Axillary Hidradenitis Suppurativa: 
A Further Option for Surgical Treatment

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Abstract

Background: Hidradenitis suppurativa is a chronic inflammatory disease of the cutis with furuncles, fistulas, and abscesses. The disease is mostly located in groin and axilla. As conservative treatment can usually not prevent recurrence, surgical treatment is the method of choice.

Methods: We report on 20 patients with axillary hidradenitis suppurativa. The inflammatory region was excised in a rhomboid shape and immediately covered with a transposition flap according to Limberg. Postoperatively, all patients received antibiotic treatment and immobilization of the arm. Physiotherapy started after 2 weeks.

Results: No flap complications occurred. The functional and aesthetic results were very satisfactory. Movement of shoulder showed no restrictions. A recurrence with single fistulas was seen in 3 patients.

Conclusions: Conservative treatment of hidradenitis suppurativa is followed by a high rate of recurrence. Only radical debridement offers a cure. The therapy of choice is the radical excision of the affected region and immediate coverage with a flap. Open granulation or split skin grafting often results in a prolonged hospitalization, higher morbidity, and functional problems. Thus, open granulation is inferior to primary closure by a transposition flap. Using the Limberg flap, the donor site is allowed to be closed primarily.

Sommaire

Antécédents: L’hidrosadénite est une maladie inflammatoire chronique de la peau qui se caractérise par l’apparition de furoncles, de fistules et d’abcès. Le siège de la maladie se trouve le plus souvent au niveau de l’aine et de l’aisselle. Comme un traitement traditionnel n’empêche pas la récidive de la maladie, le recours à la chirurgie est la méthode de choix.

Méthodes: Nous rapportons le cas de 20 patients souffrant d’hidrosadénite dans la région axillaire. Une exérèse en forme de rhomboïde a été pratiquée dans la région de l’inflammation qui a été immédiatement couverte par un lambeau de transposition selon Limberg. Tous les patients ont subi une antibiothérapie et une immobilisation du bras après l’opération. Deux semaines plus tard, la physiothérapie a commencé.

Résultats: Aucune complication n’est survenue à la suite de la chirurgie. Les résultats fonctionnels et esthétiques ont été très satisfaits. Aucune restriction n’a été décelée dans le mouvement de l’épaule. Trois patients ont récidivé avec une seule fistule.

Conclusions: Un traitement conservateur est suivi d’une récidive élevée. Seul un débridement radical permet la guérison. Le traitement de choix est une exérèse radicale de la région affectée, avec couverture d’un lambeau. La méthode à ciel ouvert ou la greffe de la peau sont associés à une hospitalisation prolongée, à une plus importante morbidité et à des problèmes fonctionnels. Par conséquent, la procédure à ciel ouvert est inférieure à la fermeture primaire qui utilise un lambeau de transposition. En effet, le lambeau rhomboïdal permet une fermeture primaire du site donneur.
Hidradenitis suppurativa (Verneuil disease, acne inversa) is a chronic inflammatory and cicatricial disease of the cutis. In 1839 Velpeau described a disease with cutaneous abscesses in the axillary region and peri-anal skin. In 1864 Verneuil was the first to suggest that these lesions originated from sweat glands.  

Hidradenitis suppurativa is often part of acne inversa and is located only in terminal hair follicles. These terminal, pigmented, strong hairs are located in the extra-fascial area, especially in the axillary region, scalp, groin, and anogenital region. Many apocrine glands, as part of the hair–sebaceous glands unit, are in this area.  

Hyperkeratosis of the infundibulum followed by retention of keratinocytes is evident. The segmental rupture of follicular epithelium leads to infiltration of corneocytes, bacteria, and hair into the corium. The deposition is followed by granulocytic infiltration and foreign body granuloma. Abscesses then infiltrate into deeper layers of tissue and destroy the apocrine and eccrine glands.  

Along the glandular ducts pus infiltrates and destroys the secretory cells. Abscess fistulas infiltrate the fatty and muscle tissue. Superadded bacterial infection with streptococci and staphylococci may lead to further local extension, tissue destruction, and skin damage. Highly virulent bacteria are rarely isolated.  

Etiology of hidradenitis suppurativa is unknown. Only a close relationship to the acne conglobata triad and tetrad is described. The disease is found in males and females. Women tend to have more axillary involvement, whereas perineal involvement is more common in males. A hormonal cause with an increase of androgen had been disputed. However, all androgen gens and androgen had been discussed. However, all conservative therapies do not prevent a recurrence. Thus, surgical treatment is indicated. Local incision and drainage of the abscesses is often practiced. However, this yields only temporary relief and does not cure the patient. In addition, the risk of scar formation and contractures is increased. As a late complication of many chronic and inflammatory processes, squamous cell carcinomas have been described.  

Patients and Methods  

Between 1996 and 2000, 20 patients with axillary hidradenitis suppurativa were treated and followed up retrospectively between 3 months and 5 years. There were 14 females and 6 males with an average age of 36 years (range = 20–50 years). Five patients suffered from bilateral axillary hidradenitis. Fifteen patients were smokers. Duration of the disease prior to surgery was between 2 and 8 years. In most cases, incision of abscesses was performed prior to admission.  

At the time of admission seven patients had a putrid productive infection with staphylococci. Eight patients suffered from a scarred axilla with fistulae (Fig. 1). Three patients had a contracture with decreased shoulder abduction (two patients had 30/0/90° and one had 20/0/80° adduction/abduction). Some patients showed additional hidradenitis in the groin region. Under general anaesthesia, patients were in the lateral position on the operating table. The affected arm was abducted. The excision of the inflammatory region (cutis and subcutis) was done in a rhomboid-shaped manner. The flap was created by incising the skin at a 180° angle relative to the short diagonal of the rhombus and then extending this excision parallel to one of the adjacent sides of the rhombus (Fig. 2). The flap was dissected and transposed to cover the surgical defect. The flap was dorsally pedicled to avoid warping of the breast. After insertion of two drains, the donor side was closed primarily.  

Postoperatively, all patients received antibiotic treatment according to the resistogram. The arm was immobilized for 7 days. Physiotherapy started after 2 weeks.  

Results  

The postoperative course was uneventful. The immobilization of the arm and the antibiotic treatment were well tolerated. In one case there was an epitheliolysis in the ventral part of the flap which healed by conservative treatment. There were no important complications such as flap necrosis, septicemia, or emboli. The mean postoperative hospital stay was 8 days.  

Three patients showed a fistula in the axillary region 5 months after the operation. A second excision was performed in these patients. One patient had a postoperative lymphedema in the right arm which resolved by conservative treatment with lymphatic drainage and compression. Overall, the patients were very satisfied with the results. Shoulder movement showed no restriction, including the patients with preoperative contractures (Fig. 3).  

Conclusion  

Conservative therapy of hidradenitis suppurativa is a good addition to surgical treatment; however, applied alone, conservative therapy does not offer a sufficient treatment. Insufficient debridement is the major factor for a high recurrence rate, and in some cases a squamous cell carcinoma was seen as a late complication. Following radical excision, coverage is necessary. Herrmann et al. described the radical excision of the in-
flammatory region without coverage or split skin grafting 2–3 weeks after excision. Open granulations resulted in aesthetic and functional poor outcome. Immediate coverage of the defect should be standard practice. Split skin grafting is often used to cover the defect after excision. The method is simple, but shrinking of the grafted skin leads to contractures of the shoulder. Split skin grafting should generally be avoided on the flexion side of joints. In addition, the aesthetic result is unsatisfactory.

Amarante et al. described covering the defect with a scapular island flap. Schwabegger et al. described the lateral thoracic island fasciocutaneous flap for treatment of axillary skin defects. These operations are technically demanding and should be performed only in special cases. The same applies to the posterior arm fasciocutaneous flap by Elliot et al. Using local fasciocutaneous transposition flaps, a safe coverage without significant donor site morbidity is possible.
From our point of view, the transposition flap according to Limberg is an easy and practicable flap for coverage of defects in the axillary region. Limberg described this rhomboid-shaped flap in 1946.\textsuperscript{18,19} This transposition flap is an established method in surgery for the treatment of chronic pilonidal sinus.\textsuperscript{21–23} It is a safe and reliable flap with good aesthetic and functional results. The donor site can be closed primarily.\textsuperscript{18–20}

We have not noted any scar contracture in our patients. All patients were very satisfied with the aesthetic result. The recurrence rate was acceptable.

Patients with hidradenitis suppurativa usually have a long history of operations and hospital stays resulting in high costs and inability to work for long periods of time and, in addition, the patient’s compliance decreases. Using a primary closure reduces the hospital stay and costs.

Because of the low rate of complications, the simplicity, and the low rate of recurrence, the Limberg flap is a suitable and reliable therapy for the operative treatment of hidradenitis suppurativa.

\textbf{References}


