recurrent DVT or PE. Extension commonly occurs within two weeks and beyond this period it is unlikely to occur [8].

Clinical Feature	Points
Active Cancer (treatment ongoing, within 6 months, or palliative)	1
Paralysis, paresis or recent plaster immobilization of the lower limb	1
Recently bedridden for 3 days or more or major surgery within system	1
Entire leg swollen	1
Calf swelling at least 3 cm larger than asymptomatic side	1
Pitting oedema confined to the symptomatic leg	1
Collateral superficial veins(non-varicose)	1
Previously documented DVT	1
An alternative diagnosis is at least as likely as DVT	-2
Clinical probability simplified score	
DVT likely	2 points or more
DVT unlikely	1 point or less

Table 1: Two-levels DVT wells score.

Therefore, the ideal surveillance is to perform USS doppler on popliteal and femoral veins once weekly for two weeks. Clot at or within 2 cm of the popliteal veins should be treated as DVT [9].

Treatment of proximal DVT or symptomatic or high risk asymptomatic distal DVT is indicated in patients with low risk of bleeding to reduce recurrence, propagation, embolization, and post phlebitis syndrome [10].

Treatment of DVT should be for three months at least, the rationale as mentioned before is the high risk of recurrence and embolization during this period, treatment can be extended to six months or even lifelong depending on risk benefit ratio and presence of risk factors or recurrence of venous thromboembolism (VTE).

Outpatient treatment of DVT can be initiated in ambulatory clinics if the patient is haemodynamically stable with normal renal function and low risk of bleeding. While inpatient initiation of anticoagulation is advisable if both PE as well as DVT present simultaneously, high risk of bleeding, multiple comorbidities, and massive iliofemoral clot burden or DVT causing phlegmasia cerulea dolens [11].

Treatment options for DVT or high-risk distal blood clot includes, factor Xa inhibitors (Apixaban, Rivaroxaban) which are both safe and effective as monotherapy for acute DVT in outpatient setting, their advantage over Edoxaban and warfarin is the lack of necessity to initiate heparin and no monitoring required as we do with warfarin [12].

Enoxaparin is a low molecular weight heparin (LMWH) and a dose of 1 mg/Kg twice daily has been better validated than the 1.5 mg/kg dose, LMWH has shown to be more efficient in reducing the rate of VTE recurrence, major bleeding, and mortality when compared to unfractionated heparin [13].

Dabigatran is a direct thrombin inhibitor and edoxaban is factor Xa inhibitor, both agents

require LMWH for 5 days at least during initiation of treatment [14].

Patients with acute DVT and absolute contraindication to anticoagulation should be referred for Inferior vena cava (IVC) filter placement to reduce DVT embolization, and when and if anticoagulation is initiated, IVC filter can be removed [15].

Although IVC filter can reduce the risk of PE on the short term but the risk of DVT, post-thrombotic syndrome and thrombosis at insertion site is present in the absence of anticoagulation [16].

Catheter directed thrombolysis or thrombectomy are indicated for massive iliofemoral clot burden and/or phlegmasia cerulea dolens.

Monitoring patients post DVT is a good practice, looking for signs of bleeding or symptoms of progression of DVT with possible embolization, most patient after acute DVT are advised for early ambulation but elastic graduated compression stockings are not indicated anymore for the prevention of post-thrombotic syndrome, however, may help with symptom control or established post-thrombotic syndrome [17].

Assessment and management of DVT in pregnancy has a slightly different approach, while a low clinical probability and negative D-Dimer can rule out DVT, a positive D-Dimer has no role in pregnancy as it can increase in second and third trimesters [18].

If clinical probability is high a compression USS is indicated, if negative a repeat scan on day 3 and day 7 is advisable, alternative imaging like USS doppler of iliac veins or magnetic resonance imaging (MRI) is indicated in high clinical probability [19].

Low molecular weight heparin (LMWH) 1 mg/Kg BD is the first line treatment of DVT in pregnancy [20].

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