

Question

What is the role of vulval infiltration of adipose-derived mesenchymal cells and platelet-rich plasma (aka 'fat transfer') in women with vulval lichen sclerosis?

Answer

Rationale for treatment

Grafting of adipose-derived cells and injection of platelet-rich plasma in the intradermal/intramucosal, sub-dermal, and submucosal tissues of women with vulval lichen sclerosis can lead to tissue regeneration with subsequent symptom improvement and reduced atrophy and scarring according to Casabona and colleagues (1). Lipofilling techniques have been used for other conditions eg post radiotherapy and growth factors released by platelets have an important role in inflammation reduction, angiogenesis stimulation, and collagen III synthesis. In steroid resistant patients with LS, there remain few effective alternative treatments. All the data to-date is based on series from Casabona's plastic surgical team based in Italy (1).

How is the technique carried out?

In women with steroid resistant lichen sclerosis, a blood sample of 50 ml was taken and centrifuged at 1000 rpm for 6 minutes to obtain platelet-poor plasma. After a second centrifugation (3000 rpm for 12 minutes), a platelet-rich plasma was obtained giving approximately 5 ml of platelet-rich plasma). After sedation, liposuction was carried out from a donor region with a 3-mm cannula and a 10-ml syringe. The lipoaspirate was washed with saline solution, decanted, and injected through a 14-gauge needle into the affected area. Finally, 5 ml of platelet-rich plasma was injected into the same areas in the intradermal/intramucosal, sub-dermal, and submucosal compartments. Before injection, platelet-rich plasma was added with 0.5 ml of calcium chloride for platelet degranulation. All patients left the hospital a few hours after surgery.

Where is the evidence of effectiveness?

5% of women with vulval LS have steroid resistant disease and these women should be managed in specialist vulval clinics. In this only series to-date, fifteen female patients with a histologic diagnosis of lichen sclerosis were treated. Ages ranged from 27 to 62 years. All patients had previously undergone steroid therapy, without any significant improvement.

Fifteen days after intervention, symptoms improved: itching and burning disappeared within 1 month. Vulvar skin and mucosa appeared more elastic and soft, with a normal color. Four months after surgery, all patients reported total disappearance of pain and symptoms, and the anatomical features of the vulva were quite normal. All patients regained sexual activity. Patients with severe fibrosis and atrophy underwent the procedure one or two times more, after 3 months, with satisfactory and stable results. Follow-up ranged from 6 to 24 months although the exact numbers of patients are not clear.

The technique is worthy of further evaluation but it is not possible to recommend this technique on the basis of one small case series. The details of what 'therapy' and regime patients used prior to surgery remain unclear and this is an important omission. Not infrequently women with symptomatic LS have been suboptimally managed with topical treatment and it is possibly that symptoms and scarring may have responded to standard LS treatment regimes (2). It is not known whether surgery was supplemented with steroids and emollients post-operatively which may influence outcome.

Is it safe?

Limited data is available on the morbidity following treatment in terms of post-operative complications and function, but fat-transfer at other sites of the body eg breast is considered safe and standard surgical practice in the UK. In Casabona's series no adverse events were observed and all patients had moderate pain in the treated areas for 10 days after surgery.

Is it cost-effective?

Limited data is available on the cost-effectiveness of treatment, but if there is potential clinical benefit there may be reduced need for follow-up at secondary level health care.

References

- 1) Casabona F, Priano V, Vallerino V, Cogliandro A, Lavagnino G. New surgical approach to lichen sclerosus of the vulva: the role of adipose-derived mesenchymal cells and platelet-rich plasma in tissue regeneration. *Plast Reconstr Surg.* 2010 Oct;126(4):210e-211e.
- 2) Cheung ST, Gach JE, Lewis FM. A retrospective study of the referral patterns to a vulval clinic: highlighting educational needs in this subspecialty. *J Obstet Gynaecol.* 2006 Jul;26(5):435-7.