



Lipodystrophy of Abdominal Pannus: A Severe Complication of Phosphatidyl Choline Injections

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Indian J Plast Surg 2021;54:215–217.

Abstract

Keywords

- injection lipolysis
- phosphatidyl choline
- side effects of PPC

“Injection lipolysis” or “mesotherapy” is done for introducing various substances into deeper layers of the skin with the aim to dissolve subcutaneous fat. However, the safety profile of these chemicals is poorly regulated. Therefore, they may cause side effects or long-term sequelae that can be disastrous for the patient. We present such a case that required surgical management to salvage it and to give an aesthetically acceptable result.

Introduction

“Injection lipolysis” or “mesotherapy” is term used to describe injection of chemicals into the subcutaneous tissues with the aim to dissolve fat. This is marketed as a means to reduce inches or fat bulges without any surgery such as liposuction.

We present a case of a patient who was given phosphatidyl choline (PPC) injections for abdomen and double chin areas for reducing the subcutaneous fat at a skin/weight loss clinic. She presented with severely inflamed, painful nodules in the treated areas. This appeared to be a panniculitis induced by the injected substance. Since the entire skin and subcutaneous tissue were stony hard, the only option available was an excisional surgery: abdominoplasty for abdominal pannus and a direct excision for the nodules in submental area. The specimen showed fat necrosis and granulomas and was reported as “factitial panniculitis.”

The main selling point for practitioners and also the main attraction for patients to go for these treatments is the “nonsurgical” aspect. Who can administer these injections, whether plastic surgeons, dermatologists, or any nurse technician is not regulated in many countries. The areas that can be treated are also not specified. The slack regulation in many countries regarding the dispensing and availability of these injections is a cause for concern. Hence, many patients may

end up with complications and require further intervention to salvage the condition caused.

Case Report

A 50-year-old female patient came to our center with complaints of painful nodules on her belly and neck areas. She gave a history of two sessions of PPC injections being given in her abdomen and submental fat areas 3 months prior at a dermatology/weight loss clinic. The injections were administered at 1 month interval. The total dosage given was not mentioned by her treating doctor.

She developed redness and lumpiness in the treated areas 2 to 3 days after her treatment. She was told that these were normal reactions to PPC injections and would subside eventually. When there was no improvement even after 3 months, she came to our center for a second opinion. On examination, it was found that the treated areas were firm to stony hard and entire abdominal skin showed peau d'orange appearance (► **Fig. 1A and B**). A clinical diagnosis of “abdominal panniculitis” was made. A magnetic resonance imaging was advised, which showed multiple radiodense opacities in the subcutaneous tissues free from underlying muscle. Fine-needle aspiration cytology done was inconclusive and Mantoux test was

published online
June 30, 2021

DOI <https://doi.org/10.1055/s-0041-1731261>
ISSN 0970-0358

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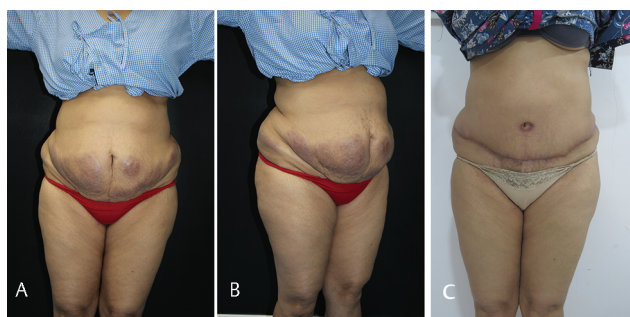


Fig. 1 (A,B) Preoperative views of abdomen showing red, inflamed nodules with peau d'orange appearance. (C) post operative results.



Fig. 2 Submental area with hard nodules (A). Post Operative results (B).

not positive and polymerase chain reaction was not suggestive of atypical mycobacterial infection.

The patient was counseled for an abdominoplasty to get rid of the abdominal hard mass and a direct excision of the submental lump (►Fig. 2A), which was successfully performed (►Fig. 1C and 2B). The histopathology of excised specimen (►Fig. 3) revealed fatty tissue containing foreign body granulomas with associated fat cysts, nonspecific inflammation, and fibrosis. This was reported as “factitial panniculitis” by the pathologist.

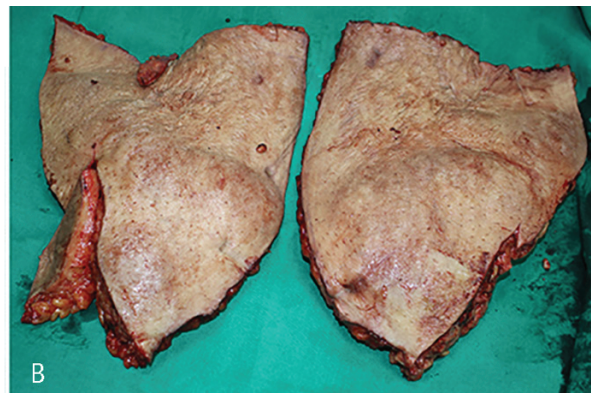


Fig. 3 (A) Excised, calcified nodules from the submental area. (B) Abdominoplasty specimen.

Discussion

Obesity is truly an epidemic today. There is a lot of attraction among patients for nonsurgical fat reduction methods. These include injections of various fat-dissolving chemicals and techniques such as cryolipolysis. This demand has triggered a separate industry based on “mesotherapy” techniques. Pistor¹ is credited with having developed the technique of mesotherapy in France in 1952. In mesotherapy, medications or chemicals are injected intradermally, while in injection lipolysis they are injected in subcutaneous plane.

There are two main chemicals used as fat-dissolving molecules: PPC and sodium deoxycholate. PPC is purported to cause cell wall disruption and release of triglycerides and fatty acids from adipocytes, while sodium deoxycholate is thought to cause cell disruption through its detergent effect.² Successful outcomes are highly dependent on the correct formula and injection technique, as well as proper patient selection.³ The commonly available PPC+DC preparations have 250 mg PPC and 100 mg DC⁴ in each 5 mL. The maximum dosage described is 5 g per sitting and depth 10 mm for abdomen/body and 5 mm for face and neck areas.⁴ Each injection site should be marked using a grid and each spot should not be injected with more than 0.3 mL.

Immediate sequelae such as erythema, induration, nausea, diarrhea, and hives and late complications such as hyperpigmentation, persistent pain and atypical mycobacterial infection, skin necrosis, and contour deformities have been reported with these injections.^{4,5} However, no publication has reported permanent damage to the skin/subcutaneous tissues with formation of hard nodules seen in our patient. We hypothesize that the saponification of fatty acids with calcium deposition in treated tissues may have resulted in formation of hard nodules in our patient. This could be due to inappropriate plane of injection in intradermal plane instead of subcutaneous plane. Once such a change has happened, it is irreversible and may need surgical intervention to salvage the situation.

Conclusion

It is imperative that patients should be appropriately informed and counseled about such complications before promising them any fat loss or inch loss with lipolytic injections. Trying to market these injections as a mirage or miracle cure for obesity should be condemned. A tighter regulatory control over the sale of lipolytic injections along with fear of punitive actions against unqualified practitioners is imperative.

Financial Disclosures

None.

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