

THE USE OF PHOSPHATIDYLCHOLINE FOR CORRECTION OF LOCALIZED FAT DEPOSITS

*Patrícia Guedes Rittes, MD
Clínica Patrícia Rittes
São Paulo, SP, Brazil*

ABSTRACT

BACKGROUND

Subjects with localized fat deposits commonly receive suction lipectomy as a cosmetic procedure. A new office procedure for the correction of superficial fat deposits was applied in 50 patients by the injection of phosphatidylcholine (PC).

METHODS

The method consists of using a 30-gauge, one-half-inch insulin needle to inject approximately 5 mL (250 mg/5 mL) of PC into the fat, distributing it evenly in a 80-cm² area. Pre- and post-treatment photographs were taken for technical planning and analysis of the results long-term.

RESULTS

A clear improvement occurred in all 50 patients, with marked reduction of the fat deposits without recurrence over a 2-year follow-up period, and no subsequent weight gain occurred.

CONCLUSIONS

The injection of PC into fat deposits is a simple office procedure that can sometimes postpone or substitute for surgery and liposuction.

INTRODUCTION

A new and simple technique for treating fat deposits by the injection of phosphatidylcholine (PC) is described in this article.

Liposuction is one of the most commonly performed cosmetic procedures for the treatment of minimal to moderate localized fat deposits.¹ Adverse effects and surgical risks are a concern to both physician and patient when treating these

deformities by surgical resection or liposuction. The safety of the procedure, patient selection, complications, and results have been addressed elsewhere.

I have been using this new PC injection technique since 1995, achieving very good results. At first, only fat pads² were the focus of this procedure, which was introduced to the scientific community at the Dermatologic Brazilian Congress in 1999 and published by *Dermatologic Surgery* in April 2001. Today, localized fat is the target of this treatment, and due to the excellent results and minimal complications or adverse effects, this procedure has proved to be extremely effective in contouring and remodeling superficial fat areas in the arms, abdomen, thighs, and neck.

Pre- and post-procedure photographs of the cases studied document this new method. Patient satisfaction and the absence of recurrence were the best evaluators of the results. The intervals will be discussed further in the methods section. The procedure is simple and can be done in the office.

PHOSPHATIDYLCHOLINE (Lipostabil)

Various studies have reported the use of PC (Lipostabil) for the reduction of systemic levels of cholesterol and triglycerides.^{3,4} PC is a bile component and is responsible for the emulsification of dietary lipids.⁵ However, a study by Bobkova⁶ verified that on increasing PC, cell membranes showed the following effects: receptor properties improved, sensitivity to insulin was augmented, and lipolysis was accelerated. There was a marked reduction of atheromatous plaques and the levels of aortic cholesterol without a reduction in plasma cholesterol levels. In other studies Lipostabil was employed intravenously in patients with cardiac ischemia.⁷

The objective of this study is to improve corporal contour by reducing fat deposits. Our intention was to obtain better cosmetic results in those patients unsuitable for or wanting to avoid surgery.

Preoperative Analysis and Patient Selection

Preoperatively, it is essential to discuss the patient's expectations objectively to ensure they are realistic and achievable. Evaluation of the size and location of the fat deposits is necessary. The individual evaluation of each case is extremely important; patients must be informed of the results that can be reasonably expected with this technique, and care must be taken not to promote false expectations.

This technique is indicated for all patients with fat deposits not due to obesity and especially for those patients for whom liposuction or a surgical procedure is impossible due to surgical risks. When selecting patients, those of ideal weight (not obese) and only those with localized fat deposits were chosen. In some cases a patient had some fat excess only in the area above the waist but with ideal weight from the waist down (for example, patients on chronic corticosteroid therapy). Only patients over 25 years old were accepted because until this age the organic metabolism works at 100% of its capacity.

The patient should be informed that this method treats only localized fat deposits, which are different from obesity and loose skin.

Contraindications

- Obesity. This procedure is indicated only for small fat deposits; it is not a slimming treatment
- Patients under 25 years old (explained above)
- Pregnancy

The use of PC should be restricted to small, localized fat deposits, with the same indications as for liposuction. It is not indicated for obese patients because it is not a slimming treatment, with a few exceptions, such as alterations of the body contour or obesity caused by a chronic use of systemic corticosteroid therapy.

Informed consent was obtained from all individuals, and this study conformed to guidelines of the 1975 Declaration of Helsinki.

MATERIALS AND METHODS

Start the procedure with the patient seated or lying down, depending on the site to be injected. The method consists of using a 30-gauge, one-half-inch insulin needle to inject approximately 5 mL (250 mg/5 mL) of PC into the fat deposits,

distributed evenly in an 80-cm² area. The solution is injected into the fat deposits in the abdomen, neck, arms, or thighs (the portion of the leg between the hip and the knee), based on individual needs. Local anesthetics are unnecessary.

Immediately after application, infiltrative edema occurs, with local erythema and a mild burning sensation, usually lasting for 15 minutes. Swelling and redness at injection sites occur during the next 6 hours and last for about 72 hours. Nodule formation and hematomas can occur and may take 15 to 30 days to resolve.

We studied 50 patients, 40 women and 10 men, ages 25 to 60 years, with fat deposits of various sizes. Injections were applied at intervals of 15 days as follows:

- 35 cases with 4 treatments (70%)
- 10 cases with 2 treatments (20%)
- 5 cases with 1 treatment (10%)

This time interval was necessary for the edema from the injection to completely disappear. The need for additional injections was determined by the fat volume.

The solution is evenly distributed. By observing and mentally calculating, the area to be treated is divided in 6 parts, and then injected with approximately 0.8 mL in each part, distributing the remaining 0.2 mL of substance in areas as needed. It is apparent that the substance remains in the treated area because immediately after injection, localized swelling and some erythema occur for about 48 hours, but not invading any other distant site.

Tape measurements were not done due to the difficulty in using a tape measure precisely; if not placed accurately (above or below the previous tape measurement) measurements are imprecise and not comparable. Also, in the premenstrual period, women may have body measure changes due to fluid retention, which is not significant. That is why photographs were taken, to give a more accurate visualization of before and after status.

The number of treatments depended on physician and patient satisfaction. According to the results obtained, due to the appearance of the remaining fat deposits, the physician decided the need for further injections.

Complications

No complications were observed beyond the symptoms described above, such as bruises, edema, and erythema that lasted from 48 to 72 hours, and the appearance of postinflammatory nodules, which disappear within 30 days at the most. No atrophy occurred.

Long-Term Follow-Up

Long-term follow-up has reached 4 years, with no return of localized fat deposits as long as there was no weight gain over 4 kg (11 pounds).

RESULTS

Cosmetic improvement occurred in all patients with fat deposits. The amount of fat reduction was not tape-measured but photographs show the results (see Figures). Patients did not show a return of the local fat for approximately 4 years, but the treatment can be repeated if necessary. When there is a fat increase, despite gaining or not gaining weight, the procedure can be repeated. In the cases mentioned in the protocol, no repeat treatment was performed. At this time more than 500 patients have been treated.

DISCUSSION

The final results are similar to both liposuction and surgery. Until now, the only treatment has been liposuction and/or surgery. This study provides a simple, rapid office procedure without surgical risks. The cosmetic results are satisfactory both from the patients' and the dermatologist's points of view.

Patients were followed for 4 years with no return of the local fat, as long as no weight gain over 4 kg occurred. In treating more than 500 patients, not even a single case of atrophy or complications were observed.

Serology

Serologic studies were not done in these cases, but Bobkova et al⁶ studied the effects of Lipostabil-forte containing unsaturated fatty acids on serum lipid concentrations, plasma and erythrocyte lipid and phospholipid fractions, immunoreactive insulin levels, and thyroid hormone levels in 30 patients with coronary heart disease. During treatment a statistically significant reduction in serum triglycerides, an increase in relative erythrocyte phospholipid levels, and an increase in plasma and erythrocyte PC levels were seen in all patients within 1 month and, in some patients, at 3 and 6 months. A reversal of hyperinsulinemia and improvement of thyroid function were also noted.⁶

Animal studies have shown that the maximum nontoxic intravenous dose of lecithin (purified soya phospholipids containing 75% to 80% PC), in mice, rats, and rabbits was 4, 2, and 0.5 g/kg, respectively.⁸ The maximal nontoxic subcutaneous dose for in mice, rats, and rabbits was 10, 4, and 1 g/kg, respectively.⁹

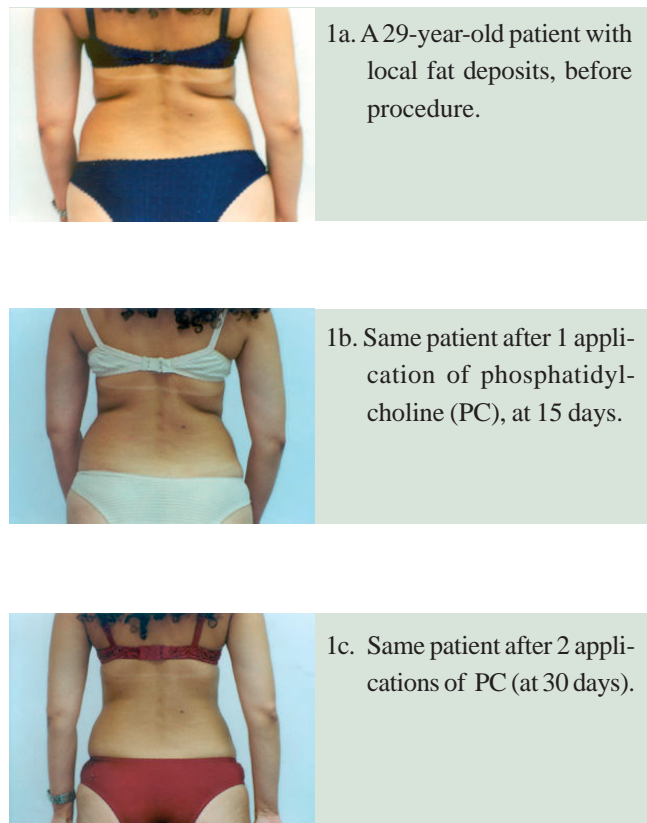
CONCLUSIONS

This technique for treating fat deposits by the injection of phosphatidylcholine (PC) in appropriately selected patients has been shown to have the following results.

- It does not induce skin laxity.
- There is a natural postoperative appearance without a surgical "look."
- Surgical or anesthetic risks are eliminated. It is suitable for patients with an intense fear of hospitalization.
- It is a rapid office procedure, eliminating the need for hospitalization.
- Patient satisfaction is good, there are no skin scars or irregularities, and the cosmetic results are good.
- There is less postoperative discomfort than with surgery.

I have been performing this technique for the past 4 years without any complications. Recurrence or skin laxity was not noted after treatment. Hopefully, this technique will be of additional help to physicians and surgeons in the clinical approach to these deformities that are sometimes so vexing to patients.

FIGURES





2a. A 57-year-old patient with local fat deposits due to cortisone chronic use, before procedure.



2b. Same patient after 2 applications of PC (at 30 days).



2c. Same patient after 4 applications of PC (at 60 days).



2d. Same patient after 8 applications of PC (at 120 days).

REFERENCES

1. Markey AC. Liposuction in cosmetic dermatology. *Clin Exp Dermatol.* 2001;26:3-5.
2. Rittes PG. The use of phosphatidylcholine for correction of lower lid bulging due to prominent fat pads. *Dermatol Surgery.* 2001;27:391-392.
3. Warembourg H, Jaillard J. [Clinical trial of Lipostabil in the treatment of diabetic angiopathy.] *Lille Med.* 1968 Jun-Jul;13(6):Suppl 727-731. French.
4. Navder KP, Baraona E, Lieber CS. Polyeny]phosphatidylcholine decreases alcoholic hyperlipemia without affecting the alcohol-induced rise of HDL-cholesterol. *Life Sci.* 1997;61:1907-1914.
5. Montgomery R, Conway TW, Spector AA. *Biochemistry: A Case-Oriented Approach.* 5th ed. St Louis, Mo: The CV Mosby Company; 1990.
6. Bobkova VI, Lokshina LI, Korsunskii VN, Tananova GV. [Metabolic effect of lipostabil-forte.] *Kardiologiya.* 1989 Oct;29(10):57-60. Russian.
7. Pogozheva AV, Bobkova SN, Samsonov MA, Vasil'ev AV. [Comparative evaluation of hypolipidemic effects of omega-3 polyunsaturated acids and lipostabil]. *Vopr Pitan.* 1996;(4):31-33. Russian.
8. Nattermann Phospholipids GmbH. Phospholipids and liposomes, Scientific Publication 2; 1995.
9. Fiume Z. Final report on the safety assessment of Lecithin and Hydrogenated Lecithin. *Int J Toxicol.* 2001;20 Suppl 1:21-45.

Patricia Guedes Rittes, MD

Rua Afonso Bráz, 864 conj. 72 7th Floor

Vila Nova Conceição

São Paulo, Brazil

Phone: 55.11.3045.4167

Website: www.rittesliponet.com

E-mail: www.prittes@terra.com.br

Dr Patrícia Rittes pioneered the use of phosphatidylcholine injections, and she has been a major influence in phosphatidylcholine and mesotherapy aesthetic treatments worldwide.



Subscribe Online!

www.mesotherapyjournal.com

email: info@mesotherapyjournal.com