

## IV. POST-THROMBOTIC DISEASE: DEEP AND SUPERFICIAL

### CASE OF SECONDARY DEEP VENOUS DISEASE-SOMETHING CAN ALWAYS BE DONE

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Compression therapy of deep venous insufficiency is associated with high recurrence.<sup>1</sup> In a carefully conducted study from Sweden, Nelzen, et al reported a 56% recurrence, the majority occurring in the first year. Apart from the high recurrence and primary non-healing (30%), noncompliance is a major factor in many compression regimens.<sup>2,3</sup> Noncompliance is associated with nearly 100% recurrence.<sup>2</sup> The reasons for noncompliance are many, including lack of self discipline, poor fit, a sensation of "binding" or "cutting off the circulation", cosmetic considerations, warm weather, high recurrent cost, and other more compelling reasons such as contact dermatitis, infirmity or arthritis that prevents the patient from applying the device without daily help. In addition to these drawbacks it is our impression that many patients under chronic compression regimens seldom get *complete* relief of symptoms particularly pain and swelling. A surgical approach provides a more definitive therapy with superior symptom relief. The majority of patients after successful valve repair discard their stockings,<sup>4</sup> and the remainder who continue to use them after surgery have a greater latitude and freedom in utilizing the device compared to patients on primary compression therapy. The surgical option should, therefore, be considered in patients in whom compression therapy had failed or cannot be applied.

Relatively minor improvement in hemodynamics can lead to remission with healing of stasis ulceration, even though substantial improvement in reflux parameters (see below re. obstruction) appears to be required for total relief of pain and swelling. This argues for an aggressive surgical approach in patients with secondary or post-thrombotic disease. This is the basis of the premise that a comprehensive correction of obstructive and refluxive pathologies as is practically feasible offers the best chance of symptom relief for the post-thrombotic patient. Hard data to support this philosophy is however not yet available and the approach is strictly empirical at the present time. However there have been technical advances in venous surgery, allowing a greater number of patients, many with pathologies previously considered inoperable to benefit from a surgical approach. Several different techniques<sup>5</sup> of valve repair are now available, allowing repair of even small caliber veins or multiple repairs if desired. There is little difference in the clinical result between the various techniques.

Similar ulcer healing is obtained as long as valve competency was restored irregardless of the individual technique used. Valve reconstruction techniques can now be applied to even post-thrombotic trabeculated veins<sup>6</sup> and axially transformed profunda femoris veins.<sup>7</sup> Cryovalves have become available for salvage cases. Secondary saphenous varicosities can be safely stripped<sup>8</sup> providing improve-

ment in the overall reflux without affecting outflow. The advent of endovenous stenting has provided a means of a simple percutaneous technique in nearly an outpatient setting to afford significant symptom relief in the large subset of patients with stenosis or obstruction of the iliac veins. Relief of pain and swelling with this simple procedure has been impressive.<sup>9</sup> Approximately 30% of ulcers appear to heal with the stenting procedure alone.

In the last five years, >85% operability was achieved in post-thrombotic patients, even though no preselection was made based on severity of venographic appearance, size, extent or duration of the ulcer, or presence of procoagulant abnormalities. Employing this aggressive approach, actuarial ulcer healing of >60% at 10 yrs was achieved even in those with severely mangled and trabeculated post-thrombotic veins.<sup>5</sup>

#### References

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### CASE OF SECONDARY DEEP VENOUS DISEASE – VALVE TRANSPLANTATION

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#### Introduction

It has been estimated that 2.7% of the U.S. population (~ 6 million people) have advanced chronic venous disease with approximately 800,000 new cases recognized per year.<sup>1,2</sup> These symptomatic patients often have deep venous disease (~ 70% isolated or 80-100% combined with superficial disease).<sup>2</sup> Approximately 85% are due to insufficiency and possibly 50% have an etiology classified as secondary (eg. post-phlebotic).<sup>3,4</sup> A rough estimation would suggest therefore, that of these six million patients about two million would have deep venous insufficiency due to a secondary cause and may require venous valve transplantation to free them from a life of disabling symptoms.

#### Indications/Preoperative Evaluation

Patient selection for venous valve transplantation is based upon symptoms, anatomy/physiology and the failure of other more conservative medical and surgical options designed to alleviate the patient's disability.

Patient symptoms coincide with a CEAP classification of 4 or higher.<sup>5</sup> The patients typically have severe lower extremity edema, lipodermatosclerosis and recurrent venous ulceration. Recurrent