Transitioning From Aspiration to the Pounce™ Thrombectomy System for ALI

A conversation with Dr. Vince Weaver.

Vascular surgeon Dr. Vince Weaver and his partners at the Vascular Specialty Center in Baton Rouge, Louisiana, collaborate with two tertiary hospitals and a community hospital to receive patients from throughout the state and parts of southern Mississippi. In addition to treating a large volume of patients with peripheral artery disease and acute limb ischemia (ALI), Dr. Weaver does a substantial amount of carotid, advanced aortic, endovascular aortic aneurysm, and venous work—as he says, "a little bit of everything." We spoke with Dr. Weaver about his approach to treating ALI and his use of the Pounce™ Thrombectomy System (Surmodics, Inc.) for rapid removal of acute and organized clots.

"These days, it's very rare for me to use anything else besides the Pounce™ Thrombectomy System for mechanical thrombectomy."

What is your general approach to treating ALI? Has it changed over time?

Yes, it definitely has changed. Years ago, when somebody came in with a cold leg, it may have seemed a little faster to bring the patient into the operating room and perform an open embolectomy or a bypass, depending on the severity of the ischemia or if the limb was truly threatened. Now, we've seen a change from open surgical revascularization to an endovascular-first approach.

Initially, the endo-first approach involved thrombolytics—you'd drop in an Ekos™ ultrasound-assisted thrombolytic catheter (Boston Scientific Corporation) or just a lytic catheter, drip them overnight with tPA (tissue plasminogen activator), bring them back the next day, and deal with what you had. Now, we're increasingly moving away from lytics and intensive care unit (ICU) stays and moving to mechanical devices.

Why did you transition from a lytic-first approach?

Even before the COVID pandemic, I saw advantages for mechanical thrombectomy in terms of ease of use and other benefits. But then COVID hit, and we saw an exponential rise in both arterial and venous clotting. Every day, someone was coming in with a massive DVT (deep vein thrombosis) or pulmonary embolism, and the number of ischemic limbs we treated went up tremendously. We just didn't have ICU or hospital beds, so we had to find a way to get patients revascularized without a hospital stay. In our practice, the volume of clotting cases still remains much higher than before the pandemic.

In addition, the morphology of clots became more challenging with COVID. We tended to see a much more organized type of clot compared with before. The patient presentation would be acute, but it would almost seem as though the clot had been there for weeks. We continue to see very acute, fresh clot, but when we do these thrombectomies, we're encountering a lot of organized clots very early in the presentation.

The COVID pandemic had a severe impact on health care staffing nationwide. Did you witness that in your area?

Absolutely. You can't go to a hospital, surgery center, or even a doctor's office that hasn't been impacted by staffing availability. It's rampant. I'm on a lot of administrative boards in hospitals, and at every meeting we hear of nursing shortages and tech shortages. The question is, how do we get these

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employees and nurses back into the system? Getting patients in and out without hospital stays has been key to keeping the whole system going.

Can you summarize your ALI case mix today and how you select patients for various treatments?

These days, we use mechanical thrombectomy as our primary approach for well over half of our ALI cases, with primary lytics in about one-third of cases. We continue to use open surgical for a small subset of highly calcified cases, where I know that we're not going to be able to pass baskets and I don't think an Ekos™ catheter is going to do any good.

If ultrasound and CTA imaging indicate a significant amount of atherosclerotic disease—more of an acute-on-chronic situation—I may lean toward lytic therapy. In these cases, you may have a total thrombus occlusion within an atherosclerotic lesion. I will use lytics to recannulate the lesion. Then we may have to go back the next day and perform atherectomy, stent it, or do whatever it takes to keep it open and avoid bypass.

If I get in there and it all looks like soft thrombus, acute clot, then that's an easy mechanical thrombectomy. If we get into the angiogram and we're on the fence on which way we're going to go, I'll see how easily my wire can pass through the lesion. If the wire passes through easily, I'll definitely lean toward a mechanical approach. We have a very high success rate in these types of cases. If I have to really knuckle a wire and use support catheters to get through, I may just use lysis for those patients.

For mechanical thrombectomy, you've increasingly used the Pounce™ Thrombectomy System as your primary device. Can you explain how your use of mechanical thrombectomy has changed?

I've had access to just about all the arterial thrombectomy devices and have whittled them down. Our practice still has the AngioJet™ pharmacomechanical system (Boston Scientific Corporation), but I really don't use it anymore due to the use of tPA and the device's systemic effects (eg, renal impairment).[1] I used suction thrombectomy, the Indigo® aspiration system (Penumbra, Inc.) and QuickClear thrombectomy system (Philips), as my go-to devices up until about a year ago, when I started using the Pounce™ System.

Why did you make the switch?

The limitation I found with suction thrombectomy is that you could go in and take out a lot of fresh acute clot, but when you take your post-thrombectomy angiograms, you see that there's a lot of residual thrombus and organized stuff remaining. With the Pounce™ System, after one, maybe two passes, I've been able to remove, if not all, at least a significant amount of that more organized thrombus. I'm getting much more robust thrombectomy with the device, and my success rate has been much higher for the right patient. Beyond that, blood loss has been far lower for the Pounce™ System versus suction thrombectomy devices. These days, it's very rare for me to use anything else besides the Pounce™ Thrombectomy System for mechanical thrombectomy. ■

1. Acosta S, Karonen E, Eek F, Butt T. Short-term complications and outcomes in pharmaco-mechanical thrombolysis first and catheter-directed thrombolysis first in patients with acute lower limb ischemia. *Ann Vasc Surg*. 2023;94:253-262. doi: 10.1016/j.avsg.2023.02.018

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