Keeping Up with the Changes

If in doubt, create a clinical question using the PICO method.

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One of the very important skills many of us are taught in school and residency is how to find the answers to clinical questions. At Western University, we teach our students to use search engines such as Pub Med to find the answers to clinical questions they create as a result of patient care encounters. As a medical provider, one must also try to stay as current as possible: reading various journal articles and attending workshops and conferences to gain new perspectives.

This is one of the wonderful things about being a teacher of both students and residents. It’s also beneficial being part of a teaching hospital. Living in a bubble of trainees questioning the status quo at so many different levels, from basic questions like how a test works to more advanced issues such as the post-test probability of diagnosis with a certain laboratory test. Constant re-evaluation is needed in order to stay in the know and find the best answers. Sometimes, though, you get caught by surprise, and your interactions with the medical community force you to realize the limits of your knowledge (and the fact that no one can know everything about everything).

Recently, while rounding at the hospital, we saw a patient who was admitted for acute lower extremity edema and inguinal pain, which on ultrasound was diagnosed as a saphenous vein thrombosis. This situation was similar to another case of a patient who had been diagnosed with a venous thrombosis in the arm. The medicine service was very worried at the time, but when the vascular surgeon saw the patient, he took maybe 60 seconds to tell everyone to calm down. This was a superficial thrombophlebitis (SVT) that did not require anticoagulation, but rather moist warm heat and anti-inflammatories. Having forgotten their anatomy, the medicine service was slightly embarrassed.

Recalling the anatomy of the patient, the great saphenous vein was superficial. The patient was on a Heparin drip, so the recommendation was made to the medicine team that anticoagulation was unnecessary. The medicine staff, though, kept him on Heparin, arguing that the thrombus was too close to the saphenous vein junction with the femoral vein to be safe, and they would treat the patient as if he had a deep venous thrombosis.

It’s often best not to believe anything at face value anyway. It’s better to be sure the medicine team was correct. So, it was time to create a clinical question using the PICO method (Patient Intervention Comparison Outcome). Here’s a version of the question:

Question: In a patient with thrombosis of the saphenous vein near the saphenofemoral junction (Patient) does Heparin (Intervention) compared with no treatment (Comparison) reduce the risk of deep venous thrombosis and/or pulmonary embolism (Outcome)?

Using this question as a guide, a Pub Med search found two articles offering a quick read for evaluation. One was a retrospective study looking at 2646 lower extremity ve-
nous ultrasounds performed in a level one-trauma hospital during a one-year period. Of the total group 388 (14.5%) were positive for a DVT. Of these, there were 30 patients (1.1%) with a thrombus of the greater saphenous vein. In these, 22 (73%) showed an extension of the thrombus into the common femoral vein or shortness of breath. The authors recommended that thromboses of the greater saphenous vein close to the saphenofemoral junction be treated like a DVT.1

Part of the evidence-based practice system is to evaluate the journal articles we read for validity. In light of that standard, note that the study by Hill and associates does have methodological weaknesses such as the retrospective nature of the study, the level one trauma hospital location (causing a bias toward potentially worse situations like polytrauma patients and hence decreased generalizability), and a weak statistical analysis. Something as basic as a relative risk analysis would have been an improvement over the simple descriptive statistics.

So, not completely trusting the results of this study, it was time to reference a second article, which was a review.2 Now, a review is a low level of medical evidence (lower than the clinical study). However, it was a way to find what the general consensus was, if any, in the medical community; and to see if other studies existed that might be future references if necessary. After looking at the known literature, the review stated the following recommendations:

• SVT of the greater saphenous vein has generally been considered equivalent to a DVT regarding its risk of progression.
• A distance of less than 3 cm from the saphenofemoral junction (and possibly the saphenopopliteal junction) is an indication for aggressive treatment (anticoagulation, anti-inflammatories, and sometimes surgery).
• In these cases, anticoagulation should be considered for at least three months (optimal duration unknown).
• Repeat ultrasound should be performed at 48-72 hours after start of treatment to determine if propagation, resolution, or stabilization have occurred.1
• Surgical thrombectomy should be considered in cases of progression of the clot despite antithrombotic therapy.

The medical team had been right after all. They were treating the patient correctly. Over the past 10 years, much work has been done to demonstrate the increased risk of deep venous extension in SVT close to the saphenofemoral junction. The time we spend in residency makes us sharp and knowledgeable, and it is easy for us to become less up-to-date the further we are from training. Continuing to remain interested and engaged, while taking the time to read about new changes in medicine, will help each of us stay as on top of the current knowledge as we were as residents.

References