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Actual approach to varicosities; our sclerotherapy technique at out-patient clinic with office-based settings, in operating room or instead of operation

Variközitelere yaklaşım; poliklinik şartlarında, ameliyathanede veya ameliyata alternatif olarak skleroterapi

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Abstract

Objective: Varicosities are important problems for young and elder patients. Most common complaint for young female patients is aesthetic. This complaint increases with age of female patients. We aimed to report our sclerotherapy technique and sclerotherapy experiences.

Materials and Methods: Patients who admitted to our outpatient clinic between 2013 January and 2016 June were investigated retrospectively. Age, gender, treatment method (liquid or foam sclerotherapy), the number of procedure performed per patient and additional surgical intervention to the sclerotherapy procedure were noted.

Results: 2231 patients were treated with 9836 sessions of sclerotherapy at out-patient clinic (1996 female, 89%). Mean ages were 44.3 for female patients and 46.7 years for male patients. Female patients were between CEAP 1 and 3 (n: 1885, 94.44%). Male patients were between CEAP 2 and 4 (n: 208, 88.51%). We performed combined surgical treatment to 212 patients. We performed sclerotherapy to 21 patients for recurrent varicose vein. The most common complication was hyperpigmentation (n=154, %7). Skin necrosis was evident in 24 patients (%1). Thrombosis of treated veins occurred in 137 (%6) patients. Two patients had transient blurring attack in their vision. Migraine attacks were triggered at 33 (%1.4) patients after injections.

Conclusion: Sclerotherapy is a treatment technique that can be performed in outpatient clinic. Today aesthetic fears increased the use of this technique and growing experience decreased the complication risks. Sclerotherapy is very efficient method for treating small telangiectasias, reticular veins and some of greater varicose veins. It has high aesthetic benefits when combined with surgical modalities.

Keywords: Varicose Vein; Reticular Vein; Telangiectasia; Sclerotherapy.

Özet

Amaç: Telenjektazi ve retiküler venler, hem genç hem de yaşlı hasta grubu için önemli bir problemdir. Genç kadın hastalarda en önemli şikayet nedeni estetik kaygılardır ve yaşla beraber bu şikayet artmaktadır. Çalışmamızda, skleroterapi tekniği ve deneyimimizi paylaşmak istedik.

Gereç ve Yöntem: Ocak 2013 ve Haziran 2016 arasında polikliniğimize başvuran hastalar retrospektif olarak incelendi. Yaş, cinsiyet, tedavi metodu (sıvı veya köpük skleroterapi), hasta başına uygulama sayısı ve skleroterapiye ek olarak uygulanan cerrahi girişimler araştırıldı. İşlem sonrası komplikasyon oranları değerlendirildi.

Bulgular: 2231 hastaya polikliniğimizde 9836 seans skleroterapi uygulandı (1996 kadın, %89). Kadın hastalar için ortalama yaş 44,3 ve erkek hastalar için 46,7 idi. Kadın hastaların önemli bir kısmı CEAP 1 ve 3 arasında idi (n: 1885, %94,44). Erkek hastaların önemli bir kısmı ise CEAP 2 ve 4 arasında idi (n: 208, %88,51). Skleroterapiye ek olarak 212 hastaya cerrahi girişim uygulandı. Rekürren variköz venler nedeni ile 21 hasta skleroterapiye alındı. İşlem sonrası en sık komplikasyon hiperpigmentasyon idi (n=154, 7%). 24 hastada ise cilt nekrozu ortaya çıktı (1%). Girişimde bulunulan 137 hastada, işlem yapılan venlerde tromboz izlendi (6%). İki hastada görmede geçici bulanıklaşma ortaya çıktı. Migren atağı 33 hastada (%1,4) tetiklenirken 3 hastada atak tedavinin sonlandırılması gerektirecek kadar şiddetli oldu.

Sonuç: Skleroterapi poliklinik şartlarında uygulanabilir. Estetik kaygılar, bu tekniğin kullanışını arttırırken giderek artan deneyim komplikasyon oranlarını azaltmıştır. Günümüzde skleroterapi; küçük telenjektazilerin, retiküler venlerin ve cerrahi sonrası ortaya çıkan rekürren venlerde dahil olmak üzere bazı büyük venlerin tedavisinde kullanılan oldukça etkili bir tedavi metodudur. Cerrahi tekniklerle kombine edildiğinde estetik katkısı oldukça büyüktür.

Anahtar Kelimeler: Variköz Venler; Retiküler Ven; Telenjektazi; Skleroterapi.

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INTRODUCTION

Varicose veins are dilated veins and they are commonly located on legs due to increasing venous pressure. Varicose veins affect 25% of women and 15% of men in general population (1). Family history, female sex, obesity, older age, pregnancy, and prolonged standing are the most important risk factors developing varicose diseases. Swelling, burning, itching, and night cramps in legs are important complaints for varicose diseases (2). Telangiectasias and reticular veins are seen more often compared greater varicose veins. They might be ignored in the past but today these veins are a major problem for patients especially for women, with the complaints like leg discomfort and leg aesthetic.

Today, liquid and foam sclerotherapy are the most preferable treatment techniques for varicose veins, especially for telangiectasias and reticular veins. In this study, we aimed to investigate our sclerotherapy technique and sclerotherapy experiences for patients who came our outpatient clinic with CEAP stage 1 to stage 6 complaints and aimed to investigate combined surgical intervention experiences with this treatment technique.

MATERIALS and METHODS

Patients who admitted to our outpatient clinic between 2013 January and 2016 June were investigated retrospectively. Age, gender, used treatment method (liquid or foam sclerotherapy), the number of procedure performed per patient and additional surgical intervention to the sclerotherapy procedure were explored.

Liquid sclerotherapy was performed with lauromacrogol 400 0.5%, 1%, 2% and 3% (Aethoxysklerol 0.5%, 1% and 2%, 3%, Chemische Fabrik Kreussler & Co. GmbH P.O. Box 12 04 54 · D-65082 Wiesbaden). Foam was achieved by using Tessari method with double syringe system, with mixing of lauromacrogol 400 and air in with a 1:4 proportion in two syringes (one 10 cc and one 5 cc) which are connected to each other with a three-way stop-cock. Foam was injected immediately after generated in less than one and half minute. We performed liquid sclerotherapy to the veins smaller than 2 mm in diameters. We performed foam sclerotherapy to veins between 2 and 5 mm. We performed foam sclerotherapy or combined surgical intervention to the veins which were greater than 5 mm in diameters. Varicose veins which were not treated with sclerotherapy underwent surgical miniphlebectomy under local anesthesia. We combined saphenous vein surgery, miniphlebectomy and sclerotherapy procedure at the same session for some patients who also had varicose and telangiectatic veins with varicose veins. We waited for a month for healing of incisions and regression of related veins. We performed sclerotherapy two months later if surgical intervention included saphenous vein. We also preferred sclerotherapy for recurrent varicose veins after vein surgery. No more than 2 mg/day lauromacrogol 400 were used to each patient for one procedure due to reduce inflammatory activity and scar risk on the skin. Compression bandage was performed after the operation to the leg and it was recommended to wear compression stocks 1 day later to both legs for at least a week. We recommended compression stockings to be worn before leaving bed and taken off while sleeping. Next sclerotherapy procedure was performed 15 days after the initial procedure. Patients were medicated with topical anti-inflammatory cream (topical diclofenac, twice daily), fibrinolytic cream (hirudin, twice daily) and venotrophic drug (diosmin+hesperidin 500 mg 1x2 po, triterpene glycoside 500 mg 2x1 po or calcium dobesilate 500 mg 2x1 po). At least fifteen minutes of walking were recommended after each session. None of the daily activities were restricted except motions requiring excessive stretching.

Treatment was cancelled in a 33-year-old female patient due to patent ductus arteriosus for increased embolism risk. There is a higher risk for patients with patent foramen ovale and 1 patient with foramen ovale decided to end procedure due to increased risk.

RESULTS

Between 2013 January and 2016 June, 2231 patients were treated with 9836 sessions of sclerotherapy at our out-patient clinic. Patient group was composed of 1996 female patients (89%) and 235 (11%) male patients. Mean age for female patients was 44.3 (14 to 88 years) and for male patients was 46.7 (12 to 89 years) (Figure 1, 2). Majority of female patients were between CEAP 1 and 3 (n: 1885, 94.44%). Session distributions of male and female patients are shown at figures 3 and 4. Most of the male patients were between CEAP 2 and 4 (n: 208, 88.51%). CEAP 5 and 6 patients were considerably low in female patients (0.35% to 6.81%) (Table 1). We performed combined surgical treatment to sclerotherapy for 212 patients (Endovenous thermal ablation (n=69), pack excision (n=86), stripping of saphenous vein (n=36), perforating vein excision (n=21)). We also performed sclerotherapy for recurrent varicose vein to 21 patients.

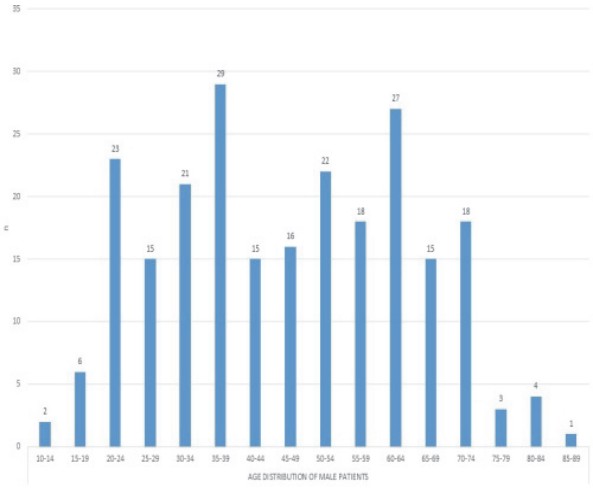

Figure 1. Age distribution of male patients

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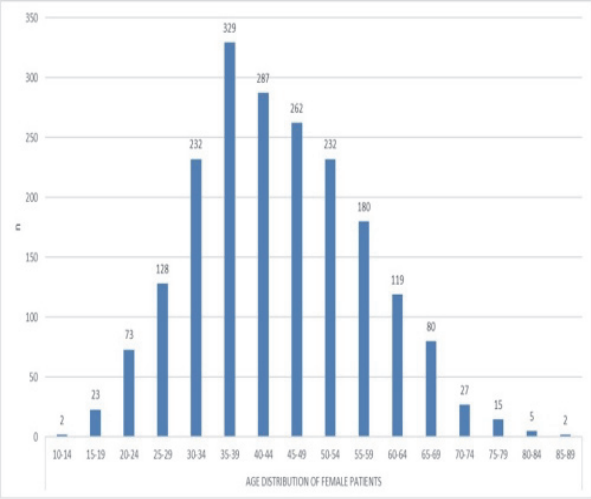

Figure 2. Age distribution of female patients

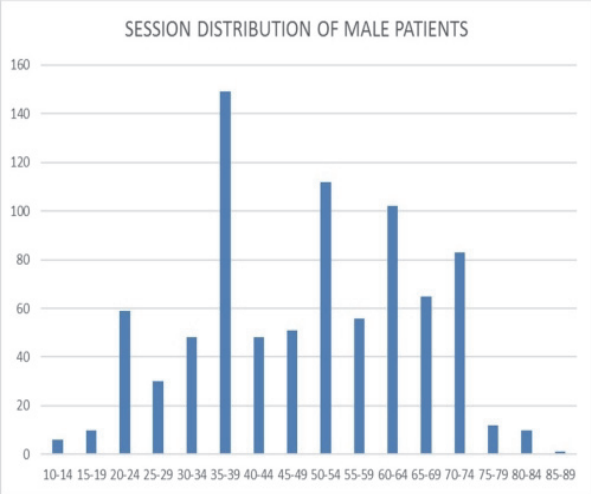

Figure 3. Session distribution of male patients

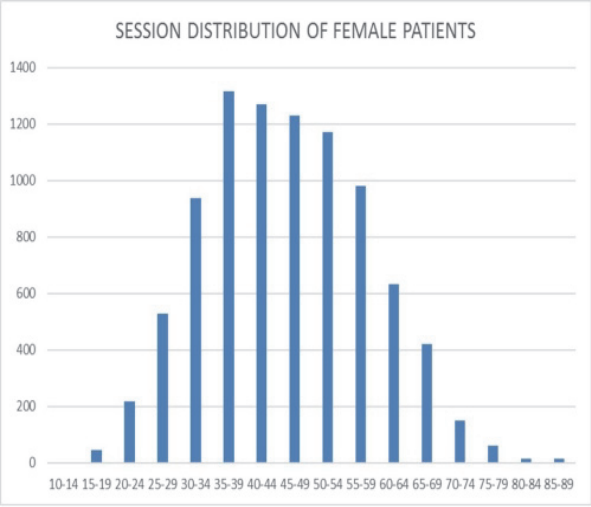

Figure 4. Session distribution of female patients

Table 1. Distribution of patients according to CEAP classification.

	Female	Male
CEAP 0	0	0
CEAP 1	641	11
CEAP 2	763	48
CEAP 3	481	83
CEAP 4	104	77
CEAP 5	5	11
CEAP 6	2	5

CEAP: Clinical Etiology Anatomy Pathophysiology Classification

The most common complication after sclerotherapy procedure was hyperpigmentation (n=154, %7). Skin necrosis was evident in 24 patients (%1) and it was closely related to injection of drug with higher concentration. Lytic and inflammatory reactions caused by 2% and 3% concentrations of lauromacrogol 400 were higher. Anti-inflammatory cream, fibrinolytic cream and venotrophic drug were helped to prevent hyperpigmentation and rigidity on the skin.

Thrombosis of treated veins occurred in 137 (%6) patients. 18 G needles or No: 11 scalpels were used for removal of thrombus and defibrinated blood. Twenty-six of these patients required more than one session. None of the patients had cerebral embolic event and/or transient ischemic attack. We did not observe deep vein thrombosis or pulmonary embolism. We did not use sclerotherapy for occluding great saphenous vein. We preferred surgical or endovascular treatments for any appropriate patient. Two patients had transient blurring in their vision and treatment was cancelled. None of the patients had further problems. Migraine attacks were triggered at 33 (%1.4) patients after injections which resulted with cancelation of treatment in 3 of them for severe prolonged attacks.

DISCUSSION

Procedure of damaging endothelium and causing occlusion of veins by using liquid or foam chemical agents are called sclerotherapy. Sclerotherapy may be performed to a wide variety of patients with major refluxing trunks, tributary varicosities, dilated venules, or telangiectasias (3). Sclerotherapy was a second-line treatment for varicosities after surgical or endovascular therapies (4). Today, we use this technique for a broad indication of varicose veins in outpatient clinic for treatment of telangiectasias and small venous packs or combined with other venous surgical interventions in operating room.

The most common complaint for female younger patients in our group was cosmetic, but for older female patients, pain was the most common complaint. Visibility

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of spider veins, telangiectasias and small varicose veins may deteriorate self-esteem. This situation is supported by dramatic increase in patients at younger age groups. Our population was also including a large population of young patients. Leg pain and swelling usually becomes an important problem in female middle-aged and elder patients or most of the male patients. This population develops symptoms of venous disease with long working hours, multiple pregnancies and lack of exercise.

Sclerotherapy can easily and safely be applied at out-patient clinics and office-based settings with low-risk. Patient bed should be positioned away from the walls, for leaving enough room for the surgeon while treating and in a well and balanced illuminated localization. It must always be kept in mind that lauromacrogol 400 may cause serious allergic reactions and even cause death. We strictly recommend having a first-aid kit and emergency medicine in office while performing sclerotherapy. Patients continue their daily life with ease after the procedure. One of the most important advantages of sclerotherapy is being a repeatable and cheap procedure. So we can perform the procedure by dividing to sessions. In our experiences we didn't use more than 2 mg/day lauromacrogol for preventing high inflammatory activity and scar. We treated 2231 patients in 9836 sessions, about 4.4 sessions for per patient. So we think that we can prevent sclerotherapy related complications like hyperpigmentation, rigidity and necrosis on the skin with using low doses drug and increasing the number of sessions.

Sclerotherapy is also a good alternative of surgery for large truncal veins. We usually prefer foam sclerotherapy for veins over 5 mm in diameter to evade from incision scars. Sometimes, even the slightest scars may become an important cosmetic problem for patients. Reducing the number of incision sites or completely evading from surgery will reduce cosmetic complaints significantly (5). Therefore, we used sclerotherapy not only telangiectatic or reticular veins but also isolated varicose packs. This option may cause rigidity and pigmentation on the skin due to treated big varicose veins, but immediately using anti-inflammatory and fibrinolytic creams, compression bandage and compression socks after treatment are effective methods for preventing these complications.

In past, we only used surgical excision of varicose veins in operation room, but today high aesthetic expectations of patients have directed us to use these procedures also in operating room with other venous surgical interventions (6). Now we also use sclerotherapy combined with surgical treatment for faster healing of aesthetic fears. In our experience we combined sclerotherapy with various surgical intervention techniques for 212 patients.

As well as surgical excision of large varicose veins, sclerotherapy of small telengiectasias help to patients for decreasing aesthetic concerns on postoperative period. Otherwise, sclerotherapy is a good option for recurrent varicose veins to prevent recurrent surgical scar risk. Patients who had vein surgery may not want to have a surgery again. So, sclerotherapy is a good option for these patients and we used sclerotherapy for this aim effectively.

Majority of the complications related to sclerotherapy are pain or aesthetic problems like hyperpigmentation, thrombophlebitis, and skin necrosis (7). Sometimes physicians may see important problems. Sarvanathan et al (8) reported major neurologic complications including transient ischemic attack, visual and speech disturbances and migraine in their experiences. In our experience, none of the patients had cerebral embolic event or transient ischemic attack. This may be due to vast majority of our patients were treated for superficial varicosities with low concentrations of lauromacrogol 400 (0.5 and 1%). Leong et al (9) reported a case of transient visual loss. Zouitina et al (10) reported a 36-year-old man with transient neurological symptoms and migraine with aura and both of the presented patients were recovered uneventfully. In our experience, we had 2 patients with transient blurring in vision and 33 patients with triggered migraine attacks. None of these patients had persistent neurological problem. But, we cancelled the sclerotherapy procedure of 3 patients with severe migraine and 2 patients with transient blurring.

Recurrence rates of sclerotherapy for great saphenous veins are as high as 90% which are significantly higher than surgery (4). So, we did not prefer sclerotherapy for treating great saphenous veins or great varicose veins in our practice. We think that radio-frequency or endovenous laser ablation methods are significantly better methods for saphenous problems. In patients who were not suitable for endovenous treatment, stripping is the method of choice.

CONCLUSION

Sclerotherapy is a safe and efficient method which can be preferred for almost each patient from CEAP 1 to CEAP 6 with different purposes. The best cosmetic results may be achieved with lower concentration and repetitive treatment regimes. Higher concentrations may be the treatment of choice in patients with truncal varicosities and perforating vein insufficiencies. Also, sclerotherapy may be a good alternative for recurrent varicose veins after surgery.

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