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SUPERFICIAL THROMBOPHLEBITIS

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INTRODUCTION

Superficial thrombophlebitis is an inflammatory reaction with thrombus. It usually is a benign, self-limiting disease, but can be recurrent and persistent. When affecting the greater saphenous vein, thrombophlebitis can progress into the deep venous system, leading to pulmonary embolism. Although superficial thrombophlebitis generally occurs in the lower extremities, it can happen anywhere a medical intervention takes place, such as in the arm or neck (eg. external jugular vein) from intravenous catheters.

RISK FACTORS

Risk factors for developing superficial thrombophlebitis are similar to those of DVT. The most common one tends to be varicose veins in the lower extremity; others include advancing age (≥60 years), female gender, obesity, pregnancy, recent surgery or immobilization, hormonal influences, smoking, IV lines and drugs, history of prior venous thromboembolism (VTE), and hypercoagulable states, including malignancy.

Types of superficial venous thrombosis:

TRAUMATIC THROMBOPHLEBITIS

➢Superficial venous thrombosis following an injury usually occurs in an extremity.

➢Thrombophlebitis frequently occurs at the site of an intravenous infusion and is the result of irritating drugs, or the intraluminal catheter. This is the most common type of thrombophlebitis. It may take months to completely resolve.

➢Iatrogenic (chemical) phlebitis may be deliberately produced by sclerotherapy for varicose veins.

THROMBOPHLEBITIS IN A VARICOSE VEIN

➢Superficial thrombophlebitis frequently occurs in varicose veins. Superficial thrombophlebitis along the course of the greater saphenous vein is more often progresses to the deep system.

THROMBOPHLEBITIS AS THE RESULT OF AN INFECTION

➢Septic phlebitis usually occurs in association with the long-term use of an intravenous cannula inserted for the administration of fluid or medications.

➢Aerobic and anaerobic as well as mixed infections have been related to superficial venous thrombosis.

MIGRATORY THROMBOPHLEBITIS

➢ Migratory thrombophlebitis is characterized by recurrent episodes of thrombosis developing in superficial veins at varying sites in the limbs and trunk, but most commonly in the lower extremity.

➢The association of carcinoma was first reported by Trousseau in 1856. Migratory thrombophlebitis especially prevalent with carcinoma of the pancreas.

➢Phlebitis occurs in diseases associated with vasculitis, such as polyarteritis nodosa and Buerger disease.

In each type of superficial thrombophlebitis, the condition presents as redness and tenderness along the course of the vein, usually accompanied by swelling. Bleeding also can occur at the site of a varicose vein. Superficial thrombophlebitis of the upper extremities usually occurs at infusion sites or sites of trauma. Superficial thrombophlebitis can occur in the external jugular vein if it has been used for an infusion site. Superficial thrombophlebitis may take months to completely resolve.

LABORATORY STUDIES

Patients who present with spontaneous thrombophlebitis without a previous indwelling intravenous catheter or other precipitating cause should be considered for evaluation for a hypercoagulable state.

➢Patients with a past history of another thromboembolic event should undergo a workup. Evaluation should include tests for factor V Leiden and prothrombin gene mutations, protein C, protein S and antithrombin III

deficiencies, lupus anticoagulant with anticardiolipin and beta 2 glycoprotein I antibodies. High factor VIII concentration has also been reported to be an independent risk factor for recurrent superficial thrombosis.

➢Migratory thrombophlebitis, especially without good cause, may be an indication for a more detailed evaluation including search for malignancy. This may include serum carcinoembryonic antigen (CEA), prostate-specific antigen (PSA), colonoscopy, CT scans, and mammography.

IMAGING STUDIES

➢Duplex ultrasound evaluation is the diagnostic study of choice to search for venous thrombosis. The most diagnostic finding is a lack of compressibility of the vein. A key question concerns the location and extent of superficial thrombosis, as well as the proximity to the deep venous system at the saphenofemoral or saphenopopliteal junction.
➢Venography is rarely required. It should be usually avoided because of the potential complications of intravenous contrast administration, which can itself lead to phlebitis.
➢After an initial diagnosis of superficial thrombophlebitis, a follow-up duplex ultrasound examination should be performed to look for progression of disease after treatment is initiated.

TREATMENT

Practice guidelines exist for patients with complications of VTE, but data is generally lacking for superficial thrombophlebitis of the lower extremity. The primary goal of management is to prevent thrombus extension and risk of VTE. All other therapy is directed at patient comfort. The treatment of superficial venous thrombosis depends on its etiology, extent, and symptoms. Duplex scanning gives evaluation of the extent of disease and thus allows determining more rational therapy.

➢For the superficial, localized, mildly tender area of thrombophlebitis that occurs in a varicose vein, treatment with mild analgesics, such as aspirin or NSAID, and the use of elastic support usually are sufficient. Patients are encouraged to continue their usual daily activities.
➢If extensive varicosities are present or if symptoms persist, phlebectomy of the involved segment may be indicated.
➢More severe thrombophlebitis should be treated by bed rest with elevation of the extremity and the application of hot, wet compresses. Elastic stockings or ACE bandages are indicated when the patient becomes ambulatory.
➢Patients who present with thrombosis of the saphenous veins should be considered for anticoagulation or ligation of the saphenous vein. A high incidence of progression to deep venous thrombosis has been reported.
➢If the thrombophlebitis is associated with a cannula or a catheter, the device should be removed.

The risk of complications with acute superficial thrombosis have led many investigators to favor systemic anticoagulation when the thrombus approximates the saphenous junctions and when more than 5 cm of the saphenous trunk is involved, as shown by duplex ultrasonography.

The 2012 American College of Chest Physicians guidelines recommend the use of a prophylactic dose of fondaparinux or LMWH for 45 days over no anticoagulation in patients with lower extremity superficial thrombosis of at least 5 cm in length.

Thrombosis isolated to superficial varicosities may be managed more conservatively by avoiding anticoagulation in favor of anti-inflammatory agents.

CONCLUSION

Superficial vein thrombosis is more than a benign disease process. If may result in pulmonary embolism or VTE complications. Diagnostic imaging is important in determining the best course of action, and referral to a vein specialist may be warranted. Ambulation, compression therapy, anticoagulant and anti-inflammatory agents make up the current standard of care, and choice depends on thrombus burden. Although large randomized trials are lacking, epidemiologic studies documenting the prevalence of DVT or pulmonary embolism in patients with superficial phlebitis may warrant more aggressive medical therapy.

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