New and traditional surgical approaches to hidradenitis suppurativa

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When the prevention of new lesions fails and when medical therapy of established and growing lesions is ineffective, surgery is the accepted method of dealing with hidradenitis suppurativa/acne inversa. The rationale and preferred techniques of mini-unroofing using a biopsy punch, deroofing using scissors, electrosurgery or laser, and classical wide excision and closure are discussed. The situation in which incision and drainage is considered for temporary pain relief would be best considered an opportunity for deroofing, as illustrated in the accompanying online videos. (J Am Acad Dermatol 2015;73:S62-5.)

Key words: biopsy; cryoinfusion; cryosurgery; deroofing; electrosurgery; excision; hidradenitis suppurativa; incision and drainage; photodynamic therapy; prevention; surgery; unroofing.

THE MANAGEMENT OF HIDRADENITIS SUPPURATIVA/ACNE INVERSA MUST BE DIRECTED AT 2 PROBLEMS IN PARALLEL

Prevention of new lesions

Prevention requires aggressive avoidance of all influences (hormonal and chemical) that tend to plug the follicular portion of the folliculopilosebaceous unit (FPSU). At the same time, any physical injury (trauma) that leads to rupture of the fragile FPSU structure must be carefully avoided. The inflammation that follows rupture is directed at repair of the damage and is sometimes successful, but the repair and return to normal of damaged tissue may be impeded, overwhelmed by the minor to massive inflammation that occurs in patients with hidradenitis suppurativa/acne inversa (HS/AI).

Surgical clearance of established lesions

The foreign material trapped beneath the surface must be physically removed, with or without accompanying scar tissue. This is best done, as in Mohs micrographic surgery for cancer, with the least possible destruction of normal tissue. Unroofing (also called deroofing) has emerged as one of the most effective methods of such removal.[1,2]

In cases that have gone beyond our ability to prevent and clear HS/AI with conservative measures, excisions designed to reach beyond the hidden margins of the disease have been performed. By comparison to conservative therapy, such care is more complicated, costly, and time-consuming. Systematic examination of the tissue removed has been rare until recently. It is now apparent that extending the depth of the excision to fascia and beyond the clinical edges of the disease activity is generally unnecessary, but exceptions requiring more widespread removal will occasionally occur.

Surgery must be directed at 3 distinct collections of material: (1) epithelialized sinus tracts and the associated keratinous debris must be unroofed, traced, followed, exposed, and removed to eliminate the materials that act as foreign bodies under the skin; (2) seropurulent inflammatory material must be drained and completely removed, and cultures must be obtained if odor, pain, or discharge suggests infection; and (3) the invasive proliferative gelatinous mass (IPGM) requires careful identification, accurate tracing, and full eradication.

The clarity of the IPGM varies from a clear gel to a cloudy pink consistency—similar to granulation tissue—to a more fibrous material. All must be

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curetted away or wholly removed. If the patient has been taking anti-inflammatory medications, the inflammatory component is minimized and the IPGM is more easily appreciated. If there is obvious pus, it can be absorbed with a gauze sponge to view the IPGM, allowing it to be carefully curetted away from the healthy tissue.

Physically removing these materials prevents the progression of the gelatinous invasion and further sinus formation that accompany scarring. Destroying less normal tissue and placing less stress on the healing margins of the wound results in improved wound healing and rare recurrence.

CAPSULE SUMMARY

- Surgical removal of the actively inflamed area in hidradenitis suppurativa is often curative.
- Unroofing, a simple, inexpensive procedure performed by dermatologists early in the disease course, is usually locally curative.
- Unroofing spares tissue, saves operative and healing time, minimizes pain, is cost effective, and has excellent patient acceptance.

SURGICAL APPROACHES

Five distinct surgical approaches can be considered: (1) local destruction; (2) incision and drainage (I&D); (3) mini-unroofing by punch debridement; (4) standard unroofing (deroofing) to all involved margins; and (5) surgical excision beyond all clinically apparent margins.

Surgical preparation

Surgical wounds heal best if inflammation can be cooled before surgery. Antibiotics, especially those with anti-inflammatory properties, can be supplemented with short courses of prednisone, cyclosporine, or biologic agents. These are used before surgery to calm tissue inflammation in patients with severe disease. This allows easier distinction of involved from normal tissue at the time of surgery and prepares the wound for optimal healing.

Local destruction

Destruction of individual lesions may be attempted for those that are smaller and thinner. Cryosurgery, cryoinfusion, electrosurgery, and photodynamic therapy have each been reported to be helpful in managing acute or chronic lesions.[3-5] The goal is to ablate the limited nodular lesion or sinus, including its contents. For larger lesions or extensive fibrosis, local therapy is less likely to be effective.

Incision and drainage (I&D)

I&D of individual "boils" can decompress these lesions and empty them of pus and some semisolids. It provides only short-term and usually temporary pain relief. Lesions treated in this manner usually recur with no long-term benefit.[6] I&D should generally be avoided, but a tense abscess that is too painful to bear should be incised after wide circumferential local anesthesia. Placing a wick or packing the wound for a few days may be needed. The actively growing IPGM is not eliminated. An alternative surgical approach is indicated.

Punch debridement

Punch debridement (mini-unroofing) is perfect for the management of early or small acute or subacute inflammatory lesions, often involving only 1 FPSU. This is a simple procedure performed in the office, clinic, or emergency room setting. Use a 5- to 8-mm circular disposable biopsy punch. Center the excision over the acutely inflamed FPSU nodule, include a small amount of surrounding tissue, and ensure that a deep specimen is obtained by using a firm twisting action. Remove the plug, submit for histology, and obtain bacterial cultures if purulent.

Aggressive debridement involves digital pressure to remove purulent elements and then curettage and/or simple grattage (scrubbing) with gauze wrapped around a cotton swab. The specimen will contain the fractured FPSU with its associated sebaceous glands (if still present) and more importantly, the "bulge" area of the pilar unit of the FPSU that contains the stem cells, which are hypothesized to be responsible for growth of the IPGM and the sinus tracts.

For hemostasis, ferric chloride 3.8 molal (37.5%) is applied with a cotton swab, and the excess is wiped away. A thick layer of petrolatum is applied directly to the wound, held in place with a gauze pad or simple bandage. No drain is used. Healing is by secondary intention. Pain relief and healing are swift. Recurrences do not occur, but additional FPSUs in the treated area are at risk until preventive measures are effective.

Unroofing/deroofing

Surgical unroofing (also called deroofing) is an optimal therapy for nodules, abscesses, and sinus tracts and may be used for individual sinuses (local unroofing) or on all lesions in an anatomic area (extensive unroofing).[7] Under local anesthesia with