**RUTHERFORD’S VASCULAR SURGERY AND ENDOVASCULAR**

**THERAPY, NINTH EDITION**

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SECTION 23, CHAPTER**154**

CHRONIC VENOUS DISORDERS

Varicose Veins: Surgical Treatment

MARK D. IAFRATI and THOMAS F. O’DONNELL Jr.

**Saphenous-Sparing Operations 2030**

*Conservatrice et Hémodynamique de l’Insuffisance*

*veineuse en Ambulatoire 2030*

***Conservatrice et Hémodynamique de l’Insuffisance***

***veineuse en Ambulatoire***

A detailed preoperative duplex ultrasound study determines where the reflux starts, the entry point, and where it reenters,with the goal of promoting normal superficial-to-deep flow through reentry perforating veins during muscular diastole.

Determination of the competence of the terminal and preterminal valves of the saphenous guides the decision of whether it should be ligated. The tributaries are assessed for competence (flow into saphenous) or incompetence (flow into tributaries and associated varicosities). Incompetent tributaries are ligated and the varicosities removed. Franchesci classified several types of dictate the required surgical steps: type I, with reentry by avenovenous shunt at the saphenous trunk; type II, with no reflux from the deep system but with reflux from the superficial venous network, not surrounded by the superficial fascia or through a communicating superficial vein; type III, with reentry on an extrasaphenous superficial perforator; and type IV, with reflux from the pelvic circulation. Carandina and associates52 compared CHIVA with standard high-ligation and stripping (HLS) in an RCT of 150 patients. Outcome measures at 10 years were as follows: recurrence of varicose veins (VVs) by objective clinical and duplex criteria; clinical outcome (Hobbs score), as judged by an independent observer; and patientreported subjective symptoms. Although there was no difference in the Hobbs score between the two groups, recurrence of VVs

at 10 years was lower in the CHIVA group (18%) than in the HLS group (35%) (*P* <.04).

The definitive large RCT on CHIVA conducted by Parés and colleagues53 compared CHIVA with two control groups:

HLS as marked clinically and HLS as marked by duplex. The primary outcome was recurrence of VVs as observed by independent physicians. In this RCT, “cure” of VVs was twice as frequent in the CHIVA group as in the two HLS groups, whereas the OR favoring the CHIVA group was 2.64 (95% CI, 1.76-3.97; *P* <.001) over the HLS clinical and 2.01 over the HLS duplex group. Several criticisms, however, have been leveled at the study: (1) the study had a high incidence of patients with mild disease, C2; (2) a significant number of patients underwent treatment for cosmetic purposes in the absence of symptoms; and (3) no patient-reported outcome measure was used—an important consideration in mild disease and particularly when cosmesis is the indication. Finally, in a small RCT, Zamboni and associates showed superiority of CHIVA over compression treatment in CEAP C6 patients.52 This RCT, however, had narrow inclusion/exclusion criteria, no postthrombotic limbs, and no deep venous reflux/obstruction. Time to ulcer healing was shortened, and the 38% recurrence rate in the compression group was reduced to 9% in the CHIVA group. **CHIVA has shown excellent results in lowering the recurrence of varicose veins; however, despite increasing facility with intraoperative DUS and minimally invasive techniques, this approach has not**

**found widespread adoption its pure form** (see Table 154.1,VVGL 10.5).

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