VENÖZ BACAK ÜLSERLERİNİN TEDAVİSİ

TREATMENT OF VENOUS LEG ULCERS

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ÖZET

Venöz ülserler yaygın olup, tüm alt ekstremite ülserasyonlarının büyük bir kısmını oluşturur ve her sosyoekonomik sınıfı etkiler. Nüfusun yaklaşık% 1'i hayatlarının bir noktasında venöz ülser oluşumundan etkilenir. Bu ülserler yaşam kalitesini düşürür ve bireyin sosyal işlevini sınırlandırır. Amacımız venöz ülseri olan hastalarda tedavi sonuçlarını tartışmaktır.

Bu çalışmaya venöz yetmezliğe bağlı tek taraflı bacak ülseri olan 14 ardışık hasta dahil edildi. Yaşları 28 ile 79 arasında değişen 8 kadın, 6 erkek hasta vardı ve yaş ortalaması 51.3 ± 15.9 yıldı. Ülserlerin çapı 12 ila 43 mm arasında değişiyordu. Yüzeyel venöz yetmezliği olan üç hasta, vena safena magna'ya striping uygulanarak cerrahi olarak tedavi edildi. Diğer 11 hastaysa venoaktif ilaç tedavisi ile birlikte kompresyon ve yara bakımı uygulanarak tedavi edildi. Varis ameliyatı geçiren 3 hastada ülsere yaralar 4 ay içinde iyileşirken, diğer hastaların ülserleri 9-12 ay içinde iyileşti.

Yara bakımı ve kompresyon uygulamasının venoaktif ilaç tedavisi ile kombinasyonu, venöz ülserasyonun tedavisinde temel dayanaktır. Bununla birlikte, sadece yüzeysel venöz yetmezliği olan hastalarda, nüksü önlemek için cerrahi müdahale yapılabilir.

Anahtar Kelimeler: Venöz Ülserasyon, Kompresyon, Striping.

ABSTRACT

Venous ulcerations are extremely common, accounting for a large proportion of all lower extremity ulceration and affect each socioeconomic class. Approximately 1% of the population is affected for development of venous ulceration at some point in their lives. These ulcerations reduce the quality of life and limit individual social function. Our aim is to discuss the results of treatment in patients with venous ulcers.

Fourteen consecutive patients with unilateral leg skin ulceration due to venous insufficiency were included in this study. There were 8 female and 6 male patients, ranging in age from 28 to 79 with a mean age of 51.3±15.9 years. The diameter of the ulcers ranged from 12 to 43 mm. Three patients with superficial venous insufficiency were surgically treated with stripping of the long saphenous vein. The remaining 11 patients were treated with compression and wound care together with venoactive drug therapy. In 3 patients who underwent varicose vein surgery, ulcerated wounds have healed within 4 months, while the other patients' ulcerations have healed within 9-12 months.

The combination of wound care and compression application with venoactive drug therapy is the mainstay in the management venous ulceration. However, in patients with superficial venous insufficiency alone, surgical intervention may be performed to avoid recurrences.

Keywords: Venous Ulceration, Compression, Stripping.

INTRODUCTION

Venous ulcerations are extremely common, accounting for a large proportion of all lower extremity ulceration and affect each socioeconomic class (Reichenberg et al., 2005). Approximately 1% of the population is affected for development of venous ulceration at some point in their lives (Callam et

al., 1987). It is estimated that venous ulcerations are more common in women than men. In males, the ratio increases with age, and in older people over 85, more males are reported to be affected than females (Reichenberg et al., 2005).

Chronic venous insufficiency is the leading cause of approximately 70% of all lower limb skin ulcerations. These ulcerations reduce the quality of life (Magnusson et al., 2006). They are often located in the gaiter area between the ankle and the calf, especially around the medial malleolus (Agale et al., 2013). Our aim is to discuss the results of treatment in patients with venous ulcers.

PATIENTS METHODS

Fourteen consecutive patients with unilateral leg skin ulceration due to venous insufficiency were included in this study. Informed consent was provided from all patients. Fasting blood samples were taken from each patient to measure serum 25-hydroxyvitamin D (25(OH)D) levels and routine laboratory testing. Patients with diabetes mellitus, cancer or local trauma were not included in the study. There were 8 female and 6 male patients, ranging in age from 28 to 79 with a mean age of 51.3±15.9 years.

In all patients, arterial and venous circulation of both lower extremities was examined by color venous duplex imaging. Each of the examined lower limbs was assessed for the presence of acute or chronic thrombosis of deep, superficial and perforated venous systems. Furthermore venous valvular function was assessed. Color venous duplex examination confirmed only superficial venous insufficiency in 3 patients, both superficial and deep venous insufficiency in 10, and deep venous insufficiency in 1. There were no patients with peripheral arterial disease.

RESULTS

Of the 14 patients, the ulceration was on the right lower limb in 6 patients and on the left lower limb in 8 patients. The main complaints of the patients were pain in all 14 patients, itching in 6 patients and wound leakage in 2 patients. One patient complained of his venous ulceration developed from a scar after harvesting of long saphenous vein for use in coronary artery bypass grafting (Figure 1). The presence of ulcerations in patients ranged from 4 months to 32 months (mean 21 months).

The ankle brachial index was calculated and found to be normal in all patients. In 13 patients, ulcerated wounds were localized in the medial gaiter region, around the medial malleolus. In the remaining one patient, ulceration was localized around the lateral malleolus (Figure 2). The diameter of the ulcers ranged from 12 to 43 mm. Most patients had the typical appearance of lipodermatosclerosis. In these patients, the lipodermatosclerosis persisted even after healing ulceration (Figure 3). COVID-19 was diagnosed in a patient who was hospitalized because of thrombosis in the superficial veins. His chest computed tomography showed ground-glass appearance and consolidations (Figure 4). This patient, whose real-time reverse transcriptase polymerase chain reaction test (RT-PCR) was positive, was referred to the infectious diseases department. At the control examination performed three months later, he was found to be healthy and healing was observed in the venous leg ulcer.

Vitamin D levels of our patients ranged from 4.55 ng/ml to 15.10 ng/ml, and the average vitamin D level was 7.88 ± 3.51 ng/ml. Vitamin D level was insufficient in all our patients. They were consulted by the internal medicine department.

Three patients with superficial venous insufficiency were operated on. In these patients, stripping of the long saphenous vein was performed from the groin to the mid-calf region and compression therapy was applied after the operation. The remaining 11 patients were treated with compression and wound care together with venoactive drug therapy. Daflon 500 mg tablet (a micronized purified flavonoid fraction) was administered twice a day as venotonic drug to all patients. In 3 patients who underwent varicose vein surgery, ulcerated wounds have healed within 4 months, while the other patients' ulcerations have healed within 9-12 months.

DISCUSSION

Most venous leg ulcers were completely or partially in the gaiter area on the medial or, less commonly, the lateral aspect of the leg, as seen in our patients. This finding is consistent with the fact that most skin leg ulcers originate from chronic venous disease (Callam et al., 1987). The basic hemodynamic changes in chronic venous disease are reflux, luminal obstruction and calf muscle pumping dysfunction. The pathophysiological interactions between these changes are complex (Camerota et al., 2015).

Venous ulcerations are developed due to stubborn or ambulatory hypertension in the calf veins often resulting from deep venous thrombosis (DVT) (Xie et al., 2018). DVT is the most common cause of venous ulcerations, which account for about 60% of cases (McLoone et al., 2003). Postthrombotic syndrome (PTS) is a chronic complication of DVT, and despite anticoagulant treatment it may develop in 20% to 50% of patients. In 5% to 10% of cases, a severe PTS pattern may occur which decreases the quality of life and manifests itself as a venous ulcer (Rabinovich and Kahn., 2007). The pathophysiology of PTS is thought to be a combination of venous valvular reflux and venous outflow restriction, the combination of which causes ambulatory venous hypertension, resulting in PTS-associated edema and skin changes (ten Cate-Hoek., 2018). Thus, the development of venous ulcer is the ultimate and most severe presentation of PTS (ten Cate-Hoek, 2018).

It has been reported that in patients with an ambulatory venous pressure of less than 30 mmHg, no ulceration occurred, whereas the incidence of venous ulceration was 100% with an ambulatory venous pressure more than 90 mmHg (Nicolaides et al., 1993).

In patients with chronic venous disease, phlebolymphedema (secondary lymphedema) may also develop. Histologic examinations of these patients demonstrate collapse and thickening of lymphatic vessels, luminal obstruction, and opening of the interendothelial junctions (Camerota et al., 2015). The skin pigmentation surrounding venous leg ulcers is due to dermal iron deposition as a result of hemoglobin breakdown from erythrocytes, which have leaked into the tissue (Camerota et al., 2015). All kinds of precautions should be taken because of the possibility of venous ulceration in patients developing lipodermatosclerosis.

Although graduated compression therapy inhibits swelling and strengthens venous function, the exact mechanism of action of compression therapy is unknown. However, it is undoubtedly important to ensure that the coaptation of venous valves by external compression (Nelson et al., 2006). External compression reduces vessel diameter and increases venous flow rate; as a result, edema is reduced and the calf muscle pump becomes in a better condition (ten Cate-Hoek, 2018). Compression therapy thus prevents destructive effects of venous hypertension (Blecken et al., 2005).

Patients with superficial venous insufficiency, especially when this is the only venous reflux in the lower extremity, are suitable for varicose vein surgery, as seen in our patients. Surgical intervention may lead to faster ulceration healing and improved venous function compared to compression therapy alone (Nelson et al., 2006). It has been reported that although most patients with venous ulceration improved with conservative treatment, 13% of them require surgery (Berkan et al., 1999). According to the data obtained from an existing randomized trial, the one-year recurrence rate was significantly lower after superficial varicose vein surgery (12%) compared with compression therapy alone (28%) (Barwell et al., 2004).

Occlusive or semiocclusal wound dressing prevents loss of water evaporating from the wound and maintains useful factors for improvement of ulceration. However, these dressings vary according to their ability to control and absorb both the amount and composition of the wound drainage (Nelson et al., 2006). A clean moist wound with elimination of surrounding edema will provide optimal healing conditions for venous leg ulcerations (Callam et al., 2005).

Even after the improvement of venous ulceration, continuous monitoring of the patient and continued low venous pressure values are needed to avoid recurrences. Epidemiological studies have shown that venous ulcerations have high recurrence rates of approximately 26% -70% (Moscicka et al., 2019). Graduated compression therapy improves the venous hypertension-related pathophysiological changes as long as it is used. Therefore, graduated compression therapy should be continued even after venous ulceration has healed to avoid recurrent events.

It has been reported that healing of venous ulcers is accelerated with Daflon treatment. Daflon tablet (500 mg) is a micronized purified flavonoid fraction containing 90% diosmin and 10% other flavonoids expressed as hesperidin. This drug might be a useful adjunct to conventional therapy in large and long-standing venous ulcers (Smith, 2005), as seen in our series.

As in our series, the mean vitamin D level of patients with venous leg ulcers was found to be lower than the control subjects (Burkievcz et al., 2012). Nowadays, our world has been suffering from a viral pneumonia disease called COVID-19. The quarantine and lockdown measures implemented to deal with the COVID-19 outbreak resulted in a decrease in vitamin D levels due to deprivation of sunlight, especially in the elderly (Ekim and Ekim., 2020). Elderly patients with venous ulcers are also exposed to vitamin D deficiency during the lockdown period due to the deprivation of sunlight. Since low vitamin D levels also negatively affect the treatment of venous ulcer, it is beneficial for patients with venous ulcers to sunbathe on the balconies of their homes.

If thromboinflammation develops in COVID-19 disease, a tendency to thrombosis occurs. Therefore,

Patients with COVID-19 are likely to have an increased risk of developing DVT. The pathogenesis of Coagulopathy that develops in COVID-19 patients is not yet known, but it is thought to be the result of a thromboinflammation (Ünüvar., 2020). The coagulopathy that occurs in COVID-19 appears to be related to the severity of the disease and the resulting thromboinflammation and not to intrinsic viral activity (Connors J and Levy,. 2020). As the risk of deep vein thrombosis increases in COVID-19 patients due to inflammation and increased coagulability, we think that the risk of developing venous ulcers in these patients might be increased in the future. Therefore, it is very important to comply with all measures put in place by governments to protect against COVID-19.

CONCLUSION

The combination of wound care and compression application with venoactive drug therapy is the mainstay in the management venous ulceration. However, in patients with superficial venous insufficiency alone, surgical intervention may be performed to avoid recurrences. In addition, patients with venous ulcers should be protected from COVID-19 by using a face mask, while paying attention to physical distance and hand hygiene. They should also avoid vitamin D deficiency.

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Figure 1. The appearance of venous ulceration developed from a scar after harvesting of saphenous vein.

Figure 2. The appearance of venous ulceration around the outer malleolus.

Figure 3. The appearance of ongoing lipodermatosclerosis after venous ulcer healing.

Figure 4. Ground-glass appearance and consolidations in computed tomography of a patient with venous ulcer.