The Pollock Procedure, a 1-stage Treatment for Hidradenitis Suppurativa of the Axilla—Disease Review, Treatment Options, and Technique

Jean-Renoir Eugene, DO
Rosendo Iccochea, MD
Maurizio A. Miglietta, DO
Kenneth S. Schwartz, MD
Joseph Edwards, MD

KEY WORDS: Abscesses, Apocrine glands, Chronic inflammatory disease, Comedonal occlusion, Elliptical excision, Pyogenic infections, Sinus tracts, Suppurative folliculitis

ABSTRACT

The axilla is the most common location involved in hidradenitis suppurativa. In the most severe presentation, this disease may have substantial physical and psychological consequences. In addition to the purely physical manifestations of the disease, unsanitary purulent drainage may often force the patient to adopt a sedentary or secluded lifestyle. In severe cases, conservative treatment may not be a practical option, since medical management with antibiotics and steroids often fails. Therefore, surgical excision is recommended in cases of severe or refractory disease.

Of the surgical techniques described, the Pollock procedure appears to be most effective in curing disease while providing a better cosmetic result. The procedure permits simultaneous surgical intervention of both axillae with minimum blood loss. The Pollock procedure allows primary closure and therefore eliminates the need for the skin grafting that may leave donor site defects and scarring. In addition, healing and recovery times with the Pollock procedure are comparatively shorter.

First described in 1839 by the prominent French physician Velpeau, hidradenitis suppurativa is a chronic relapsing inflammatory disease of areas of the body that are rich in apocrine glands. The disease is characterized by persistent abscesses and sinus tract formation. Most commonly affected are the axillary, perineal, mammary, and inguinal regions. The neck, posterior ear, and even the periareolar region of the breast may also be affected. Histological examination reveals keratin plugs in the apocrine gland follicles associated with chronic inflammatory changes and distortion of the cellular architecture. In more advanced disease, sinus tracts can be seen amid infiltrative...
Continued from page 226. Chronic inflammatory cells.

Although hidradenitis suppurativa occurs in both sexes, manifestation in females predominates for reasons that are unclear. The anatomical predilection differs among the sexes with axillary manifestations being more common in women and genitoinguinal lesions in men. Although it can persist into the seventh decade, hidradenitis suppurativa is uncommon in persons <10 years or >40 years of age. Affected patients may present with a wide range of signs and symptoms, from local pruritus to subcutaneous nodules, cellulitis, ulceration, recurrent abscesses, fever, and sepsis. In the most severe cases, depression and other psychological consequences may accompany the physical symptoms.

**Etiology and Diagnosis**

Comedonal occlusion of the apocrine gland is believed to be the initiating event in hidradenitis suppurativa. Subsequently, inflammatory changes in the occluded gland and the associated follicles occur. Bacterial infection then follows, which can lead to destructive scarring and sinus formation. Inevitably, secondary bacterial infection ensues with further scarring and formation of deeper sinus tracts and recurrent abscesses. The most common organisms associated with these infections are *Bacteroides*, *Staphylococcus aureus*, anaerobic streptococci, and microaerophilic *Streptococcus milleri* (Lancefield Group F). The last is a well-known pathogen in purulent diseases and abscesses. When the disease is fully evolved, the chronic changes of induration, tissue distortion, formation of epithelialized sinuses, and obliteration of skin appendages secondary to the scarring are readily apparent.

**Predisposing factors.** While attempting to identify the predisposing factors for hidradenitis suppurativa, experts have found evidence of a hormonal influence. Hidradenitis often improves during pregnancy, while postpartum relapses of the disease often occur. In addition, hidradenitis suppurativa is exacerbated immediately prior to and during menstruation, suggesting that a decrease in estrogen may be a predisposing factor. Furthermore, some women may develop hidradenitis while taking oral contraceptives that are high in progesterone and low in estrogen. This reinforces the notion that a hormonal imbalance can indeed be a culprit in the disease process.

**Immunology.** In several cases, immunological defects were found to be an additional predisposing factor for hidradenitis suppurativa. The majority of patients with hidradenitis suppurativa are immunocompetent; however, in 1 study certain patients with the disease were found to have a marked reduction in T-lymphocytes and a higher frequency of human leukocyte antigens HLA-A1 and HLA-B8. Differential diagnosis. Ulcerated axillary and inguinal lesions may be confused with scrofuloderma. Inguinal lesions often resemble actinomycosis, granuloma involving the inguinal region, or lymphogranuloma venereum. When sinuses accompany a nodule, diagnosis should exclude pilonidal sinuses, Crohn’s disease, and diverticulitis of the sigmoid colon.

**Treatment**

Conservative treatment is recommended for mild cases of the disease. This includes the use of warm compresses, antibiotics, and open drainage. Improvement in local hygiene, discontinuation of deodorants, and avoidance of axillary shaving are strongly recommended, as well as weight reduction in obese patients. In both acute episodes and relapses, pyogenic bacterial infections are intrinsic to the disease. Therefore, a course of antibiotic therapy is recommended. Penicillin is the first line of treatment. Alternatively, erythromycin in combination with metronidazole may also be used. Other regimens include the use of tetracycline, erythromycin, and oral or topical clindamycin. Systemic corticosteroids have been used to control the severe inflammation that often is associated with hidradenitis suppurativa. Vitamin A (retinoids, isotretinoin, etretinate) has been reported to be useful in the treatment of the disease.

In moderate to severe cases, surgical excision should

![Table](image-url)
be offered. Surgical exteriorization, curettage, and electrocoagulation of sinus tracts have been successfully used in the treatment of mild to moderate cases of the disease.\textsuperscript{22} Simple excision, followed by either split-thickness skin graft or advancement flaps, has been well described.\textsuperscript{23}

In patients with extensive or refractory disease, deep and wide excision with simple skin reapproximation or grafting may be an appropriate option.\textsuperscript{1}

Although the excision technique just described allows total excision of the diseased axillary contents, cosmetic results often are unsatisfactory because of keloid formation, deformity, and wound contracture. These factors also may lead to limitation of shoulder motion and other complications.

For cases of severe axillary disease, we believe the Pollock procedure provides ample resection of diseased tissue while providing a better cosmetic result than deep, wide excision.

\section*{Operative Description: Pollock Procedure}

In our institution, we use the procedure as described by Pollock and colleagues,\textsuperscript{3} with minor modifications. The procedure is performed under general anesthesia with the patient lying supine. The arm of the affected axilla is suspended to an overhead fixture for ample access. The affected axilla is prepped with povidone-iodine and the patient is steriley draped from head to toes. An elliptical excision of all affected skin and subcutaneous tissue is performed until the axillary fascia (deep margin) is visualized (Figure 1). Care must be taken to avoid contamination of the deeper margins. The anterior limit of the dissection is the pectoralis major, and the posterior border is the latissimus dorsi.

In cases of extensive axillary disease, a lateral or medial extension of the elliptical excision may be necessary. The excision at the extension site is closed primarily with 3-0 nylon, leaving the central elliptical

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{figure1.png}
\caption{Elliptical excision of diseased skin showing the axillary subcutaneous tissue and fascia, the placement of the \#1 Prolene retention sutures, and (to the left) an extension of the excision that has been closed with 3-0 nylon sutures.}
\end{figure}

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{figure2.png}
\caption{Here, the entire elliptical incision has been closed in subcuticular style with 3-0 nylon. The Prolene retention sutures placed in the axillary fascia remain in place.}
\end{figure}

All photographs courtesy of Rosendo Iccochea, MD
characterized by pyogenic infections and chronic inflammation) often is debilitating and can be a source of depression in severe cases. Therefore, employing a technique that is effective in both curing and providing a satisfactory cosmetic result is of prime importance. In addition to the aforementioned advantages, the Pollock procedure allows the simultaneous surgical application to both axillae with minimum blood loss. Equally important, this procedure permits primary closure, eliminating the need for skin grafts. We have found healing and recovery times to be shorter than those for other surgical techniques that have been described for the treatment of axillary hidradenitis suppurativa.

Acknowledgment: The authors thank Bill Zucconi, DO, for his assistance with the drawing in Figure 3.

References


continued on page 235


