

## Letter



## Comment on “Recurrent late seroma after immediate breast reconstruction with latissimus dorsi musculocutaneous flap”

Bishara Atiyeh<sup>1</sup>, Fadel M. Chahine<sup>2</sup>

*Division of Plastic and Reconstructive Surgery, American University of Beirut Medical Center, Beirut; <sup>2</sup>Department of Plastic Surgery, Trad Hospital Medical Center, Beirut, Lebanon*

**Correspondence:** Fadel M. Chahine

Department of Plastic Surgery, Trad Hospital Medical Center, Mexico street, Clemenceau, Beirut, Lebanon

Tel: +961-3232980, E-mail: Fadel@Chahine.md

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Dear Editor,

Bae et al. [1] reported a case of what they called recurrent donor site seroma after immediate breast reconstruction with a latissimus dorsi musculocutaneous flap. The patient initially underwent surgery in 2008. The suction drain was removed on postoperative day 12. The patient apparently did well until 7 years later (2015) when she presented with a serous collection at the donor site that was successfully drained, and then she presented again 3 years later (2018) with a recurrent collection that necessitated surgical drainage and excision of the seroma capsule.

Seromas are the most common complication at the latissimus dorsi flap donor site, and have been reported to occur in 21% to 79% of cases [2,3]. Seroma fluid is a subcutaneous non-infective fluid collection resembling an inflammatory exudate that invariably collects following surgery in potential dead space. The causes and pathogenesis of seroma are unclear, although it has been postulated that fluid collects at the surgical site due to damage to the lymphatics and capillaries [2]. Seroma most likely occurs due to the release of inflammatory mediators and is aggravated by shearing forces between the cutaneous flap and fascia, particularly with early shoulder mobilization in patients who undergo a latissimus dorsi flap. It has also been suggested that thermal damage to the lymphatics caused by wide thermal spread of the electrocautery dissection can result in lymphorrhea and seroma formation. Axillary node dissection with injury to the lymphatic channels could be another cause of seroma formation, although it is most likely to occur at the site of the reconstructed breast. Postoperative suction drainage is the standard approach. It is

thought to facilitate wound healing through adhesion of the cutaneous flap to the underlying fascia [2,3]. Once the dead space is firmly and permanently obliterated, we do not see how a serous collection could reform.

The authors claim that there is no known way to reliably reduce the risk of seroma formation, and that systematic research is still lacking. They have apparently missed the pioneering comparative study of Tittley et al. [4] in 1997 about preventing latissimus dorsi flap donor site seroma by quilting sutures, with a 0% incidence of seroma formation, as well as several reports on the use of tissue adhesive, triamcinolone application, or external wound compression [2-4].

A randomized controlled trial conducted by Hart et al. [3] to compare the incidence of seroma formation and drain output after latissimus dorsi breast reconstruction with fibrin glue and triamcinolone acetamide compared to the use of donor-site quilting sutures concluded that quilting sutures were significantly more effective. Quilting sutures have been successfully applied to abdominoplasty, and recent evidence has confirmed that deep fixation sutures will eventually make drains obsolete [5]. Drainless abdominoplasty techniques are being adopted by an increasing number of surgeons, and quilting sutures are currently in widespread use to prevent seroma formation following mastectomy.

Most likely, the dead space in the patient Bae et al. described was never initially obliterated. The patient apparently kept on having subclinical small collections. In fact, as reported, a review of the medical history of the patient discussed in this study confirmed that a very small seroma was present at the donor site on chest computed tomography exams performed in 2012 and 2013 that the radiologists and surgeons were unaware of. It seems that the small seroma that was present was exacerbated 7 and 10 years following initial surgery, probably due to an unreported illness, inflammatory condition, or minor trauma. At her last presentation, a serous capsule pouch located in the subcutaneous tissue layer was identified and blood clot-like material was drained. The histologic findings were suggestive of chronic granulomatous inflammation.

It must be recognized that fluid collection to a certain degree is not a complication; it is a natural process following any surgical procedure that surgeons may never be able to prevent. Small collections are usually self-limited and are reabsorbed by the body without pathological sequelae. Only clinically significant seromas that impair wound healing and increase morbidity, risk of infection, and result in pseudocyst formation should be of concern. Well-placed quilting sutures 3–4 cm apart will effectively prevent the formation of clinically significant seromas and what some may describe as recurrent seroma formation.

### Notes

#### Conflict of interest

No potential conflict of interest relevant to this article was reported.

**Author contribution**

Conceptualization: B Atiyeh, FM Chahine. Writing - original draft: B Atiyeh, FM Chahine. Writing - review & editing: B Atiyeh, FM Chahine.

**ORCID**

Bishara Atiyeh <https://orcid.org/0000-0001-8650-491X>

Fadel M. Chahine <https://orcid.org/0000-0002-4215-1347>

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