EUROPEAN INTERNATIONAL JOURNAL OF MULTIDISCIPLINARY RESEARCH AND MANAGEMENT STUDIES

VOLUME03 ISSUE10
DOI: https://doi.org/10.55640/eijmrms-03-10-04 Pages: 17-21

METHODS FOR ELIMINATING VARIOUS FACIAL DEFORMATIONS USING LIPOPILLING METHOD

I.O. Nigmatov
Researcher, Tashkent Medical Academy, Uzbekistan

ABOUT ARTICLE

Key words: Ipofilling, pathological scars, high-intensity laser radiation.

Received: 01.10.2023
Accepted: 06.10.2023
Published: 11.10.2023

Abstract: This article provides the results of eliminating scar deformities of the face and body using lipofilling . There were 2 groups of patients: the first group included 12 patients whose skin scars were localized within the dermis and did not affect the subcutaneous fat layer. Second group: 1 4 patients with atrophic scars of the skin and subcutaneous fat layer after injuries and surgical interventions. For the treatment of these patients, the method of autologous fat transplantation was chosen - lipofilling. Outcomes were assessed at 3 months and 9 months. The degree of survival of the autologous fat graft was assessed visually by the quality and type of scar deformities, as well as by ultrasound diagnostics by measuring the thickness of the subcutaneous fat layer over time. Treatment results were assessed according to clinical groups. Good and satisfactory results of surgical treatment, taking into account the additional exposure to high-intensity laser radiation, were observed in 7–2 % of patients in the first group. In the second group, good and satisfactory results were obtained in all patients.

INTRODUCTION

Every year, specialists pay more and more attention to aesthetics in surgery. This is also due to the increase in the number of plastic surgeons and the high demands of patients. The result of any surgical intervention is ultimately assessed by the patient based on the quality of the postoperative scar. The problem of pathological scarring remains extremely relevant today [2]. Depending on the extent and location, pathological scars cause various organic and functional complications (limitation

of joint function, pain and other pathological conditions), as well as cosmetic defects that initiate mental imbalance in patients.

As a result of severe injury or extensive surgery, not only the skin, but also the subcutaneous tissue may be subject to scar deformation. Reconstruction of the subcutaneous layer can be achieved through autologous fat transplantation. The properties of fat autograft as a filler have been known for a very long time. Recent scientific research has shown that the injection of fatty tissue into the area of scars accelerates their healing. Fat is practically indispensable for the correction of various types of scars (for example, retracted scars) in the area of the mammary gland after its removal. Using a fat autograft, it is possible to fill almost all “cavities” and correct unevenness, both on the face and on the body.

The first mentions of lipofilling appeared more than 100 years ago. In 1889, Van der Meulen described the first autologous fat grafting. The procedure consisted of free autotransplantation of fat and omentum between the liver and diaphragm. In 1893, the German surgeon Gustav Neuber (1850–1932) published the first article on fat grafting. He successfully transplanted fat obtained from the patient's upper limb to the inferior orbital rim to correct scar retraction following osteomyelitis [1]. Two years later, another German surgeon, Vincenz Czerny (1842–1916), reported the first transplantation of a lipoma from the gluteal region to the left mammary gland to restore volume after partial resection of the gland and obtained a stable result. In the 19th century, fat tissue transplantation seemed technologically complex and labor-intensive. And interest in fat transfer (lipofilling) faded away for a while. Scientists were looking for a universal filler. At different times they included paraffin, lamb fat, silicone, and hyaluronic acid. But none of the fillers turned out to be effective and safe at the same time [6].

Currently, lipofilling is experiencing its rebirth, and many studies indicate that a universal filler has been found [3].

MATERIALS AND METHODS

The clinic has experience in the surgical treatment of 22 patients with defects in the subcutaneous fat layer and cicatricial deformities of the skin after surgical interventions or a severe form of conglobate (confluent) acne with a history of scarring. This group of patients in the period from August 2016 to August 2017. Treatment was performed using the lipofilling method. The age of the patients ranged from 27 to 53 years. The extent and depth of the scars varied.

Distribution by reason of treatment: 12 patients with post-eruptive scars (post-acne), 1 4 with soft tissue defects after operations, of which 11 with defects of the face and neck and 5 with defects on the body. The operations that caused the deformities were performed more than a year ago. After rejuvenating operations on the face, 9 patients, after liposuction of the thighs, 3 patients. In the remaining 4 patients, scar deformities arose as a result of previous injuries.

In the preoperative period, all patients underwent a comprehensive examination with clinical tests, photo analysis, and ultrasound examination in case of subcutaneous fat deficiency. The patients were divided into two groups depending on the initial clinical picture. First group: 6 patients with post-eruptive scars, in whom the skin scars were localized within the dermis and did not affect the subcutaneous fat layer (patients with a history of conglobate acne); second group: patients with atrophic scars with a deficiency of the underlying subcutaneous fat layer after injuries and surgical interventions. Patients of the first group had previously received treatment in other clinics aimed at reducing the severity of scars using fillers based on hyaluronic acid, without effect. Patients of the second group did not receive treatment for deformities. Upon admission to the clinic, patients were concerned about aesthetic defects and psychological disorders. No functional disorders were identified in the patient groups.

For the treatment of these patients, the method of autologous fat transplantation was chosen - lipofilling [1, 4, 7]. Traditional areas of the body for this method were chosen as the donor zone: the lumbar and hypogastric zone. The procedures were performed under local anesthesia with a working solution of lidocaine 0.25% with epinephrine 1:100000 in an operating room, accompanied by an anesthesiologist. During the operation, blood pressure, pulse, and partial pressure of oxygen were monitored. After infiltration anesthesia of the donor site with a 1.8×150 mm infiltration cannula and exposure, adipose tissue was collected by lipoaspiration. The volume of lipoaspiration varied depending on the task. The minimum volume was 10 ml of fat autograft and the maximum was 60 ml. The autograft was collected using a special cannula: 3-hole collection cannula. 2×100 mm. After washing and settling the lipoaspirate, it was divided into 2 fractions: the actual fat cells suitable for transplantation and the washing water mixed with blood and stroma. Using a special LUERxLUER transfer adapter, fat cells were placed into 1 ml syringes. And through special cannulas for microinjections 1.1×70 mm were introduced under the scars into the subcutaneous fat layer of the patients of the second group. For patients of the first group with post-eruptive scars after preparation, the autologous fat graft was emulsified through a three-way anesthetic tap andfiltration through syringe filter 200 microns. After this, the fat emulsion was injected under the skin in the projection of the scars with a 31G needle [7].

RESULTS

The effectiveness of treatment was assessed after 3 and 9 months, according to the clinical groups. The degree of survival of the autologous fat graft was assessed visually by the quality and type of scar deformities, as well as by ultrasound diagnostics by measuring the thickness of the subcutaneous fat layer over time. An analysis was made of early postoperative complications and long-term results of the operations performed.

Thus, in the early postoperative period, side effects were observed in 2 patients from the first group and 3 patients from the second group. These were significant swelling, ecchymosis and pain that required additional drug therapy. In the late postoperative period, complications were noted in 3 patients: uneven contour - 2 patients, lack of effect - 1 patient. Long-term results were assessed in 2 stages: after 3 and 9 months. In patients of the first group, the results were assessed by analyzing photographs before and after treatment and filling out a treatment success scale. In patients of the second group, an ultrasound examination was additionally performed. The aesthetic result of the operation and the degree of cosmetic impairment of the donor area were also taken into account. Good and satisfactory results of surgical treatment, taking into account the additional impact of high-intensity laser radiation, were observed in 75% of patients in the first group. In the second group, good and satisfactory results were obtained in all 100% of patients. The use of high-intensity laser radiation was necessary to even out skin texture and eliminate erythema[2].

Autologous fat graft injections have resulted in both aesthetic and functional improvements[5]. Although, upon presentation, patients did not note dysfunction. The skin in the injured area became softer and more elastic, the color also improved, it became closer in color to the surrounding tissues.

CONCLUSIONS

The use of lipofilling method for the correction of atrophic scars of the skin and underlying subcutaneous fat has a significant advantage in comparison with classical methods - local plastic surgery. For patients with post-eruptive scars, the lipofilling method is practically the only low-traumatic and effective treatment method. The methods of laser ablation and deep peeling used are traumatic and not always predictable. Low trauma, short rehabilitation period, low cost of the procedure and satisfactory results are advantages when choosing a method of treating pathological atrophic, post-eruptive scars of the skin and the underlying subcutaneous fat layer [7–9].

REFERENCES

1. Ivanov V.G. Autotransplantation of adipose tissue in reconstructive and plastic surgery. New possibilities of "old" material.//Oncology Issues/ Fedosov S.I. -M, 2015.-N 3.-P.460-466
2. Ivanov Yu.Yu. // Autotransplantation of adipose tissue - lipofilling. - Experimental and clinical dermatocosmetology, 2011.-N 6.-P.19-31
3. Grishchenko S.V. Modern possibilities of free autotransplantation of tissues in reconstructive surgery of the eyelids and periorbital region / Vissarionov V.A. - M: Bulletin of Restorative Medicine, 2015.-N 2.-P.7-13
4. Karpyuk V.B. Comparative assessment of cell viability of aspirated adipose tissue. Methodological aspects of lipofilling, Lavreshin P.M. // M. -Annals of plastic, reconstructive and aesthetic surgery, 2014.-N 3.-P.57-63
5. Nadtochiy A.G., Grishchenko S.V. // Change in the thickness of the soft tissues of the zygomatic cheek area after lipofilling. -Dentistry, 2016.-N 1.-P.49-54.
6. Osipov A.A., Suvorova A.V., Trubnikov P.N. On the issue of pathogenesis and biomodeling of keloid scars // Pediatric surgery. – 2001. – No. 4. – P. 34–36.
7. Jasper MEH /Sustainable effectiveness of single-treatment autologous fat grafting in adherent scars// Wound Repair Regen. 2017 Apr;25(2):316-319.
8. Klinger M. /Autologous fat graft in scar treatment/ J Craniofac Surg. 2013 Sep;24(5):1610-5.
9. Marco Klinger /Autologous Fat Graft in Scar Treatment// Journal of Craniofacial Surgery, 2013; 24(5):1610