

THE ROLE OF OPERATIVE MANAGEMENT OF VARICOSE VEINS IN PATIENTS WITH LYMPHEDEMA AND/OR LIPPEDEMA OF THE LEGS

M. Földi, G. Idiazabal

The Földiclinic for Lymphology, Hinterzarten, Germany

ABSTRACT

The role of operative management of "symptomatic" varicose veins in patients with lower extremity lymphedema or lipedema is controversial. We reviewed the clinical outcome of 261 patients between 1989-1997 at the Földiclinic with lower extremity lymphedema (68 patients), lipo-lymphedema or lympho-lipedema (103 patients) or lipedema (90 patients) who had undergone operation for varicose veins. In each group, the results were dismal as leg swelling worsened or was unchanged in greater than 90% whereas symptoms such as heaviness, fatigue, cramps (termed varicogenic symptomatology) were improved in less than 10%. These findings support that operations for varicose veins in the legs of patients with lymphedema, lipedema, or combinations of these disorders should be undertaken only if there is an absolute indication present (ascending phlebitis and/or bleeding). Otherwise, complete decongestive physiotherapy is still the best treatment approach for these groups of patients.

Because 49% of women and 23% of men have primary varicose veins, it is not surprising that in some patients with lymphedema and/or lipedema (a syndrome of fat legs and orthostatic edema) one also finds varicose veins of the legs. Whether venous varices present in a lymphedematous leg

should or should not be treated by operation has been repeatedly examined. However, the issue concerning lipedema and varices has not until now been fully addressed.

In 1975, Brunner (1) called attention to the "lymphological responsibility" linked to vein operations performed even in patients with non-lymphedematous legs. He documented that in patients with lower extremity lymphedema after operation, 4.5% resulted from vein stripping and he advocated accordingly extreme caution in embarking on vein operations such as stripping and ligation in patients in whom varicose veins and lymphedema coexisted. He stressed that no therapeutic benefit is gained from vein strippings or the ligation of perforating varicose veins in those patients with "localized, hard, painless swellings of the dorsa of the feet without discoloration of the skin, which in some cases appear only in summer or after a long journey in a car, because these are signs of lymphedema and not of varicose veins." If, nevertheless, the surgeon opts to perform such varicose vein operations, (s)he should inform the patient of these possible sequelae and also take into consideration the close anatomical relationship of these vessels, namely, the prefascial lymphatics that accompany superficial veins as well as those afferent lymphatics at the greater saphenous oval fossa near the groin that form a narrow bundle (2). Van Bellen et al (3) showed by

conventional (oil contrast) lymphography that the Babcock operation (removal of varicose veins) (4) caused severe damage to the ventro-medial lymphatic bundle in the thigh. Bergan (5) has further described lymphoceles (i.e., injury to the lymph vessels) to occur in 2.1% of patients after varicose vein operations. Timi et al (6) have shown by lymphoscintigraphy that after varicose vein stripping, injury to lymphatics was visible in over 63% of patients. According to Oesch et al (7), owing to the functional reserve and the regenerative power of lymphatics normally, chronic lymphedema arising after varicose vein surgery was extremely rare but stressed, nonetheless, that if a latent lymphangiopathy exists, the operation may trigger intractable lymphedema. Moreover, if venous strippings are performed in a lymphedematous leg, lymphedema worsens. According to May (8), "operations on varicose veins in legs with chronic lymphedema may lead to an increase of the swelling; injuries to the lymph vessels cannot be completely avoided." He called attention to the fact that the ascendent type of lymphedema precox in young women may initially involve only the foot. As a result, such a patient who also has varicose veins misguidedly may believe that with removal of the varicosities the foot swelling will disappear. In Stage I of lymphedema, after sleeping overnight, the swelling typically disappears and the surgeon by examining the patient early in the morning is not likely to see it. By failing to establish the diagnosis of lymphedema, which was present in addition to the varicose veins, leg swelling may increase after the venous stripping. May (8) rarely performs venous strippings in patients with lymphedematous legs, but he informs the patient in writing that the operation may increase leg edema. He states that "if one operates very carefully, the increase of the swelling is by no means the rule" and "practically every edema which arises after varicose vein surgery is lymphedema caused by the lesion of the lymphatics."

Fischer and Früh (9) expressed a totally

contrary view advocating operative management of varicose veins in patients with lymphedematous legs. They analyzed the outcome of 39 such strippings. The operations were neither performed on account of swelling, nor on the generally accepted absolute indication of operative treatment of varicose veins, but on "varicogenic complaints" such as heaviness, fatigue, pains, cramps, and other "undefined" symptoms. After the operation, heaviness and fatigue improved in 74%, pains and cramps were better in 79%, and the undefined symptoms alleviated in 83%. In 3 patients, venous stripping caused new symptoms to appear, namely, sensations of heat in the sole of the foot and "scar-complaints." Moreover, lymphedema worsened in 7.4% and in 4 patients the legs which were originally free of cellulitis/erysipelas attacks, developed postoperatively with a total of 16 acute erysipelas episodes. These conflicting views have stimulated us to reexamine the question of how varicose vein surgery influences lymphedema. Because untreated lipedema over approximately 2 decades may slowly progress to lipo-lymphedema and lipedema may arise in lymphedematous legs (lympho-lipedema) we also considered the varicose vein issue in patients with lipedematous legs.

CLINICAL EXPERIENCE

We have retrospectively analyzed patients seen in our clinic between 1989 and 1997 with the following diagnoses: Group I) lymphedema with varicose veins (68 legs); Group II) combined lipo-lymphedema and lympho-lipedema with varicose veins (103 legs); Group III) lipedema with varicose veins (90 legs), who had not previously undergone operative management for the varicose veins. The operative procedures include ankle-to-groin saphenous vein stripping; segmental venous vein stripping; saphenous vein ligation and phlebectomy. 87% of the patients were females (median age: 51±27-76 years).

Patients were excluded if the varicose

vein surgery occurred before the manifestation of lymphedema or conditions such as congestive heart failure, fluid retention syndrome, hypoproteinemic edema, and chronic venous insufficiency coexisted. Because no limb volume measurements were performed before or after operation, we relied on the patient's judgment concerning whether after the operation the peripheral swelling and/or "varicogenic symptoms" improved, remained unchanged, or worsened.

RESULTS

Group I: Of the 68 lymphedematous legs, the swelling increased after operation in 70.6%, was unchanged in 27.9%, and improved in 1.5%. The "varicogenic symptoms" showed no improvement or became worse in 7.3%.

Group II: Of the 103 legs with lipo-lymphedema and lympho-lipedema, the swelling increased after operation in 75.7%, was unchanged in 19.4%, and improved in 4.9%. The "varicogenic symptoms" improved in 0.4% and worsened in 11.6%.

Group III: Of the 90 lipedematous legs, the swelling increased postoperatively in 58.2%, was unchanged in 31.9%, and improved in 9.9%. The "varicogenic symptoms" worsened in 16.6% and improved in 0.5%.

DISCUSSION

A general consensus exists concerning the absolute indications for the surgical treatment of varicose veins: ascending varicophlebitis and bleeding. It stands to reason that these absolute indications are valid also if they are present in a lymphedematous or lipedematous leg. The overwhelming majority of strippings, however, are only relatively indicated. According to the official guidelines of the German Society of Phlebology (10), "the operation is indicated, if one can expect an improvement of the complaints and of the complications." According to these guidelines, contraindications for stripping

operations are "severe general disease, the patient is bedridden, disturbances of hemostasis, occlusive arterial disease, lymphedema (strict indication considering pathophysiological criteria)." The document, however, does not define the term "strict indication."

According to Bergan (5), indications for surgery in patients with varicose veins are not only ascending thrombophlebitis and bleeding, but also general appearance, aching pain, leg heaviness, easy leg fatigue, and ankle hyperpigmentation. "Varicogenic complaints" are by no means specific to venous disease, however. "Heaviness" is mentioned in 54% of patients with lipedema and only in 31% with varicose veins (11). Heaviness, fatigue, cramps, and pain are often symptoms in orthopedic, neurologic, rheumatic, metabolic, and psychosomatic diseases. A physician cannot rightfully assure a patient that venous stripping will eliminate these non-specific complaints. According to Partsch (12), a "prophylactic indication" for varicose vein surgery is present if due to an eventual progression of the varices, one has to reckon with consequences for venous hemodynamics in deep veins. For Partsch, "functional indication" for surgery exists if there is a restriction of the function of the venous calf pump which can be ameliorated by digital compression of insufficient perforator veins of respective varicose segments of the saphenous vein. He also stresses, however, that "a considerable part of varices has to be classified not as a disease of medical importance but only as an alteration of veins. Consequently, one cannot only operate and sclerose varices, but in many cases downright ignore them!"

Based on the dismal outcome in our patients, we admonish that if varicose veins are present in legs in patients with lymphedema, lipo-lymphedema, lympho-lipedema or just lipedema, neither "varicogenic symptoms," nor a "functional indication" (12) justifies varicose vein surgery. If one treats lymphedema by complex decongestive physiotherapy

consisting of manual lymph drainage, compression, remedial exercises, and skin care, one almost assuredly will prevent deterioration of venous varicosity syndrome and eliminate the need for operation. It should be stressed, that even when peripheral lymphedema is accompanied by disturbances in saphenous venous outflow, complex decongestive physiotherapy is effective. The fact that varicose vein surgery performed for patients with lipedema is also harmful is not surprising. In lipedema, the prelymphatic channels and the initial lymphatics are abnormal (13) and the lymph collectors are tortuous and even cork-screwed suggesting that the initial formation of lymph and lymph absorption are hampered. Because the compliance of the skin is increased, the effectiveness of venous calf pump is impaired and a decreased veno-arteriolar reflux allows the volume of net ultrafiltrate produced per unit of time while walking to be elevated. These perturbations explain why during the second half of the day pitting edema often develops in patients with lipedema. These derangements and the lymphangiosclerotic process which arise with aging help to explain why untreated lipedema has the tendency to develop into lipo-lymphedema and why injury to lymphatics in the course of varicose vein operations has a deleterious effect.

According to Perrin and Nicolini (15), if lymph vascular insufficiency in a leg with accompanying venous varices is severe, lymphedema must be treated before stripping by elastic compression, manual lymph drainage, and intermittent compression. Apart from the fact that the recommended treatment of lymphedema is misguided because intermittent compression often promotes lymphedema of the genitalia (16) and elastic compression does not decongest, the authors do not define the term "severe."

Whereas the present study is retrospective and it would be more accurate to have performed a prospective study in which varicose veins in half the patients of homogeneous groups are randomized to treatment

by complex decongestive physiotherapy and the other half to surgery, both ethical considerations and the consistently poor results with surgery alone in these groups of patients preclude such a clinical trial.

SUMMARY

Lymphedema and lipedema worsen in the vast bulk of patients if varicose veins in these patients are treated by operation. Moreover, such operations are probably unnecessary because life-long compression treatment, an integral part of complex decongestive physiotherapy of lymphedema, is likely to minimize worsening of the varicose vein syndrome.

REFERENCES

1. Brunner, U: Zur Vermeidung von sekundären Lymphödemen nach Varizenoperation. *Phlebologie u Protokoll* 4 (1975), 266.
2. Kubik, S: Das Venensystem der unteren Extremität. *Der Informierte Arzt, Gazette Medicale*.
3. Van Bellen, R, et al: Lymphatic disruption in varicose vein surgery. *Surgery* 82 (1977), 257-259.
4. Babcock, WW: A new operation for the extirpation of varicose veins of the leg. *NY Med J* (1907), 86:153-156.
5. Bergan, JJ: Surgical management of primary and recurrent varicose veins. In: *Handbook of Venous Disorders*. Gloviczki, P, JST Yao (Eds.), Chapman & Hall Medical, London, 1996, 394-415.
6. Timi, JR, MF Zanoni, AS Yamada, et al: Lesions lymphatiques des membres inferieurs après chirurgie des varices. Analyse par lymphoscintigraphia. *Revista Panamericana de Flebologia y Linfologia* 31 (1988), 17-21.
7. Oesch, A, J Kinser, RP Meyer, et al: Le lymphoedème dans les affections veineuses des jambes. *Med. et Hyg.* 37 (1979), 2746-2749, 1979.

8. May, R: Schädigung der Lymphbahnen bei Varizenoperationen. *Angio.* 5 (1981), 265-268.
9. Fischer, R, G Früh: Resultate der Varizenoperation beim Vorliegen eines primären Lymphödems. *Phlebol.* 20 (1991), 9-13.
10. Langer, C, R Fischer, A Fratila, et al: Leitlinien zur operativen Behandlung von Venenkrankheiten. *Phlebol.* 26 (1997), 66-71.
11. Chardonneau, JM: Etiologies des Lourdeurs de Jambes. *Phlebol.* 1 (1999), 37-39.
12. Partsch, H: Indikationen für aktive Varizentherapie. *Vasa Suppl.* 33 (1991), 36-38.
13. Partsch, H, CH Stoberl, A Urbanek, et al: Clinical use of indirect lymphography in different forms of leg edema. *Lymphology* 21 (1988), 152-160.
14. Jagtmann, BA, JP Kuiper, AJ Brakkee: Measurements of skin elasticity in patients with lipedema of the Monocorpus "rusticanus" type. *Phlebol. (France)* 37 (1984), 315-319.
15. Perrin, M, M Nicolini: Indications chirurgicales dans le traitement des varices primitives. *Phlebol.* 2 (1999), 181-185
16. Boris, M, S Weindorf, BB Lasinski: The risk of genital edema after external pump compression for lower limb lymphedema. *Lymphology* 31 (1998), 15-20.

Michael Földi, MD
Földiclinic
Rösslehofweg 2-6
D-79856 Hinterzarten, GERMANY