

FROM THE FAMILY PRACTICE INQUIRIES NETWORK

What is the best therapy for superficial thrombophlebitis?

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■ EVIDENCE-BASED ANSWER

For proximal saphenous vein thrombosis, anticoagulation is more effective than venous ligation (with or without stripping) in preventing deep venous thrombosis (DVT) and pulmonary embolus (PE) (strength of recommendation [SOR]: **C**, qualitative systematic review of primarily case series).

For patients with superficial venous thrombophlebitis (SVTP) distal to the saphenous vein of the thigh, tenoxicam (a nonsteroidal anti-inflammatory agent [NSAID]) and low-molecular-weight heparin are similarly effective for reducing extension and subsequent DVT when administered along with compression therapy (SOR: **B**, 1 randomized controlled trial). Oral or topical NSAIDs, topical heparin, and topical nitroglycerin all alleviate symptoms and speed resolution of SVTP caused by infusion catheters (SOR: **B**, smaller, occasionally conflicting randomized trials).

■ EVIDENCE SUMMARY

Superficial thrombophlebitis refers to erythema, pain, induration, and other findings of inflammation in superficial veins, usually due to infection or thrombosis. Typically, SVTP is localized problem, but some lower-extremity SVTP is associated with increased risk of DVT and PE, particularly the long saphenous vein. This review will not address thrombosis in the superficial femoral vein, a portion of the deep venous system, which requires full DVT therapy.¹

Since saphenous vein thrombosis above the knee is associated with DVT and PE, 1 systematic review looked at papers comparing anticoagulation (IV heparin followed by 6 weeks to 6 months of warfarin) with surgical ligation of the saphenous vein (either alone or combined with vein stripping or with vein stripping and perforator ligation).¹ The review included primarily case series with widely varying protocols. According to the authors, the data “suggests that medical management with anticoagulants is somewhat superior” to surgery for preventing DVT and PE. However, the fewest extensions of SVTP occurred when vein ligation was combined with

stripping of the thrombosed vein and interruption of perforators.

In a more recent trial, patients randomized to subcutaneous heparin at 12,500 units twice daily for a week followed by 10,000 units twice daily had fewer vascular complications of proximal saphenous vein thrombosis than those receiving heparin at 5000 units twice daily (6/30 in the low-dose group and 1/30 in the high-dose group; $P<.05$; number needed to treat [NNT]=6).² There were no bleeding complications in either group.

One large double-blind randomized controlled trial compared tenoxicam (an NSAID available in Canada, similar to piroxicam), enoxaparin (Lovenox), and placebo for 8 to 12 days in 427 patients with SVTP of the leg measuring 5 cm or more.³ Patients were also treated with compression hose. Patients who required immediate anticoagulation or venous ligation were excluded. Within 3 months, 35% of patients taking placebo developed an extension or recurrence of their SVTP or a DVT, compared with 16% to 17% of treated patients (NNT=6). There was no significant difference in outcome between subcutaneous enoxaparin at fixed (40 mg/d) or adjusted doses (1.5 mg/kg), or 20 mg/d oral tenoxicam. In a small randomized trial (n=40), intramuscular defibrotide provided better symptom resolution than low-dose heparin for patients with uncomplicated SVTP of the leg.⁴

For infusion-related SVTP, a randomized controlled trial of 120 patients found both oral and topical diclofenac effective in reducing symptoms (NNT=3), although oral diclofenac had significantly more gastrointestinal side effects (number needed to harm=3 for dyspepsia).⁵ Two double-blind trials of topical heparin showed it to be superior to placebo in reducing symptoms and speeding healing.^{6,7}

In the larger study (n=126), 44% of patients treated with 1000 IU/g heparin gel 3 times a day were symptom-free at 1 week, compared with 26% on placebo (NNT=6).⁷ A randomized trial of infusion-related SVTP (n=100) found that 2% nitroglycerin gel eliminated pain in 50 hours vs 72 hours with topical heparin ($P<.05$).⁸ A smaller, underpowered double-blind trial of topical heparin, piroxicam gel, and placebo (22 to 24 patients in each treatment arm) failed to find efficacy with either therapy.⁹

■ RECOMMENDATION FROM OTHERS

For SVTP of the leg that does not include the proximal saphenous vein, *Up To Date* recommends compression and oral NSAIDs, noting that NSAIDs are inexpensive, help with symptom control, and appear comparable to low-molecular-weight heparin in limiting complications.¹⁰

CLINICAL COMMENTARY:

Those with symptoms in the thigh need closer follow-up, more aggressive therapy

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Patients with a red, swollen, painful extremity are commonly encountered in my practice. I see this

among patients with venous stasis due to obesity, aging, and varicosities. I find ready access to a D-dimer blood test and a venous Doppler can help me rule out DVT. I end up treating many of these patients with both an NSAID and an antistaphylococcal antibiotic, because of the lack of certainty in differentiating superficial phlebitis from cellulitis.

Upper extremity phlebitis is less common. It can occur in a delayed fashion several days after a patient has received intravenous therapy. The characteristic on exam is a knotty, red, ropey painful structure correlating to the course of the basilic or cephalic vein.

This review is helpful to me; it reinforces that the patients I see with symptoms in the thigh need closer follow-up and more aggressive therapy with anticoagulation, no matter what the Doppler shows. I usually hold off on anticoagulating other patients until they show no improvement with a trial of the NSAIDs and compression. Topical heparin and nitroglycerin gel are therapies new to me and appear worth looking into for the patient who is not improving. In a quick search for topical heparin, I could not find a US source, and it is not used locally.

REFERENCES

1. Sullivan V, Denk PM, Sonnad SS, Eagleton MJ, Wakefield TW. Ligation versus anticoagulation: treatment of aboveknee superficial thrombophlebitis not involving the deep venous system. *J Am Coll Surg* 2001;193:556–562.
2. Marchiori A, Verlato F, Sabbion P, et al. High versus low doses of unfractionated heparin for the treatment of superficial thrombophlebitis of the leg. A prospective, controlled, randomized study. *Haematologica* 2002;87:523–527.
3. Superficial Thrombophlebitis Treated by Enoxaparin Study Group. A pilot randomized double-blind comparison of a low-molecular-weight heparin, a nonsteroidal anti-inflammatory agent, and placebo in the treatment of superficial vein thrombosis. *Arch Intern Med* 2003;163:1657–1663.
4. Belcaro G. Evolution of superficial vein thrombosis treated with defibrotide: comparison with low dose subcutaneous heparin. *Int J Tissue React* 1990;12:319–324.
5. Becherucci A, Bagilet D, Marenghini J, Diab M, Biancardi H. [Effect of topical and oral diclofenac on superficial thrombophlebitis caused by intravenous infusion]. *Med Clin (Barc)* 2000;114:371–373.
6. Mehta PP, Sagar S, Kakkar VV. Treatment of superficial thrombophlebitis: a randomized, double-blind trial of heparinoid cream. *Br Med J* 1975;3:614–616.
7. Vilardell M, Sabat D, Arnaiz JA, et al. Topical heparin for the treatment of acute superficial phlebitis secondary to indwelling intravenous catheter. A double-blind, randomized, placebo-controlled trial. *Eur J Clin Pharmacol* 1999;54:917–921.
8. Almenar L, Hernandez M, Gimeno JV, Palencia M, Algarra F. [Heparinoids versus nitroglycerin in the treatment of superficial phlebitis]. *Rev Clin Esp* 1993;193:229–231.

9. Bergqvist D, Brunkwall J, Jensen N, Persson NH. Treatment of superficial thrombophlebitis. A comparative trial between placebo, Hirudoid cream, and piroxicam gel. *Ann Chir Gynaecol* 1990;79:92–96.
10. Fernandez L. Superficial phlebitis. UpToDate [online database]. Last updated September 2, 2003. Available at: www.uptodateonline.com.