ABOUT DR. KANTER

A native of Boston, Alan Kanter received his M.D. degree from the University of Vermont in 1975. After his residency at Memorial Hospital in Long Beach he practiced internal medicine in Torrance until 1990. At that time he decided to devote his full-time to the emerging specialty of phlebology (the field of venous disorders), and took a fellowship based on European techniques recognized worldwide consistent with the introduction of ultrasound-guided sclerotherapy. Since opening the Vein Center of Orange County, Dr. Kanter has been a frequent speaker at the American College of Phlebology in 2005, and full membership in the American Society for Phlebology (the field of venous disorders), and took a fellowship based on European techniques recognized worldwide consistent with the introduction of ultrasound-guided sclerotherapy. Since opening the Vein Center of Orange County, his expertise and clinical research have earned him several grants in collaboration with UCI, and a reputation as the local authority in the field of venous disorders. This issue introduces the vein center of Orange County.

ABOUT OUR OFFICE

The Vein Center of Orange County (VCOC) is conveniently located in Irvine between the 5 & 405 freeways. Dr. Kanter performs all consultations and treatments at VCOC including a duplex examination at the time of consultation when indicated. Included on the team is a highly seasoned vascular ultrasound technician who participated in the original FDA study leading to approval of endovenous thermal ablation. All referring physicians are sent timely consultation summaries and follow-up notes on their patients. Specializing primarily in the medical treatment of varicose and spider leg veins, advanced outpatient treatment for venous leg ulcers is also available. Treatment of cutaneous and solid-vein disease, chest, and hand veins is also offered. We are also the first facility in Orange County to acquire VeinGogh for radiofrequency ablation of vein disease. This in vivo proof-of-principle study was performed on normal volunteers and shows that the VeinGogh device provides an effective and safer alternative to the current standard of care. The VeinGogh technology is currently being evaluated in a randomized controlled trial of patients with varicose veins.

Welcome to the Spring 2012 issue of Veno-gram, an educational newsletter for the practicing physician which focuses on new applications of current research in venous disease. This issue reviews the findings of three pairs of papers: two which address the utility of a pre-treatment compression trial, two that explore the phenomenon of gas bubbles and their consequences after foam sclerotherapy injection. While more details of these studies appear on the following pages, capsule summaries appear below.

As you probably know all too well, many insurance companies require a pre-treatment trial of compression stockings for several months. Calcagni and Rossi followed patients instructed to undergo such a trial and found that only one of 63 patients decided to forego treatment in favor of wearing stockings after 103 days; all remaining patients proceeded with treatment. With such a low rate of intervention avoidance, the authors question the wisdom of this arbitrary mandate.

In another paper Dr. Shul and associates compared the Quality of Life (QoL) benefits of compression stockings vs. sclerotherapy for non-truncal venopathy. After 12 months patients who underwent sclerotherapy experienced superior relief from symptoms that exceeded the relief obtained from wearing stockings. Especially interesting was the fact that subsequent sclerotherapy of telangiectasia provided further relief beyond that received after sclerotherapy of only reticular veins.

These studies add to the growing list which contradict current insurance-think that only large caliber veins can cause symptoms and therefore qualify for reimbursement - a misconception many of us in the trenches of practicing phlebology suspect exists solely as an insurance company deflection tactic.

Mitch Goldman measured the time it took for Sotradecol (STS) foam to liquify half its volume both with and without glycerin, and found only a small difference: the glycerin/STS combination lasted 28 seconds longer than STS alone (117 seconds vs. 89 seconds). Master studied various potential factors which could affect STS foam stability and found that percent concentration and needle size had no effect, use of CO2 and lack of filtration caused slightly quicker degradation, and foam from all STS concentrations was stable for at least one minute.

Our most recent issue mentioned a hypothesis that endothelin released after foam sclerotherapy might be responsible for vasoconstrictor-induced ischemic symptoms. In this issue Alessandro Frullini from Italy describes a clinical study looking for ways to avoid gas embolism after foam sclerotherapy of the GSV. He found that while bubble emboli entered the right heart despite all technique modifications (filtration, CO2 use, leg elevation, immobilization), patients experienced no symptoms.

Here are two important future meetings for you to consider:

Alban Kantor, M.D., R.V.T., F.A.C.Ph.
Founder & Medical Director

INDEPTH

Founder’s Message
Insurance Company Mandates
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THE VALUE OF COMPRESSION HOISIERY

Are Mandatory Insurance Company Compression Trials Warranted?

For years many of us have struggled with the arbitrary pre-treatment compression hose trial required by some insurance companies. Patients finally summon the courage to do something about their painful varicosities only to discover a 3-month delay imposed by their carrier. If this delay impacts treatment decisions it would be worthwhile. Instead, we now have proof that it is without merit and serves only to postpone definitive treatment.

Sixty-three patients who were good candidates for GSV ablation and/or phlebectomy first wore compression stockings for 103 days. 1 At the end of the study only one patient elected to forego treatment and continue to wear stockings. All others elected to proceed with ablation.

Although the numbers clearly speak for themselves, the authors did an extensive literature search of bibliographies from insurance company bulletins and found no articles to support pre-treatment compression trials. Furthermore, a recent published independent literature review of the subject found only equivocal evidence for the benefit of compression hosiery for varicose veins.

The ACP Committee on Insurance Company Relations now has additional documentation to help eliminate this unnecessary pre-treatment exercise which dissuades patients from, and delays necessary vein treatment.

Does Treatment of Non-Truncal Veins Affect Leg Symptoms?

Coincidentally the lead author of the next study is the chairman of the above ACP committee. Dr Marlin Shul prospectively followed 58 patients who had initial Quality of Life (QoL) high dysfunctional scores. 2 All subjects had non-truncal reticular/telangiectasia as well as normal saphenous and deep venous systems, and were sequentially QoL re-tested after the following: a trial of compression hosiery, reticular vein treatment, subsequent telangiectasia treatment, and 12 months later.

It was found that both compression and sclerotherapy provided significant relief from symptoms and QoL improvement. Notably, sclerotherapy provided more relief than did compression. Perhaps the most interesting finding was that sclerotherapy for telangiectasia provided further benefit beyond reticular vein treatment.

Thus, while compression hose may provide temporary symptomatic relief from varicose and non-truncal veins, it is favored by very few patients, offers less durable relief, and has almost no effect on ultimate intervention. These studies refute the qualifications for reimbursement many insurance companies impose regarding vein caliber and compression trials. Unfortunately, the next step is even more Draconian and harder to argue: some employers are simply excluding all vein treatment from coverage thereby precluding any chance for reimbursement!


STS STABILITY

The Effect of Glycerin

To investigate the influence of glycerin on the stability of foam Dr Goldman measured the time it took for ½ the volume of foam to become liquid using the Tessari method and 0.5% Sotradecol (STS) without Glycerin, and with 0.1 ml or 0.2 ml 72% Glycerin. 3 The ½ volume time was 90 seconds for straight STS, 118 seconds for STS with 0.1 ml Glycerin, and 115 seconds for STS with 0.2 ml Glycerin.

Adding Glycerin thus extended ~25 seconds of stability to STS. This information may be interesting from an academic standpoint. However, from a practical standpoint, since the breakdown of foam to liquid is gradual and not subject to an arbitrary ½ time, it would be wise to reconstitute recently prepared unused foam within one minute after preparation before injection to be safe.

The Effects of Concentration, CO₂, Filtration, and Needle Size

Using the same Tessari method to make 1:4 sclerosant:gas ratios with 0.5%, 1.5%, and 3% STS, an Australian also measured the ½ time for foam to become liquid. 4 However, he did this for foam made with both room air and CO₂ as well as with and without a 5-micron filter, and different gauge needles (30G ½", 27G 1¼", 25 G 1½", 25G x1½", and a 20G cannula).

The ½ time for 3% foam was 153 seconds, for 1.5% foam 175 seconds, and for 0.5% foam 179 seconds. Use of a filter extended the ½ time to 126 to 174 seconds, while CO₂ use decreased the ½ time from 175 to 68 seconds. Different gauge needles had essentially no effect.

The authors concluded that varying STS concentrations and needle caliber had minimal effects on foam stability, filtration improved stability, and room air makes more stable foam than CO₂. Thus, the results from this study further support the reconstitution of unused foam if not injected within one minute of preparation, and provide useful information regarding foam stability.

MORE ABOUT GAS BUBBLES AND FOAM-INDUCED SYMPTOMS

Endothelin Levels May Induce Neurologic Symptoms

Alessandro Frullini measured endothelin 1 (ET-1) levels in rats after heoxystikerol injections and found that ET-1 levels changed significantly one minute after foam but not solution injections. 5 It was hypothesized that ET-1 acts as both a potent vasconstrictor and bronchoconstrictor, and may therefore be the cause for visual, cerebral, and pulmonary symptoms after foam injection.

Interventions Fail to Prevent Cardiac Bubble Migration

Finally, another prominent Australian phlebologist used various interventions in an attempt to decrease the transmission of gas bubbles in humans after foam injection. 6 A 2.5 ml volume of 3% STS/Tessari foam (room air) was injected 5-10 cm below the saphenofemoral or saphenopopliteal junction both with and without a 5-micron filter; and repeated separately with CO₂ foam, leg elevation, and post-treatment immobility – all methods thought to decrease gas bubble migration.

Dr Parsi found that concurrent echocardiogram demonstrated gas bubbles in the right heart usually within 15 seconds of injection and continued for fifty minutes despite all interventions. Rather than ET-1, Dr Parsi reminded us that bubbles themselves have been shown to induce vasospasm, and may therefore be responsible for migraine, neurologic/visual disturbance, and chest tightness/dyspnea.