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A retrospective study on liquid injectable silicone for lip augmentation: Long-term results and patient satisfaction

Rony A. Moscona [a,*], Lucian Fodor [a,b]

[a] Department of Plastic and Reconstructive Surgery, Rambam Health Care Campus, Haifa, Israel
[b] Department of Plastic Surgery, First Surgical Clinic, Emergency District Hospital, Cluj-Napoca, Romania

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Summary Various injectable fillers are used for soft-tissue augmentation, including liquid injectable silicone [LS]. This study evaluates patient satisfaction and long-term results after [LS] for lip augmentation. A total of 179 patients, who received medical grade [LS] for lip augmentation, were included in the study. The microdroplet technique was used in all cases, and not more than 1 cc per lip per session was injected. The follow-up period varied from 3 years to 7 years. The long-term results (3–7 years), satisfaction level and complications were evaluated.

As many as 171patients had upper lip injections and most had 1 cc silicone injected. Eighty-seven had lower lip injections. Eight-five percent of the patients considered having excellent or good results. Most (76%) patients considered their lips to be as soft as before treatment. No complications were recorded for 91.1% of the patients. Complications encountered by the rest were minor and temporary, such as ecchymoses and haematoma in 6.2% and invisible but small palpable nodules in 2.2%. In our experience, the injection of [LS] by the microdroplet technique is safe for a period of 3–7 years, gives high satisfaction to the treated persons and has minimal complications.

Various injectable fillers have been used for soft-tissue augmentation. Some are temporary, such as collagen, hyaluronic acid, poly-L-lactic acid, calcium hydroxyapatite microspheres, polyacrilamide, and polymethylmethacrylate, or permanent, such as bio-alcamide and silicone. Silicone belongs to a family of polymers based on the element silicon. According to the degree of polymerisation, the viscosity of silicone varies.[1] The liquid injectable silicone [LS] is available as polymethylsiloxane for medical purposes. [LS] is odourless, colourless, non-volatile and oily to touch.[2] The substance is not altered by storage at room temperature, and it is not carcinogenic or teratogenic.[3,4] Highly purified injectable silicone is approved by the Food and Drug

* Corresponding author. Rambam Health Care Campus, 8 Ha'Aliyah Street, Haifa 35254, Israel. Tel.: +972 577 672606; fax: +972 4 8245007.
E-mail address: rmoscona@zahav.net.il (R.A. Moscona).

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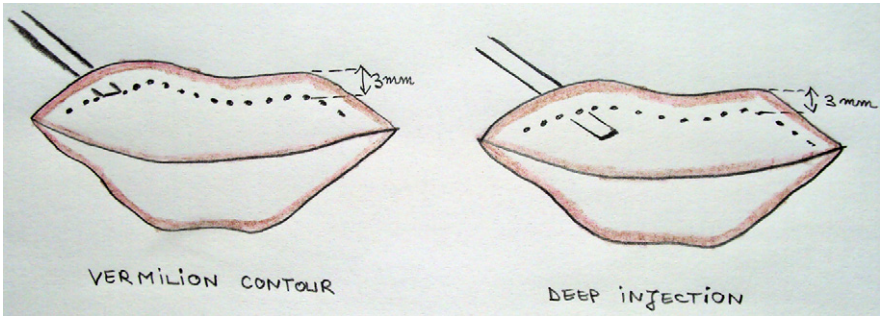

Figure 1 Injection technique.

Administration (FDA) for postoperative retinale tamponade.[5–7] In the literature, [LS] is mentioned for correcting facial scars and rhytids, for augmenting earlobes, lips, nose and chin, and for contouring various depressions.[2] Recently, it was successfully applied to correct faecal incontinence[8,9] and to augment the bladder neck, increasing urethral resistance for patients with urinary incontinence.[10] [LS] has proved to be effective in reducing the risk of ulceration when injected in the diabetic foot.[11,12] According to Orentreich,[2] [LS] is contraindicated for breasts, eyelids, cystic lesions and inflamed or infected sites.

Materials and methods

This study investigated the long-term results after [LS] for lip augmentation in patients with at least 3 years of follow-up. A questionnaire was sent to 257 patients who underwent the procedure more than 3 years ago. Of these, 179 patients completed the questionnaire and were included in the study. All patients had been treated with the same protocol.

After a detailed explanation of the technique, results, complications and other treatment options, written informed consent was obtained from all patients. Photographs were taken before the procedure. A lip block was obtained by injecting lidocadren (lidocaine with adrenaline 1:100 000) in the gingival sulcus, 2 cm from the midline for the upper lip. A mental nerve block was used for the lower lip. Siluron-1000 (Fluoron GMBH — ultrapurified polydimethylsiloxane) was injected in all patients using a 1-cc Luer-Lok syringe. The injected silicone had a viscosity of 1000 centistokes. The external area of the lip was cleaned from makeup and then made aseptic with chlorhexidine. The patient was placed in the supine position. Under a 2.5-magnifying glass and using a 25-gauge needle, the [LS] was injected using the micro-droplet serial puncture technique.[2] The needle was inserted into the tissue to a depth of more than 3 mm and small amounts of silicone were injected along the vermilion line for the beginning. Once the lip border attained a better contour, the rest of the material was injected by multiple punctures into the deep part of the lip (Figure 1). Not more than 1 cc was injected in any one session. Massage was applied to the lip at the end of the procedure, and cold packs were used for 5—10 min. No antibiotics were prescribed. According to the volume desired, the injection sessions were spaced at least 1 month apart.

A questionnaire was designed for the patients to evaluate the following parameters: age, time of injection, location (upper or lower lip), volume injected, satisfaction level, softness of the lip, willing to recommend the treatment to friends and complications encountered. The satisfaction level and softness of the lips was evaluated on a 1—5 point Likert scale as following:

A) Satisfaction
1. The result is worse than before
2. No improvement
3. Mild improvement
4. Good result
5. Excellent result

B) Lip softness
1. Soft as it was before
2. Minimal hardness of the lip in localised areas
3. Minimal hardness over the whole injected area
4. Moderate hardness
5. Very hard

Results

All studied patients were females and most were over 20 years of age (Table 1). The follow-up period varied from 3 years to 7 years. Most patients had upper and lower lip injections; 171 patients had upper lip injections (Table 2)

Table 1 Age distribution

Age (years)	Frequency	Percent
<20	2	1.1
20—30	64	35.8
31—40	54	30.2
>40	59	33.0
Total	179	100.0

Table2 [LS] to the upper lip

Volume injected	Patients	Percent
</= 1 cc	125	69.8
2 cc	36	20.1
3 cc	9	5.0
>3 cc	1	.6
None	8	4.5
Total	179	100.0