Evaluation of Venous Ulcers

VENÖZ ÜLSERLERİN DEĞERLENDİRİLMESİ

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Summary

Venous stasis ulcer of the lower limb is a common, potentially debilitating disorder affecting 1% of the population. Approximately one third of patients with chronic venous insufficiency will develop limb ulcers over a ten-year period. A history of superficial phlebitis or deep vein thrombosis was elicited in most of the patients. Including all legs, venous ulcers were more common in the left leg with the number of 20 (34.4%) then in the right with 14 (24.1%). Surgical treatment of venous ulcers should be considered in the patients who fail in medical treatment.

Key Words: Venous ulcer, Etiology, Clinical foundations

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Özet

Alt ekstremitenin venöz staz ülserleri yaygın olarak görülür ve nüfusun %1'ini potansiyel olarak etkiler. Kronik venöz yetmezliği olan hastaların yaklaşık olarak üçte birinde on yılı aşkın bir sürede alt ekstremite ülserleri gelişir. Hastaların çoğunda derin ven trombozu veya yüzeyel tromboflebit öyküsü vardı. Venöz ülserler her iki bacakta da görülmelerine rağmen, sol tarafta 20 (%34.4) miktarı ile daha fazla olarak, sağ tarafta ise 14 (%24.1) tane bulunmuştur. Medikal tedavinin yetersiz kaldığı hastalarda cerrahi tedavi düşünülmelidir.

Anahtar Kelimeler: Venöz ülser, Etiyoloji, Klinik bulgular

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Approximately 1% of the population is at significant risk for development of venous ulceration, which is debilitating and costly to both the patient and the health care system (1). Venous ulceration is the most undesirable consequence of exposure to the elevated venous pressure associated with chronic venous insufficiency (2).

Patients and Methods

Between April 1990-February 1998, 46 patients with venous ulcers were hospitalised in Dermatology and Cardiovascular Clinics. 28 patients were men (60.8%) and 18 were women (39.2%) with a mean age of 49 years (ranging from 23 to 67 years).

The mean duration of time since the patients claimed the ulcer first appeared was 27 months (ranging from 6 to 68 months).

Patients referred for evaluation and treatment of venous ulceration were initially evaluated by a clinician with a complete history and physical examination. Items of interest included a history of deep venous thromboses, arterial occlusive disease, cancer, diabetes, dermatitis, arthritis, neuropathy, local trauma, and infection.

Each patient was performed in the Dermatology Clinic. Assessment included the location of the ulcer (medial, lateral, anterior, posterior), the depth (superficial, deep) with the adjacent skin surface used as a reference, the quantity (single, multiple) and the area calculated as the product of the maximal perpendicular diameters. Additional

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information includes appearance ulcer bed, the amount and character of drainage, the appearance of lower limb (erithema, dermatitis), and the degree and character of discomfort.

A medical examination and non-invasive assessment of arterial and venous circulation in both legs were performed. Both arterial and venous circulation was assessed by use of duplex ultrasonography (Acumen 128 scanner) with documentary capabilities. Six patients were evaluated with contrast ascending venography. Each of the extremities studied, the superficial, deep, and perforating systems were evaluated for the presence of acute or chronic thrombus, and valvular competency was then determined.

Results

A history of superficial phlebitis or deep vein thrombosis was elicited in most of the patients. The incidence of other related factors were follows; diabetes, 13%; pulmonary embolism, 10%; infection, 8%; cancer, 5%; local trauma, 4%.

Duplex examination demonstrated postthrombotic changes (thrombosis or recanalization) in 41 of the 58 extremities. Ascending venograms in 4 (6.8%) extremities demonstrated incompetence of communicating veins. 9 of 58 ulcerated extremities (15.5%) had venous insufficiency confined to superficial venous system only; 45 (77.5%) had either deep only or combined superficial, communicant and deep venous insufficiency.

Including all legs, venous ulcers were more common in the left leg 20 (34.4%) then in the right 14 (24.1%). 12 patients (20.6%) had bilateral ulcers. Venous ulcers in the right leg were significantly lower compared with left leg. There was statistical difference between the left leg and right leg ($t=3.33$, $p<0.05$). In 51 patients (93.1%) the ulcers was located over the gaiter of the leg, around the medial malleolus (Figure 1), and in 7 (6.9%) it was in the region of lateral malleolus (Fig 2). Isolated foot ulcers were not seen in the legs. Ulcer size ranged from 13 to 48 mm. All patients had the typical appearance of lipodermatosclerotic skin around the ulcer, i.e., pigmented, ect., and contracted tight skin.

Culture results from the ulcer crater revealed staphylococcus (4.34%), enterobacter (2.17%) and pseudomonas species (2.17%).

Surgical intervention was considered in 6 patients after a failed medical treatment with lower limb elevation, skin hygiene, graded compression stocking application.

Discussion

Venous stasis ulcer of the lower limb is a common, potentially debilitating disorder affecting 1% of population. Approximately one third of the patients with chronic venous insufficiency will develop limb ulcers over ten-year period (1). Although venous insufficiency has been associated with valvular incompetence, venous obstruction, calf muscle pump disjunction, and arteriovenous connections, the exact role that each of these play in the overall genesis of the sequence of venous stasis is uncertain (3,4). The diagnoses of venous insufficiency were made by clinical evaluation and noninvasive hemodynamic testing. Recently, duplex ultrasound imaging has been used to examine such patients (5), a method that has been used in our vascular laboratory since 1990.

All patients except eleven had qualitative venous duplex examination of the involved extremity to identify evidence of prior deep venous thromboses (old thrombus and recanalization) (Figure 3) and deep venous insufficiency (Figure 4). On the basis of history and duplex examination results, prior DVT would contribute to 41 cases of venous insufficiency. A presumptive diagnosis of subclinical DVT on the basis of a positive duplex scanning result were found 78.2% in patients, but without a history of prior DVT occurred in only 21.8% of the patients. In most cases venous ulceration could not be related to a thrombotic event (1,2). Our result indicated that slightly 15.5% of all patients with venous ulcers seen in our laboratory had abnormalities of the superficial venous system with normal deep veins.

In the majority of patients (85%) the ulcers will heal with conservative therapy i.e., lower limb elevation, wound hygiene, graded compression stockings, and Unsays boot application (3,6). Less than 10% of the ulcers may not heal with this treatment and a significant number may recur after initial healing. This subset group of patients with severe, refractory venous ulcers may require surgical

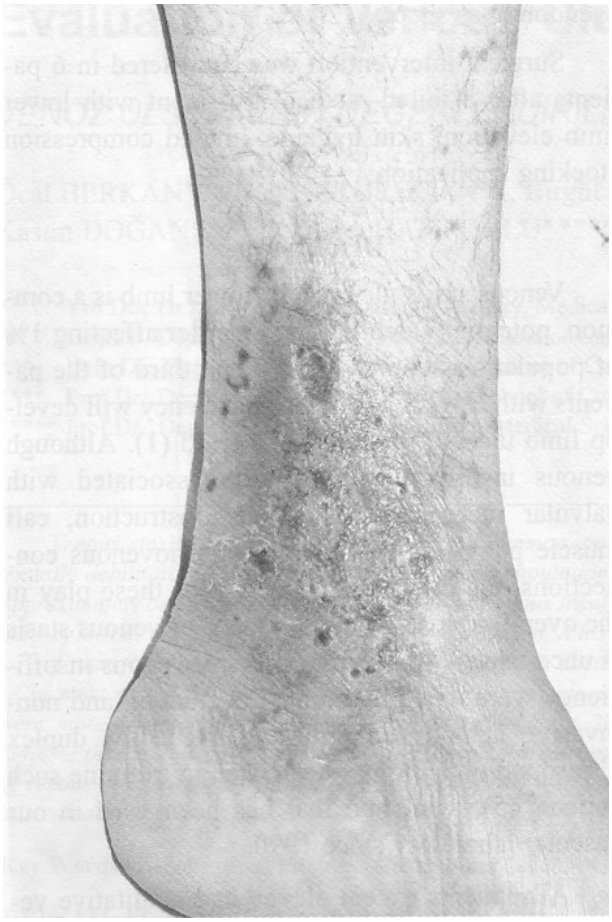

Figure 1. Venous ulcer around the medial malleolus.

Figure 2. Venous ulcer around the lateral malleolus.

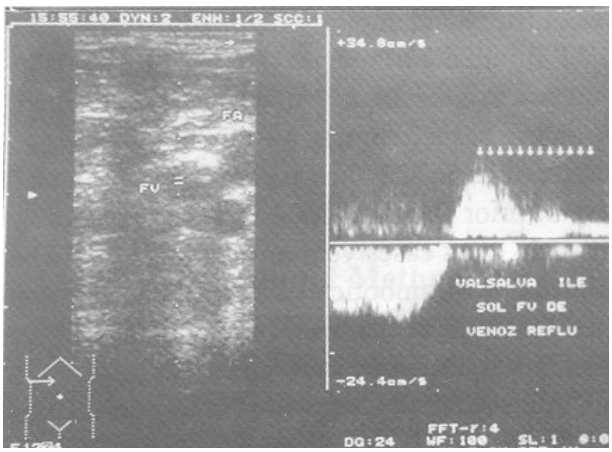

Figure 3. The Doppler finding that shows the venous reflux in femoral vein.

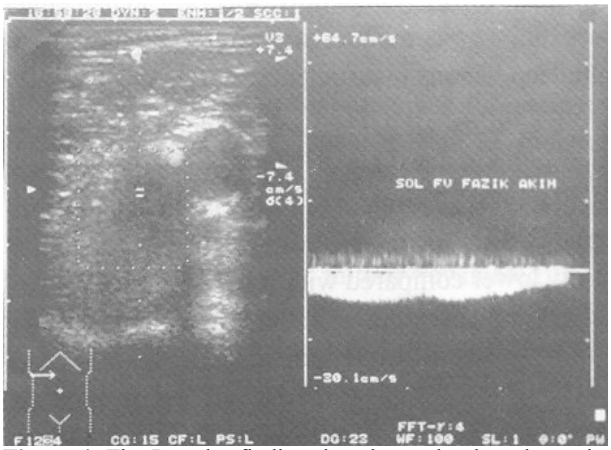

Figure 4. The Doppler finding that shows the thromboses in femoral vein.

intervention (6,7). Since antecedent and concomitant events that occur with venous stasis ulcers include venous outflow tract obstruction/regurgitation and superficial venous system incompetence, surgical intervention may be aimed at one or a combination of these factors: vein valve transplant,

Figure 5. Appearance after the surgery.

valvuloplasty, venous bypass, and stripping/ligation of the superficial venous system (6). Ulcer recurrence rate with these modern surgical reconstrictive procedures is 25-50% (3). On the other hand, since the common abnormality associated with all venous ulcers is incompetent communicating veins, interruption of these veins aids in ulcer healing. The recurrence rate for ulceration with interruption of the incompetent communicating veins ranges from 0% to 58% (3,7). This wide range of results is probably related to the indication for surgery.

Although the majority of our patients with stasis venous ulcer respond to conservative treatment, 13% of the patients will require surgical intervention. Four patients had ulcers with superficial varicose veins, and two had deep venous insufficiency. The four patients only had stripping/ligation, and the other two had the incompetent communicating veins interrupted and stripping/ligation of the superficial venous system at surgery (Figure 5). Recurrence was not seen in these patients.

Therefore we would conclude that, the diagnosis of venous ulcers was made easily by clinical evaluation and non-invasive hemodynamic testing. Surgical treatment of venous ulcers should be considered in-patients who fail medical treatment. Surgical approach should be tailored according to the stage of the disease process.

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