

## Sulco da alça do sutiã: relato de caso de nova proposta terapêutica com ácido hialurônico injetável

*A new therapeutic proposal for brassiere strap groove correction with injectable hyaluronic acid: a case report*

DOI: <http://www.dx.doi.org/10.5935/scd1984-8773.2024160317>

### ABSTRACT

Brassiere strap groove is a common aesthetic deformity in women with breast hypertrophy, resulting from chronic pressure exerted by brassiere straps on the soft tissues over the trapezius muscle, causing local tissue depression. This condition is typically treated with fat grafting, often performed simultaneously with breast reduction surgery or lipoabdominoplasty. We report the case of a patient with recurrent brassiere strap groove following prior fat grafting, successfully corrected with hyaluronic acid filler.

**Keywords:** Hyaluronic Acid; Dermal Fillers; Dermatology.

### RESUMO

O sulco da alça do sutiã é uma alteração estética comum em mulheres com mamas hipertrofiadas e de grande volume, causado pela pressão crônica da alça do sutiã nos tecidos moles na região acima do músculo trapézio, causando deformidade com depressão local. É comumente tratado com enxerto de gordura, no mesmo tempo cirúrgico da redução mamária ou lipoabdominoplastia. Relatamos aqui um caso de preenchimento com ácido hialurônico no sulco da alça do sutiã que havia recidivado após tratamento prévio com lipoenxertia.

**Palavras-chave:** Ácido Hialurônico; Preenchedores Dérmicos; Dermatologia.

## Case report

### Authors:

Rafaela Bressan Werle<sup>1</sup>

Juliana Fonte de Souza Bedin<sup>1</sup>

<sup>1</sup> Clínica de Dermatologia Dra. Juliana Fonte (private practice), Porto Alegre (RS), Brazil.

### Correspondence:

Rafaela Bressan Werle

E-mail: [rafabressanwerle@hotmail.com](mailto:rafabressanwerle@hotmail.com)

**Funding:** None.

**Conflicts of interest:** None.

**Submitted:** 30/10/2023

**Accepted:** 11/03/2024

### How to cite this article:

Werle RB, Bedin JFS. A new therapeutic proposal for brassiere strap groove correction with injectable hyaluronic acid: a case report. Surg Cosmet Dermatol. 2024;16:e20240317.



## INTRODUCTION

Large breasts can cause postural changes, back and neck pain, stretch marks, intertrigo, and even psychological discomfort.<sup>1</sup> In addition, the weight of the breasts is supported by brassiere straps, creating constant pressure on the shoulders. Over time, this chronic force exerted by the straps on the shoulders, especially in women with breast hyperplasia, may lead to the development of “brassiere strap groove,” an evident depression in the soft tissues above the trapezius muscle, where the bra straps rest.<sup>2</sup> In more severe cases, it may cause aesthetic discomfort. This condition is typically corrected with autologous fat grafting, often performed simultaneously with breast reduction surgery or lipoabdominoplasty. In this report, we describe the case of a patient with recurrent brassiere strap groove following prior fat grafting, successfully corrected with hyaluronic acid filler.

## METHODS AND RESULTS

Before starting the treatment, the patient signed an informed consent form and was photographed (Figures 1 and 2). A topical anesthetic (4% lidocaine cream) was applied to the treatment area, followed by antisepsis with 2% alcohol chlorhexidine. The bra strap groove defect on each side was marked, and small incisions were made to introduce an 18 G x 70 mm cannula (at the dorsal region, central but external to the marked area). High G-prime hyaluronic acid (Sofiderm® Derm Sub-skin 10 mL, Aeskins Pharmaceuticals, Santana de Parnaíba, SP, Brazil) was injected, 5 mL per side, starting with a small bolus in the center and followed by retrograde injections in a fan-shaped pattern. Manual molding was then performed to ensure even distribution of the product. The procedure was quick, without complications, and the results were immediately visible (Figure 3).

## DISCUSSION

Brassiere strap groove is a contour deformity between the neck and shoulder caused by chronic pressure from brassiere straps. Although it is more common in women with large and heavy breasts, it can occur in anyone who wears a bra. This deformity may also present unilaterally in cases of unilateral mastectomy. The contour between the neck and shoulder starts at the neck-body junction, continues downward and laterally, and ends at the shoulder. Under normal conditions, there are no depressions along this contour. However, in women with breast hypertrophy who wear ill-fitting brassieres (eg, with thin straps), a brassiere strap groove may develop. Anatomically, the brassiere strap groove is delimited by the skin (superiorly), scapular spine (inferoposteriorly), clavicle (inferoanteriorly), deltoid muscle (anteriorly), acromioclavicular junction (laterally), transverse part of the trapezius muscle (posteromedially), and deltoid muscle (posterolaterally). Between the insertion lines of the trapezius and deltoid muscles, an imaginary line crosses the scapular spine and clavicle. Brassiere strap grooves occur medially to this imaginary line in women with breast hypertrophy.<sup>1</sup>



**FIGURE 1:**  
Left side,  
pretreatment



**FIGURE 2:**  
Right side,  
pretreatment

In 2014, Ergün et al. classified brassiere strap grooves into three types. In type 1, or mild deformity, there is a minimal indentation that is mostly perceived by the physician than the patient. In type 2, or moderate deformity, the contour irregularity is more noticeable, as the depth of the depression can measure up to 0.5 cm below the imaginary line, with a width of up to 2 cm. In type 3, or severe deformity, the depression is very evident, with a depth of up to 1 cm and a width of up to 4 cm.<sup>1</sup> Brassiere strap grooves can be prevented by wearing properly fitting bras with wide, padded straps, but for cases of breast hyper-



**FIGURE 3:** Immediately after surgery

trophy, breast reduction is the primary treatment. Although surgery alleviates back, neck, and shoulder pain, it does not correct shoulder grooves. Traditionally, brassiere strap grooves have been corrected with fat grafting, using approximately 25 to 40 mL of lipoaspirate, with overcorrection necessary due to necrosis and partial resorption of the graft tissue.<sup>3,4</sup>

The use of hyaluronic acid for body shaping has been gaining popularity, particularly for gluteal and breast augmentation. It is a minimally invasive procedure that does not require general anesthesia or hospitalization, allowing for fast recovery and posing a low risk of severe infections due to limited tissue exposure. Considering that patients seek this procedure for aesthetic reasons, avoiding a hospital setting is desirable. Moreover, hyaluronic acid fillers offer the advantage of predictable outcomes, have reproducible techniques, and can be dissolved with hyaluronidase if necessary.<sup>5</sup> Another advantage of injectable hyaluronic acid is that it can be performed in the initial stages of the shoulder groove. It may be used as a first-line treatment depending on the case and the patient's comorbidities, or as an

alternative in cases of recurrence after fat grafting, as in the case described in this report. Given the anatomy of the treated region and the injection plane, there is minimal risk of severe complications such as arterial occlusion or nerve damage.

Depending on the classification of the groove, a large amount of injected product may be required. To prevent product migration, we recommend that patients wear strapless bras and avoid carrying heavy bags for a month. This treatment can be combined with other procedures for aesthetic enhancement of the neck and breast region, such as pre and postaxillary fat reduction and collagen stimulation. To our knowledge, this is the first reported case of brassiere strap groove correction using hyaluronic acid filler.

## CONCLUSION

Minimally invasive and safe aesthetic procedures that offer quick results are becoming more popular among both physicians and patients. Hyaluronic acid filler for brassiere strap groove correction is another technique that can be refined for broader use in cosmetic treatments. ●

#### REFERENCES:

1. Ergün SS, Gayretli Ö, Kayan RB. Brassiere strap groove deformity: definition and classification. *Aesthet Plast Surg.* 2014;38(2):350-3.
2. Mentz HA, Ruiz-Razura A, Miniel LA. Correction of the bra strap shoulder groove deformity in women. *Plast Reconstr Surg.* 2007;120:2122-2123.
3. Ergün SS, Baygöl EG, Kayan RB, Kuzu İM, Akman O. Correction of brassiere strap grooves with fat injections. *Aesthet Surg J.* 2015;35(5):561-4.
4. Dayal A, Bhatia A, Hsu JT. Fat grafting in aesthetics. *Clin Dermatol.* 2022;40(1):35-44.
5. Hedén P, Sellman G, Von Wachenfeldt M, Olenius M, Fagrell D. Body shaping and volume restoration: the role of hyaluronic acid. *Aesthet Plast Surg.* 2020;44(4):1286-1294.

#### AUTHOR'S CONTRIBUTION:

**Rafaela Bressan Werle**  ORCID 0009-0005-5780-6480

Approval of the final version of the manuscript; study design and planning; preparation and writing of the manuscript; collecting, analyzing and interpreting data; critical review of the literature; critical review of the manuscript.

**Juliana Fonte de Souza Bedin**  ORCID 0009-0006-9563-8710

Author's contribution: Approval of the final version of the manuscript; study design and planning; effective participation in research guidance; intellectual participation in propaedeutic and/or therapeutic conduct of studied cases; critical review of the manuscript.

1Clínica de Dermatologia Dra. Juliana Fonte (private practice), Porto Alegre (RS), Brazil.