



Lateral thoracic fasciocutaneous flap for reconstruction of axillary defects after resection of hidradenitis suppurativa: a series of 10 cases*

Retalho fasciocutâneo torácico lateral para reconstrução de defeitos axilares após ressecção de hidradenite supurativa: série de 10 casos

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■ ABSTRACT

Introduction: Hidradenitis suppurativa (HS) is a chronic follicular inflammation that presents varied clinical features, from isolated small nodules to several abscessed lesions, with formation of fistulas and scars. The axillary region is one of the most frequently affected areas. The objective is to evaluate a series of patients with HS in the axillary region who underwent extensive surgical excision and reconstruction with a lateral thoracic fasciocutaneous flap. **Methods:** A retrospective analysis of the medical records of patients who underwent treatment between 2010 and 2012 was conducted. **Results:** Ten patients were operated, of whom two had bilateral involvement, totaling 12 procedures. The mean progression time before the surgical indication was 38 months. The mean defect size after the resection was 10 x 9 cm. The mean size of the flaps was 15 x 10 cm. With regard to early complications, two cases of dehiscence (axillary region) and one case of partial epitheliolysis (distal segment of the flap) were observed. **Conclusion:** We observed that dissection of lateral thoracic fasciocutaneous flaps is not technically difficult and does not present significant functional or aesthetic sequelae in the donor area, making it a reliable and versatile option for reconstruction of larger axillary defects.

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■ RESUMO

Introdução: A hidradenite supurativa (HS) é uma inflamação folicular crônica que apresenta quadro clínico variado, desde pequenos nódulos isolados até diversas lesões abscedadas, com formação de fistulas e cicatrizes. A região axilar é uma das áreas mais frequentemente acometidas. O objetivo é analisar uma série de casos acometidos por HS na região axilar, submetidos à exérese cirúrgica ampliada e reconstrução com retalho fasciocutâneo torácico lateral. **Métodos:** Análise retrospectiva dos prontuários dos pacientes submetidos a tratamento no período entre 2010 e 2012. **Resultados:** Dez pacientes foram operados, sendo que em dois havia acometimento bilateral, totalizando 12 procedimentos. Foi observado um tempo médio de evolução antes da indicação cirúrgica de 38 meses. O defeito médio observado após a ressecção foi de 10 x 9 cm. O tamanho médio dos retalhos foi de 15 x 10 cm. Em relação às complicações precoces, foram observados dois casos de deiscência (região axilar) e um caso de epiteliolise parcial (segmento distal do retalho). **Conclusão:** Observamos que a dissecção deste retalho não é tecnicamente difícil e que não apresenta sequelas funcionais ou estéticas significativas na área doadora, sendo uma opção confiável e versátil para reconstrução de defeitos axilares de maior porte.

Descritores: Axila; Pele/lesões; Fístula cutânea; Retalhos cirúrgicos/cirurgia; Técnicas de fechamento de feridas; Hidradenite supurativa.

INTRODUCTION

Hidradenitis suppurativa (HS) is a chronic follicular inflammation that can affect the axillary, submammary, inguinal-crural, and perineal regions, among others. It presents varied clinical features, from small isolated nodules to several abscessed lesions, with high incidence rates of inflammatory process, and fistula and scar formations. It affects females more often than males, at a ratio of 3:1, with greater incidence from the second to the fourth decade of life¹⁻⁶.

The etiology is not fully known, and the most accepted mechanism is occlusion of the terminal portion of the follicular infundibulum due to drainage difficulty^{1,4,7}. As a consequence, follicular duct dilation occurs until its rupture, with the release of fragments of the follicular epithelium and the cells of the bulbar region, generating an inflammatory process. Usually, bacterial cultures yield negative results and patients may not respond to antibiotic therapy. Secondary bacterial infections may occur⁸⁻¹⁰.

The clinical presentation begins normally in puberty, with an insidious onset, and inflammatory and solitary nodules, or a more aggressive onset, with various abscesses and fistulas. The lesions can be initially diagnosed as furuncles; however, they do not present central necrosis, are deeper, and may not present purulent drainage^{11,12}.

The lesions may be painful and remain without drainage for long periods. Complete regression may occur but sequelae are frequent, with large areas of fibrosis, retraction, and even lymphedema^{11,13,14}.

In accordance with the classification of Hurley, HS can be divided into the following phases: phase I, with single or multiple abscesses, without fistula or cicatricial fibrosis, and clinical treatment is possible; phase II, with recurring abscesses/fistulas and scars, with clinical or excisional treatment; and phase III, with multiple interconnected abscesses, fistulas and fibrosis, with extensive excisions being recommended in the areas affected^{2,4,10,11,15}.

The diagnosis of HS is clinical, with no need of complementary examinations, but no criteria have been preestablished. The main differential diagnoses are Crohn disease, donovanosis (granuloma inguinale), acne (nodular-cystic), and other chronic folliculitis^{1,3,7,10}.

OBJECTIVE

The objective of this report was to evaluate a series of patients with HS in the axillary region who underwent extensive surgical excision and reconstruction with a lateral thoracic fasciocutaneous flap, regarding indications, surgical technique, results, and complications.

METHODS

Medical and photographic records of patients who underwent surgical treatment of HS in the axillary region and repair with a lateral thoracic fasciocutaneous flap between 2010 and 2012 at the Irmandade da Santa Casa de Misericórdia de São Paulo Central Hospital, São Paulo, SP, Brazil, were retrospectively analyzed.

The mean time of disease progression (before surgical indication), dimensions of the defect after resection, dimensions of the flap, hospitalization time, and complications (early and late) were analyzed.

Early complications were those that occurred up to 30 days after the operation, and late complications were those that occurred after this period.

In cases with bilateral involvement, the procedures were performed separately with a minimum interval of 30 days.

Surgical Technique

The patient was placed in the dorsal decubitus position, with abduction of the upper limb by 90°, under general anesthesia. Extensive resection of the fibrotic-scar tissue and areas of fistulas was performed en bloc, with a mean margin of 1 cm, including the whole thickness of the subcutaneous tissue (Figure 1).



Figure 1. Bloody area after resection of the left axillary hidradenitis and demarcation of the lateral thoracic fasciocutaneous flap.

After resection, the bloody area was measured to facilitate the demarcation of the flap. The fasciocutaneous transposition flap of the lateral thoracic region was used, up to the submammary region when necessary (Figure 2). The donor area was closed by using planes. Aspiration drainage was routinely performed (Figure 3).



Figure 2. A dissected flap.



Figure 3. Appearance in the immediate postoperative period.

RESULTS

Ten patients were evaluated, of whom two had bilateral involvement, totaling 12 procedures.

The mean progression time before the surgical indication was 38 months. All the patients had already undergone various types of clinical treatment (topical and systemic) and smaller surgeries (partial/sequential resections) but without resolution of the disease (Table 1).

The mean defect size after the resection was 10 x 9 cm, including the skin and subcutaneous tissue in the total thickness. The mean size of the fasciocutaneous flaps was 15 x 10 cm. Primary closure of the donor area was possible in all the cases (Figures 4 to 7; Table 1).

The mean time of resection of the HS was 45 minutes, and the completion of the flap described was 80 minutes. No intraoperative complications occurred, and the mean hospitalization time was 4.3 days.

Table 1. Results.

	Sex		Progression time	Dimensions of the bloody area	Dimensions of the flap	Hospitalization time	Postoperative evolution
Patient	Age (y)	Side	(months)	(cm)	(cm)	(days)	
1	F, 40	R	54	9 x 9	15 x 10	10	Dehiscence resuturing
2	M, 35	L	38	10 x 8	15 x 9	4	Without intercurrences
3	F, 34	BILAT	22	(R) 8 x 9 (L) 10 x 11	(R) 14 x 10 (L) 15 x 10	4 3	Without intercurrences
4	F, 51	R	66	11 x 10	16 x 11	5	Distal epitheliolysis
5	F, 29	BILAT	41	(R) 9 x 10 (L) 10 x 11	(R) 15 x 10 (L) 15 x 11	3 3	Without intercurrences
6	F, 28	L	34	9 x 9	16 x 10	6	Dehiscence Secondary healing
7	M, 37	L	30	10 x 8	15 x 10	3	Without intercurrences
8	F, 43	R	61	10 x 10	16 x 11	3	Without intercurrences
9	F, 46	R	19	11 x 8	15 x 10	4	Without intercurrences
10	F, 39	L	16	9 x 10	14 x 9	4	Without intercurrences

M: Male; F: Female; y: years; R: Right; L: Left; BILAT: Bilateral.



Figure 4. Left axillary hidradenitis: areas of fibrosis and cicatricial retraction.

With regard to early complications, two cases of dehiscence (axillary region) were observed, one of which was resolved with debridement and suturing, and the other was resolved with dressings and secondary healing. One case of partial epitheliolysis (distal segment of flap), about 2 cm, was also observed with spontaneous resolution. No complications related to the donor area were observed.

Regarding late complications, we observed one case of recurrence or residual disease, which was treated with new resection and advancement of the previously used



Figure 5. Bloody area after resection of the left axillary hidradenitis and demarcation of the lateral thoracic fasciocutaneous flap.

flap, and one case of limitation in abduction of the upper limb (due to cicatricial contracture), treated with zplasties and physiotherapy.

DISCUSSION

HS is one of the dermatological diseases that greatly affect the patient's quality of life. The etiological factors include obesity, diet rich in sugar and milk, smoking, use of illicit drugs, and genetic predisposition^{12,13}.

Various clinical and surgical treatments have been described^{1,2,4,14-17}. Regardless of disease stage and the treatment chosen, patients should receive general guidelines, including avoidance of skin damage to the regions affected (e.g., avoidance of rubbing or the



Figure 6. Appearance in the immediate postoperative period.



Figure 7. Appearance at 12 months after operation.

use of tight clothes); use of neutral products for local hygiene; cessation of smoking habit; and weight loss¹⁰⁻¹². Psychological support should also be provided because it is a chronic disease¹³⁻¹⁵.

Phase I Hurley lesions may be treated with topical antibiotic therapy associated or not with oral anti-inflammatory agents and infiltration with corticosteroids. Systemic antibiotics can also be administered^{2,3,4,8}.

Phase II Hurley cases may be treated with systemic antibiotic therapy. Another option is hormonal therapy with antiandrogenic medications. Surgical procedures for partial and sequential resections should also be considered^{2,3,4,8}.

For cases of more-advanced stages, such phase III Hurley lesions, immunomodulators such as infliximab can be used, which have shown favorable results, or corticoid pulse. At this stage, extensive surgical excision is indicated. The morbidity associated to advanced stages is significant^{2-4,8,16-19}.

In the axillary region, repair after extensive resection of areas affected by HS is highly possible. Options include healing by second intention (although it typically progresses in the long term with difficulties in healing and contractures), closing with primary suture, partial skin grafting, and the use of local (cutaneous, fasciocutaneous, and musculocutaneous flaps) or regional flaps (fasciocutaneous and musculocutaneous)¹⁶⁻¹⁹.

In relation to the extension of local treatment of HS cases, Watson²⁰ presented a review of 72 cases and reported a lower rate of reoperation (13%) after extensive local excision and use of a partial skin graft. Paletta¹⁹ also reported a lower rate of reoperation (19%) for reconstruction with local flaps. Rompel and Petres²¹ evaluated 106 patients and reported that the recurrence of the disease is related to the more advanced forms, demonstrating that early and radical excision should be the treatment of choice.

Axillary reconstruction techniques with flaps include scapular and parascapular fasciocutaneous flaps, with pedicles based on the circumflex artery branches of the scapula²². One can use flaps based on perforating vessels of the lateral thoracic artery, with local advancement in double opposing flaps²³ or in forward V-Y flaps²⁴. Flaps based on perforating vessels of the thoracodorsal artery, described by Cabanie et al., can also be used^{25,26}.

Rhomboid skin and fasciocutaneous flaps can safely be used, although their perforating vessels are not specifically identified during the procedure²⁷.

CONCLUSION

The lateral thoracic fasciocutaneous flap is a reliable and versatile option for reconstruction of larger axillary defects, as in the cases presented after the surgical excision of HS. We observed that the dissection of this flap is not technically difficult and does not present significant functional or aesthetic sequelae in the donor area.

COLLABORATIONS

- DFM** Conception and design of the study; analysis and/or data interpretation; statistical analysis; completion of operations; writing of the manuscript and critical review of its content; and final approval of the manuscript
- AHJ** Conception and design of the study; completion of operations; writing of the manuscript and critical review of its content; and final approval of the manuscript

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* Nemer Chidid 2013 Award Winner.