PANEL DISCUSSION

Venous Reflux Treatment Decisions

A discussion on selecting optimal therapies, ensuring long-term outcomes and comfort, and complication avoidance.

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Dr. Kolluri: What are some keys to achieving optimal outcomes and lower complications when using foam sclerotherapy in more severe disease settings? To begin, Dr. Elias, how should we time or stage our course?

Dr. Elias: In more advanced disease states (C4 and above, patients who have superficial axial reflux), I tend to treat the branch varicosities at the same time in hopes of preventing further progression or improving ulcer healing. However, in less severe disease (eg, C2), I usually do not treat the varicosities with foam or anything else at the same time. Essentially, the more advanced the disease, the more you should do.

Dr. Kolluri: Excellent. What is your advice on how best to prevent foam-induced thrombosis?

Dr. Fukaya: I think it is a common concern among those new to using foam. If I'm particularly concerned, I use ultrasound to identify calf perforators, and I mark the leg thoroughly so I know where they are connecting. As I inject, I scan in real time to see where the foam is spreading, and if it is close to the perforator, I'll apply pressure at the perforator to prevent flow into the deep system. Because that perforator may be refluxing, even if some foam were to go in, it could be argued that the foam will dilute by the time it gets into the deep vein. There are times when we see a little thrombus when they come back a week or so later, but I have never had the thrombus persist. Again, this step may not be necessary, but it gives me assurance when I'm concerned about preventing foam going into the deep system.

Dr. Elias: Foam is inactivated fairly quickly by the time it gets into the system, and there's a significant amount

of flow in the deeper system compared to the varicosities, so if I'm doing an ablation plus foaming, I will ablate, then foam, and then have the patients move and basically wash it out of the system. Like Dr. Fukaya said, if there are a few small areas, I'm not too concerned, and I don't perform ultrasound routinely when we first see them again unless they have significant complaints. I think it is a mostly theoretical concern, and if you move patients right after you inject, the risk is relatively low.

Dr. Kolluri: The most common question I get from my fellows-in-training is when do you use sotradecol and when do you use polidocanol?

Dr. Elias: In general for varicosities, I use sotradecol. I don't think there is necessarily much difference, but it's perhaps a bit stronger, so to speak. I tend to use polidocanol foam for smaller varicosities, or I'll use it as a liquid for spider veins or reticular veins. In general, if I'm making my own foam for advanced venous disease patients, I use sotradecol.

Dr. Fukaya: Especially with advanced disease, even if patients don't have ulcers, they may have thin-walled varices that can be prone to ulcerating, so I tend to use polidocanol in veins that are more superficial, with the thinking that it's less irritating.

Dr. Kolluri: What is your practice with regard to trapped coagulum? Do you bring these patients routinely or only when they are symptomatic?

Dr. Fukaya: Due to the nature of how sclerosants work, many patients will have trapped blood, and some may experience pain. They will get better with time, but it does help if you have them come back in 2 weeks (when I like to see them postoperatively anyway) to assess for this. If they are having pain, I may remove the trapped blood within areas they complain are painful. If it is a larger area, giving a bit of lidocaine helps. I also recommend use of nonsteroidals after the procedure.

Dr. Kolluri: Dr. Elias, when do you give nonsteroidals or cold or warm compresses versus puncturing or lancing the area?

Dr. Elias: It depends on how the patient is feeling in terms of pain and also what the overlying skin looks like. If there's a significant inflammatory reaction 2 to 3 weeks after the initial treatment, even without pain, I may evacuate the coagulum. I tend not to use an 11 blade,

instead preferring to try a 21-gauge needle first. The needle is pretty sharp, and I'm still amazed how much coagulum you can get out with just a 21-gauge needle stick, so that's my go-to. Then, yes, I use nonsteroidal anti-inflammatory medication if there is any erythema or pain. I don't use warm compresses on an inflamed area. I suggest icing it, which makes more sense to me if it's painful, but there is not much data on which to recommend cold versus hot.

Dr. Kolluri: What about concentration strength? What do you use and when?

Dr. Fukaya: If the veins are very superficial and thin-walled, I use 0.5% polidocanol for the reasons I mentioned earlier. If they are deeper, I want to make sure the veins close, so I'm less concerned with using something stronger.

Dr. Elias: I think size is one determinant, as well as where it is located with regard to the skin level. In general, for advanced disease with skin changes or even an advanced ulcer, we're clearly not going to do a phlebectomy, so I would tend to foam the varicosities in that area. If there are others higher up, such as in the mid-calf region, and they are large, I remove the larger ones in the areas of good skin and foam those in the areas of bad skin that may be 4 to 5 mm. In terms of concentration, I use 1.5% sotradecol in these varicosities, and I'll only go lower if there are areas much closer to the skin, where I'll use 1%. I stick to the rules in terms of volume, 10 mL per session; it's important to that keep in mind, as well as that you can always bring patients back and treat more if necessary.

Dr. Kolluri: Moving on to perforators, why do you feel the results we see here are not as good as with axial disease, regardless of modality?

Dr. Fukaya: I think it is a combination of the technical difficulty related to anatomic variance—the tortuosity and length of the perforator—and also the pressures coming from the deep system.

Dr. Elias: I believe it's mostly technical in the beginning, and I agree with Dr. Fukaya that with the perforators being very close to the deep system, the level of reflux and hypertension is different than a superficial axial vein running parallel to the system. I'm not sure we'll ever get to 90% technical success, unless the glue trials show us we can do better than we have so far. In terms of preferred modalities, foam is not the best option for perforator veins, with my preference being thermal or off-label use of glue.

Dr. Kolluri: Assuming you've algorithmically decided the perforator needs to be treated, and it is timed properly with respect to any other treatment that might be necessary, do you administer adjunctive foam in cases involving perforators? If so, is your postprocedural compression any different with and without foam?

Dr. Elias: Most of the time, I'm ablating the perforator thermally and then using foam for the varicosities, so patients will be in compression anyway. In patients with advanced disease, I have them go back to utilizing the compression they previously had been, but if I've used foam, I keep them in continuous compression day and night, except for showering, for 3 to 5 days before returning to normal compression. I would also note that it can be dangerous to directly access the perforator if you're using foam because you might also access the accompanying artery. If you inject the accompanying artery, you'll get very significant skin necrosis in that area.

Dr. Fukaya: If there is a large reservoir of veins around the perforator that can build up pressure, you want to obliterate as much as you can with foam. You do not need to be worried about going into to the deep system if you have ablated the perforator. Compression is very important after this, and I will often apply a multilayer wrap or unna boot, especially if they have wounds.

Dr. Kolluri: Conducting clinical trials in patients with advanced disease is challenging, in large part due to the need to collect and assess long-term results, increased interest in patient-reported outcomes, and the difficulties inherent in accounting for the wide variety of factors when randomizing patients, which may require impossibly large numbers of patients to be enrolled. In looking at the big picture, what do we need to see next? What would be most beneficial to address or demonstrate in a trial?

Dr. Elias: I would like to see a trial further exploring the role of maintenance treatment once the initial ulcer or significant dermatitis episode is addressed—what happens if you treat the underlying venous pathology in an ongoing fashion, before the patient progresses to have another ulcer? Can we decrease the ulcer recurrence rate and demonstrate whether the benefits of treating venous disease in a prophylactic manner after the initial ulcer is healed? Many of us are doing this already, but it would be beneficial to show the overall health care cost savings to society and individuals. ■