

Risk factors for postoperative complications of Hidradenitis Suppurativa: a review article

Fatores de risco para complicações pós-operatórias da hidradenite supurativa: artigo de revisão

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ABSTRACT

Introduction: Hidradenitis Suppurativa is a chronic inflammatory and relapsing disease. High levels of recurrence can persist even after wide local excision.

Objective: Identify the main risk factors for postoperative complications of Hidradenitis Suppurativa.

Methods: We included journal articles with data from Google, Pubmed, Lilacs, and Scielo, in Portuguese and English, from 2000 to 2021.

Results: The main risk factors that influence postoperative outcomes are related to surgical technique, disease severity, comorbidities, and adjuvant clinical therapy.

Keywords: Hidradenitis suppurativa; Risk factors; Postoperative complications

RESUMO

Introdução: a hidradenite supurativa é uma doença inflamatória crônica e recidivante. Altas taxas de recorrência podem persistir mesmo após ampla excisão cirúrgica local.

Objetivo: avaliar os principais fatores de risco para complicações pós-operatórias da hidradenite supurativa.

Metodologia: foram utilizadas referências em artigos científicos nas bases de dados Google, PubMed, LILACS e SciELO nas línguas portuguesa e inglesa, no período de 2000 a 2021.

Resultados: os principais fatores que influenciam os resultados pós-operatórios estão relacionados a técnica cirúrgica empregada, gravidade da doença, comorbidades dos pacientes e terapia clínica adjuvante.

Palavras-chave: Hidradenite Suppurativa; Risco; Complicações Pós-operatórias

Artigo de Revisão

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INTRODUCTION

Hidradenitis suppurativa (HS) is a chronic inflammatory disease of the apocrine gland, characterized by primary painful nodules that may progress to abscesses, tunnels (winding pathways), fistulas, and scarring. It usually affects the armpits and groin, but it can occur in the chest in severe cases. The disease is associated with a significant reduction in quality of life due to several psychosocial implications.¹

The pathophysiology of HS remains unclear. Its etiology is probably multifactorial, and there is no curative treatment to date.²

HS is associated with significant clinical comorbidities such as diabetes, obesity, and lifestyle habits such as smoking. Comorbidities and lifestyles are recognized risk factors for surgical complications.¹

During the early stages, topical and oral antibiotics are often used. In the more advanced phases, when scarring occurs, systemic immunosuppressants are recommended, although they are not able to remove the scars. Surgical options include incision and drainage, limited excision, and extensive and radical excision (indicated for stage III). Still, some patients may require concurrent medical therapy for disease control.³

Current consensus recommends a combination of surgical treatment with adjuvant therapy. No single therapeutic measure is effective. Multiple surgical techniques have been described; however, surgery may be non-curative in up to 46% of cases due to complications and recurrences.¹

There is still no consensus or algorithm on the best surgical technique to achieve the lowest recurrence rates. Given the socioeconomic impact of HS, identifying factors that influence recurrence after surgery can significantly impact hospital costs and patients' quality of life.⁴

This article aims to review the main postoperative complications and possible associated risk factors.

INFLUENCE OF SURGICAL TECHNIQUE

Hurley stages II and III, with tunnels and scars, are indications for surgical treatment because they are characterized by intense tissue damage that is not easily reversible with clinical treatment associated with biofilms that prevent healing.⁵

The risk of recurrence is higher with simple partial excision than with wide excision. However, it is not always possible to remove the entire affected area in a single step.^{6,7}

Wide excision in chronic cases offers better results and less chance of local recurrence. Ultrasound or MRI in the preoperative period can contribute to the better delimitation of lesions.⁸

Radical excision is the treatment of choice for HS. As Rompel concluded in a study assessing 106 surgeries, the reconstruction method did not influence recurrence, and it should be chosen based on the size and location of the affected area.⁹

Comparison between reconstruction techniques is difficult due to the complex nature of the disease, the different

sequential surgical interventions used (secondary intention, primary closure, grafting, vacuum therapy, fasciocutaneous, or myocutaneous flaps), and variable results in the literature.¹⁰

A retrospective analysis from 1999 to 2011, including 2668 US adults with Hidradenitis suppurativa, found non-curative surgery in more than 50% of cases, representing a significant expense for patients and healthcare providers regarding resource utilization and costs.³

Other observational studies associated the risk of recurrence mainly with the type of surgery. The recurrence rate after wide excision was estimated between 6–38% across different sample sizes (17 to 117 patients). Patients in Hurley stage III had recurrence ranging from 25–80%.²

A retrospective cohort of 75 patients in France, with a total of 115 surgeries for HS, found a higher probability of recurrence in patients with limited local excision and closure in a single surgical procedure, a statistically significant result. It found no association between location and closure type. The risk of recurrence was 35%. Among the patients who presented recurrence after surgery, 81% were convinced that surgery represented the best treatment, and 61% were satisfied even after undergoing a new surgical approach.²

A multicenter retrospective analysis conducted between 2008 and 2018 in the Netherlands, including 107 surgeries in 54 patients, detected 32% recurrence after 30 months of follow-up. Surgical complications that led to surgical re-approach occurred in 2% of cases of primary closure, 0% of cases submitted to secondary intention, 13% of cases of partial thickness grafts, and 15% of cases of fasciocutaneous flaps. The score for functional recovery, esthetics, and satisfaction was lower after fasciocutaneous flaps than primary closure, secondary intention, or partial-thickness grafting ($p=0.03$). Fasciocutaneous flaps were more effective in preventing recurrence; however, they were associated with unfavorable short-term results, especially regarding functional and aesthetic recovery. The study concluded that fasciocutaneous flaps should be reserved for patients with severe and recurrent HS, compromising a large area of skin in the axilla.¹¹

A retrospective review conducted for 35 years (1979 to 2014) included 122 patients who underwent local excision followed by secondary intention. Disease recurrence or reactivation was frequent, with some patients requiring multiple procedures over many years to control symptoms. Despite the healing time of months, many patients learned how to care for their wounds and were usually pain-free after two to three weeks. The study concluded that wide excision followed by secondary intention and home dressing with moistened gauze twice or three times a day represent simple, accessible practices with good results. Due to the high rate of postoperative recurrence of hidradenitis suppurativa described in the literature, recurrence should be seen as a feature of the disease that can be predicted and managed rather than a surgical treatment failure.¹²

Laser technologies have been valued for the ablation and

destruction of chronic lesions. The carbon dioxide (CO₂) laser can be used for vaporization and excision. It can reach nodules, tunnels, and abscesses, sparing healthy tissue. The CO₂ laser allows rapid healing and good hemostasis. Studies show less pain and a more comfortable postoperative period when this technique than with traditional surgery.¹³

INFLUENCE OF DISEASE AND COMORBIDITIES

A retrospective analysis conducted by Ngaage *et al.* identified postoperative complications in patients with a higher number of affected regions compared to patients without complications. Nevertheless, the proportion of Hurley stage III (severe HS) patients with complications were similar to those without complications. The study did not relate the Hurley stage with recurrence or unsightly scarring; however, there was a relation with the number of affected regions. Surgery on the extremities (thighs, arms) had the lowest recurrence rates, while surgeries on the groin presented the highest recurrence rates.⁴

Significant comorbidities have been associated with non-curative surgery.³ A retrospective cohort from a teaching hospital in London showed that 63% of patients with three or more comorbidities had complications after the first surgery, compared to a rate of 53% in patients with fewer comorbidities. Complications presented by patients with three or more comorbidities were infection, recurrence, excess granulation, hematoma, and dehiscence.¹⁴

A longitudinal cohort of 60 patients with HS undergoing surgical treatment at the Pedro Ernesto University Hospital between March 2016 and February 2019 (Rio de Janeiro) showed obesity as the primary and significant risk factor for recurrence after surgery. The most frequent postoperative complications were unsightly scars, pain, and partial suture dehiscence. There was a substantial increase, above 50%, in the quality of life indices of individuals after surgical treatment, regardless of the technique. Regarding recurrence, there was no significant difference between the surgical techniques employed. However, the pain was lower, and the seroma was more present in surgeries that used CO₂ lasers.¹⁵

Mikkelsen *et al.*¹³ also found obesity as the main risk factor for postoperative recurrence, while Bouazzi¹ identified higher recurrence among smokers.

According to a study conducted by Jemec *et al.*³, patients with HS submitted to multiple treatments usually had comorbidities, such as hypertension ($p < 0.001$), chronic lung disease ($p = 0.037$), diabetes ($p < 0.001$), electrolyte disturbances ($p = 0.017$), rheumatoid arthritis ($p < 0.001$), malignant neoplasm of the skin ($p < 0.001$), and synovitis ($p = 0.011$). The prevalence of mood swings and anxiety was high.

USE OF BIOLOGICS AS ADJUVANTS

There is controversy about the best surgical technique and the best option for reconstructing the excised area. However, there is consensus on reducing the inflammatory process in the preoperative period, allowing better delimitation of lesions and better results.⁵

Surgical treatment is often used for Hurley stage III cases. The best results are achieved with wide local excision, but the disease frequently recurs. A prospective longitudinal study assessed the impact of biological therapy combined with surgery. The effect of biologics was higher in patients who also underwent surgery ($p = 0.013$). Patients who underwent surgery in combination with biological therapy had a higher reach: 75% reduction in nodules ($p = 0.017$). The study concluded that biological therapy was associated with a more rapid decline in disease activity, with higher effects in patients who also underwent surgery.¹⁶

A prospective study with 39 patients did not demonstrate any recurrence in patients using biologics during the perioperative and postoperative period (two months). The follow-up time was 17 months.¹⁷

A randomized clinical trial with 206 patients evaluated the efficacy and safety of adalimumab in combination with wide surgical excision and secondary intention healing. After 12 weeks of adalimumab, patients achieved a significantly superior clinical response in all affected body areas. There was no evidence of an increased risk of postoperative infection, complication, or bleeding in the group using adalimumab.¹⁸

According to Bechara *et al.*, treatment with adalimumab combined with wide excision followed by secondary intention healing was effective for moderate to severe Hidradenitis suppurativa, with no need to discontinue adalimumab before surgery. The safety profile is consistent with other previous studies.¹⁸

FINAL CONSIDERATIONS

Studies on postoperative results should stimulate surgeons to feel safer when explaining complications to patients to obtain their free consent to the surgery.

HS treatment should be based on both the subjective impact and the objective severity of the disease. Recurrent and localized lesions can be treated surgically, whereas clinical therapy, either alone or in combination with surgery, is more appropriate for more extensive lesions.

Given the recognition of the factors involved in postoperative complications and recurrences, it is essential to prepare the patient preoperatively, recognizing comorbidities and lifestyle changes, clinical therapy for moderate to severe cases, including as an adjuvant to surgery, and prioritizing wide excision of lesions to obtain better results. ●

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