



Case Series

Venous Lakes of the Lips Successfully Treated With a Sclerosing Agent 1% polidocanol: analysis of 25 report cases



Dua Cebeci^{a,*}, Seide Karasel^b, Şirin Yaşar^c

^a Famagusta State Hospital Dermatology and Venerology, Famagusta, Cyprus

^b Famagusta State Hospital, Department of Physical Medicine and Rehabilitation, Famagusta, Cyprus

^c Haydarpaşa Numune Training and Research Hospital Dermatology and Venereology Department, İstanbul, Turkey

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ABSTRACT

BACKGROUND: Venous lakes of the lip is vascular ectasia that generally appears on the lower lip and other sun-damaged surfaces of skin in elderly patient. There are many local therapies for treatment of lip venous lake such as surgical excision, cryotherapy, infrared coagulation and laser therapy. Sclerotherapy as treatment is used in varicose veins, leg telangiectasia, hemorrhoids and hemangiomas but for lip venous lake only two case has been reported. Therefore, we managed this study to determine the efficacy of injection of 1% polidocanol in the treatment of venous lake lesions.

METHODS: This is retrospective study. Twenty five adult patient presenting with several localizations of venous lake were enrolled in the study. Informed consent was given before the treatment and a photo of the venous lake was taken. After the lesion was cleaned with an antiseptic, was slowly injected 1% polidocanol into each patient's lesion, followed by compression for 5 min. Visual Analog Scale (VAS) scale was used to indicate patient satisfaction.

RESULT: Lesions were completely cleared in all patients after treatment. The lesions generally disappeared in two cases leaving an insignificant scar, in two cases become angioedema with two sessions of sclerotherapy. In other cases side effects were not observed.

CONCLUSION: Sclerotherapy with polidocanol is an easy, inexpensive method and is found very effective in the treatment of lip venous lake. In the future it offers an alternative to other classic methods.

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1. Introduction

Venous lake is a venous dilatation, usually appearing as soft, compressible, dark blue to violaceous papules, in the lower lip. The cause and mechanism of formation is unknown there are usually seen in people older than 50 (after the 5th decade) and are more common in men than in women [1]. Histologically, a single layer of low endothelial cells and a thick wall of fibrous tissue in the lesion [2]. They are usually asymptomatic and uncomplicated but sometimes they can bleed in case of any minor trauma or injure. The clinical course of VL does not present a major danger but treatment may require cause of cosmetic reasons [3]. Numerous treatment modalities have been reported in the literatures, such as surgical excision, laser therapy infrared coagulation, cryotherapy and sclerotherapy [4]. Polidocanol is a kind of sclerosing agent that's

been used for the treatment of varicose veins and other vascular conditions. Usually it demonstrates the action of mechanism by damaging blood vessel endothelium. As a result of this damage platelets aggregate at the site venous wall eventually resulting in a dense network of platelets, cellular debris, and fibrin that occludes the vessel. As a result, the occluded vein is replaced with connective fibrous tissue [5]. For these reasons, the use of intralesional 1% polidocanol has selective destruction for treating smaller and more superficial vessels [6]. Therefore, we managed to determine the efficacy of injection 1% polidocanol for treating venous lake lesion of lip in this study.

2. Methods

2.1. Patients

This retrospective study was conducted in Haydarpaşa Numune Training and Research Hospital Dermatology and Venereology (DVL) Department located in İstanbul during a 4 year time period from June 2013 to October 2017. Totally 25 outpatient (10 males 15

* Corresponding author at: Famagusta State Hospital, Famagusta, Cyprus. Tel.: 05488586367.

E-mail address: perolidua@gmail.com (D. Cebeci).

Table 1
Characteristics of Venous Lake of the Lip.

| Case no | Age /sex | Localisation | Size of lesion /mm | Number of session | Possible causes | Recovery | Recurrence (during 6 months) |
|---------|----------|--------------|--------------------|-------------------|-----------------|----------|------------------------------|
| 1 | 37 /F | Lowerlip | 3 | 1 | Postrauma | complete | no |
| 2 | 83/M | Lowerlip | 3 | 1 | Senile | complete | no |
| 3 | 24/M | Upperlip | 4 | 2 | Postrauma | complete | no |
| 4 | 63/M | Lowerlip | 5 | 3 | Senile | complete | no |
| 5 | 33/F | Upperlip | 3 | 2 | Senile | complete | no |
| 6 | 76/M | Lowerlip | 5 | 1 | Senile | complete | no |
| 7 | 45/F | Lowerlip | 4 | 2 | Postrauma | complete | no |
| 8 | 43/F | Upperlip | 8 | 2 | Postrauma | complete | no |
| 9 | 83/F | Lowerlip | 4 | 1 | Senile | complete | no |
| 10 | 81/M | Lowerlip | 7 | 5 | Postrauma | complete | no |
| 11 | 67/F | Upperlip | 5 | 1 | Senile | complete | no |
| 12 | 59/F | Vermilion | 4 | 2 | Senile | complete | no |
| 13 | 29/F | Lowerlip | 7 | 4 | Senile | complete | no |
| 14 | 61/M | Lowerlip | 5 | 3 | Postrauma | complete | no |
| 15 | 76/F | Lowerlip | 6 | 4 | Senile | complete | no |
| 16 | 48/F | Lowerlip | 3 | 1 | Postrauma | complete | no |
| 17 | 66/M | Upperlip | 8 | 5 | Senile | complete | no |
| 18 | 72/M | Lowerlip | 6 | 3 | Postrauma | complete | no |
| 19 | 54/F | Upperlip | 4 | 2 | Senile | complete | no |
| 20 | 75/F | Lowerlip | 5 | 2 | Senile | complete | no |
| 21 | 39/F | Lowerlip | 3 | 1 | Senile | complete | no |
| 22 | 45/M | Lowerlip | 4 | 1 | Postrauma | complete | no |
| 23 | 69/M | Lowerlip | 7 | 3 | Senile | complete | no |
| 24 | 64/F | Lowerlip | 5 | 3 | Senile | complete | no |
| 25 | 78/F | Vermilion | 6 | 4 | Senile | complete | no |

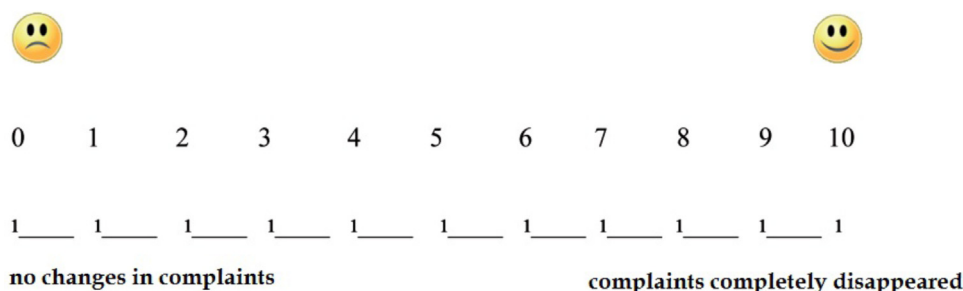


Fig. 1. Visual analog scale used in the study.

females) who had venous lake diagnoses were analyzed retrospectively. The mean patient age at the diagnosis of VL was 62.1 years (range, 24–89 years). All lesions were located on the lips (18 on the lower lip 5 on the upper lip and 2 vermilion) and these lesions ranged in size from 3 to 8 mm (Table 1). The diagnosis of VL was made on a clinical basis, sometimes with dermatoscopy the aid of the vitropression. Informed consent form was obtained from all cases before starting treatment. No patient had undergone previous treatment for their venous lake lesions. Systemic diseases, such as diabetes mellitus, hematological diseases, and anticoagulant drugs were questioned in order to prevent negative results in this treatment. Patients with any of these systemic diseases were not included in the study. This treatment procedure was done by a dermatologist. Clinical photographs were taken at the first visit, every injection day, and every follow up after treatment (Images 1–5). The patient’s general condition and vital signs were checked before the procedure. After proper antiseptic preparation, 1% polidocanol was slowly injected to each patient’s lesion by using an insulin syringe to flush the lesion and after this was followed by immediate compression for 5 min. Polidocanol dose was calculated – according to the size of the lesion almost 3 dizyem polidocanol%1 was injected into a 3 mm lesion. During injection, some patients felt injection pain but this soon disappeared. The patients were carefully monitored observed by the doctor and nurse in the dermatosurgery unit, until complete healing. Intervals between two injections were almost 3 week. Complications during or after injection

were treated and recorded. The treated lesions were checked for degree of clearance or disappearance of the lesion, any signs of scarring and allergic reaction were not observed. In this study, visual analogue scale (VAS) was used to determine the satisfaction level of the patients after the procedure. They marked the degree of improvement in the patients’ complaints after treatment on a 10 cm indicator chart. While ‘0’ value indicated that there was no reduction in the patient’s complaints, the value ‘10’ indicated that the patient’s complaints had completely disappeared. At the end of the 3rd and 16th week after the procedure, all patients were called for a control to evaluate both repeat the procedure and satisfaction (Fig. 1).

3. Statistical analyses

All analyses were performed on SPSS v21 (SPSS Inc., Chicago, IL, USA). For the normality check, the Shapiro Wilk test was used. The continuous variables from different times were analyzed with Wilcoxon signed rank test. p < 0.05 values accepted as statistically significant results. Statistical analysis revealed that VAS scores were independent of the age and skin type of the patient.

4. Result

Response was seen after 2–4 months medium follow-up of 3 months (a range of 1 to 6months).Eight patient, (32%) of venous

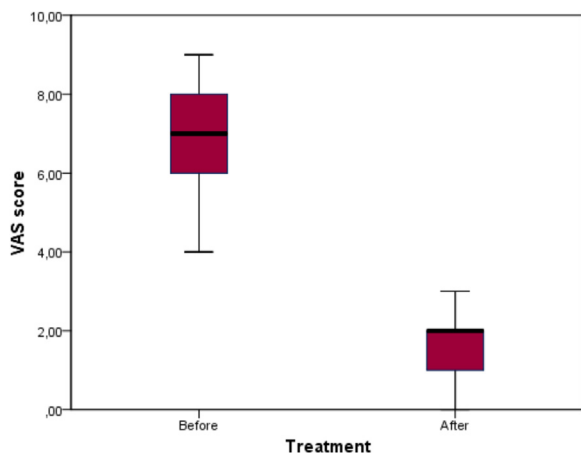


Fig. 2. VAS score change after the treatment of 25 patient with venous lake.

lakes recovered after a single treatment, 7 (28%), after two treatments, 6 (24%) after three treatments, 2 (8%) after four treatments and 2 (8%) after five treatments. After treatment, all of the patients (100%) lesions were completely cleared. In two cases occurred insignificant scar and hypopigmentation. In two cases became angioedema in the first injection but this complication was controlled and removed by treatment. According to the determined scale the cosmetic result was excellent, with complete clearance of venous lakes. The patients were follow-up in the dermatology department for at least 6 months after lesions were completely cleared, no recurrences of the lesions was observed in any patient. Every patient was satisfied with their treatment results. The mean value of VAS was 7 before treatment and 2 after treatment (between 2–4 months). When the distribution of prognostic scores of the patients before and after treatment was examined, it was observed that VAS ($p = 0.001$) scores significantly decreased (Fig. 2).

5. Limitations of this study

The study is based on the evaluation of patient satisfaction after treatment. However, the major limitation of this study was the lack

of a control group. In the future, it is planned that this study will include a control group and will compare with VAS scale.

6. Discussion

Numerous treatment methods have been used in the literature for benign vascular diseases, depending on their type and location. Sclerotherapy treatment indicates to the injection of a foreign substance to the endothelin wall which can cause change as thrombosis, necrosis and consequently fibrosis. Thus by administration of sclerosing agent, cellular calcium signaling and nitric oxide path way become activated followed by cell death [7].

There are many types of sclerosing agents, including ethanol, sodium tetradecyl sulfate (STS), bleomycin and nitrogen [8].

Our sclerotherapy treatment is usually performed with polidocanol or hypertonic saline (HS), both of which are well studied and well described in the literature. Polidocanol was developed for use as a local anesthetic in the 1931, but it was soon discovered that this substance caused sclerosis of small intravascular and even intradermal blood vessels; therefore its usage has changed. The Food and Drug Administration (FDA) approved polidocanol as a medicinal sclerosing agent in the United States in 2010, and was soon followed by several European countries. Polidocanol is available on the market in the form of Sclerovein 3% (England) Aetoxisclerol 0.5% (France) or Aethoxysclerol 1% or 3% (Germany, Europe) and is still using as sclerotherapy of telangiectasia around the world [9].

For the treatment of venous lakes, polidocanol is one of the first-line treatment storeduce the size of the lesions. it is easy, also practical cheap technique and as result gives minimal scarring and adverse effects [6]. For obtaining the complete resolution in some case, depending on the depth of the lesion recurrent sessions may be need. Although it is cost effective and safe with few major complications, polidocanol injection may have some risks. Allergic reactions, local pain, irritation, itching and swelling are many of them [10]. Therefore to avoid from these side effects before performing the treatment, we have to consider very clearly patients medical history; like age, the presence of underlying any systemic disease, and the type and location of patients venous lake are many factors that limit polidocanol treatment. In addition, when a patient is using an anticoagulant such as heparin, it is difficult to treat such a patient because the thrombosis does not occur very well and the



Image 1. a) Venous lake lesion appearance before the treatment. b) close-up view of the lesion. c) 5 dizeym 1% aethoxysterol injection. d) post-application of the treatment. e) 3 weeks after the treatment.

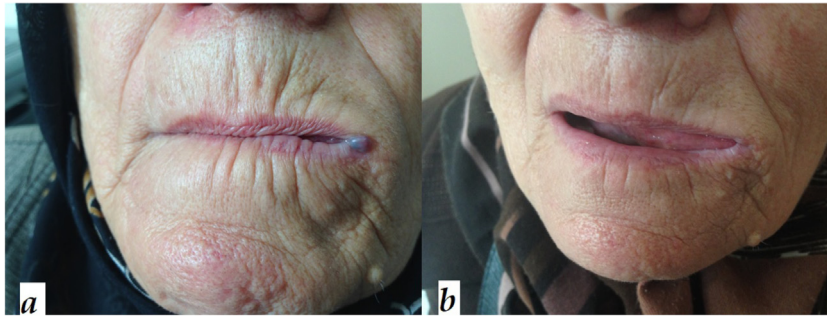


Image 2. a) The appearance of the lesion before treatment. b) view of the lesion after intralesional 4 sessions of 1% Aethoxysklerol treatment.



Image 3. a) The appearance of the lesion before treatment. b) after 5 diziye 1% aethoxysterol injection. c) view of the lesion after intralesional 4 sessions of 1% Aethoxysklerol treatment.



Image 4. a) The appearance of the lesion before treatment. b) 1% Aethoxysklerol was applied to the patient for 3 sessions. c) yellow crust was observed after the first session.

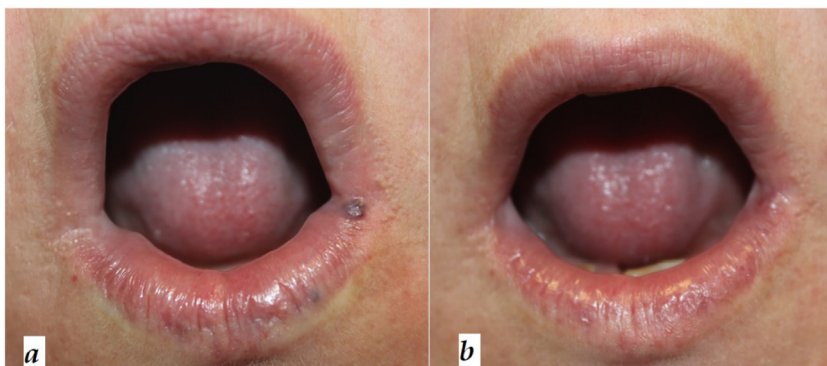


Image 5. a) 0.4 cm papule on the left lateral lip vermilion. b) 2 sessions of 1% Aethoxysklerol intralesional applied.

treatment may not be successful. If the patient has an underlying disease such as uncontrolled diabetes mellitus, it may not make the treatment sustainable, as this may cause post-injection local infection which slows wound healing [7]. We did not include patients with the risks mentioned above, especially with systemic diseases that may negatively affect this treatment. Small lesions and low risk of bleeding was one of the important factors in the choice of treatment in this study.

All of these methods as surgical excision, laser therapy, cryotherapy is available for venous lakes treatment. Considering in cosmetical aspect, skin atrophy, hyperpigmentation, hypopigmentation are undesirable side effect in patient [11]. In this study, we performed intralesional 1% polidocanol located within the venous lake by application of the venous blood with 1 cc insulin syringe needle. According to previous studies, it is difficult to make an exact comparison between them, but the results that we achieved with this treatment were better, and our number of cases was higher than in other studies. Before-and-after photographs are provided to illustrate the effectiveness objectively. In addition to this technique, we chose a subjective scale to indicate patient satisfaction.

A Visual Analogue Scale (VAS) is a measurement instrument that tries to measure a characteristic or attitude that is believed to range across a continuum of values and cannot easily be directly measured. It is often used in epidemiologic and clinical research to measure the intensity or frequency of various symptoms. VAS is a line that is mostly 10 cm long, horizontal or vertical, starting with no change in complaints and ending with complaints completely regressed [12]. VAS has been a successful assessment method for our studies in deciding treatment effects.

7. Conclusion

In conclusion, although there are many treatments available for the elimination of venous lake lesions. Based on our experience, sclerotherapy is safe and effective modality for the treatment of venous lakes resulting excellent therapeutic and cosmetic outcomes in patient. Risk of complications is very low comparing with the other method.

Declaration of Competing Interest

The authors report no declarations of interest.

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Ethical approval

All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Consent

Written informed consent was obtained from the patient for publication of this case series and accompanying images.

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Author contribution

Study concept and design: Dua Cebeci.

Data collection and interpretation: Dua Cebeci.

Interpretation and organisation of figures: Dua Cebeci, Şirin Yaşar.

Writing the paper: Dua Cebeci.

Critical revision of the manuscript for important intellectual content: Dua Cebeci, Seide Karasel, Şirin Yaşar.

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