

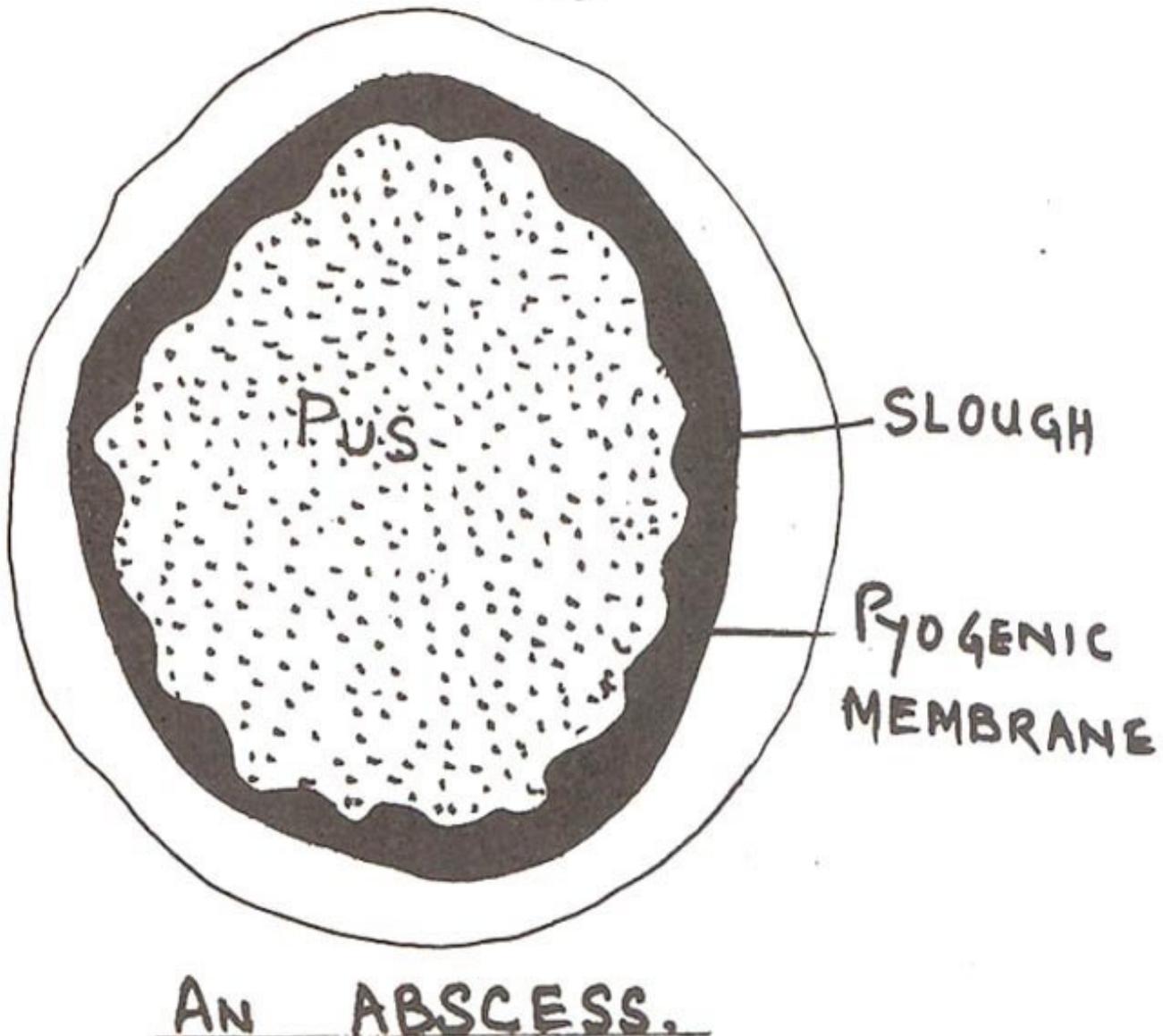
Procedure: Incision and Drainage of a Superficial Abscess

Pages with reference to book, From 286 To 289

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Pyogenic bacteria such as the Staphylococcus Aureus characteristically produce a circumscribed area of tissue necrosis leading to abscess formation. An abscess consists of (i) a central cavity containing pus, which is essentially liquefied necrotic tissue along with dead polymorphs and bacteria (many of the latter are alive) and (ii) a surrounding wall, the inner layer of which is again necrotic tissue (not yet liquefied) called slough the outer layer is acutely inflamed tissue profusely infiltrated with polymorphs the pyogenic membrane (Fig).

Fig.



As the abscess expands, more living tissue is converted to slough and the slough in turn to pus. If the natural and acquired resistance of the host is adequate, the pyogenic membrane is rapidly replaced by granulation tissue which prevents the systemic invasion of bacteria. Other pyogenic organisms e.g. the

Streptococcus B Haemolyticus, by contrast, cause a spreading cellulitis and suppuration occurs only at an advanced stage of infection.

Abscesses drained during the course of one year on a surgical ward are listed in the table.

Table

Superficial Abscesses Incised and Drained on a Surgical Service During 1983.

Abscess site	No of cases
Perianal/ ischioirectal	8
Breast	5
Gluteal	6
Cervical	5
Hand	3
Other	6
Total	33

Perianal and ischioirectal abscesses result from infection of an anal gland by E. Coli, Staphylococci, Bacteroides, Streptococci Faecalis or Proteus. Frequently, Penicillin-resistant Staphylococci are responsible for breast abscesses which as a rule occur in the second peuperial week of the first pregnancy. Tissue tension rises rapidly with in the fascial compartments of the ischioirectal fossa and breast lobule. On the other hand, deeply seated injection abscesses in the gluteal region develop insidiously and are probably a chemical necrosis to start with. Suppurative lymphadenitis is the usual cause of an abscess in the neck or groin, but in the axifia infection of hair fofficles and apocrine sweat glands is commoner. Sup. purative infections of the palm and sole often have superficial and deep components - the collar stud abscesses. Other sites of abscess formation include the perineum as a result of infection in a Bartholin's gland or a periurethral gland in the male the natal cleft from infection of a pionidal sinus and the anterior abdominal wall as a consequence of sepsis in a patent portion of one of the hypogastric arteries or umbilical vein. Carbuncles and furuncles are special forms of abscess found along hair lines.

Aim of Incision and Drainage

Abscesses should be incised and drained before they point and certainly before they become fluctuant. If allowed to progress to an advanced stage, considerable destruction of the affected tissue will have occurred (in the breast this could mean functional amputation) and the overlying skin will have necrosed. Throbbing pain which keeps the patient awake at night, redness, heat and a brawny oedema of the overly. ing and surrounding skin are early warning features.

Once an abscess has formed an antibiotic cannot penetrate the avascular slough lining the cavity. It is only after the abscess has been incised and the slough scraped away that the antibiotic as well as the body's own cellular and humoral defenses gain access to the cavity and eradicate the infection.

Role of Antibiotics

1. Antibiotics may abort abscess formation if administered early during the stage of cellulitis. This is particularly true of the breast where mastitis may be resolved by cloxacillin therapy combined with manual evacuation of the milk and firm support of the organ. A caveat here is that persistence with antibiotics per se, after an abscess has formed, results in fibrosis of its walls and inspissation of the pus. The so called 'antibioma' is now indistinguishable from a scirrhous carcinoma of the breast.
2. Preoperative use of antibiotics does have the advantage that it reduces the surrounding cellulitis, localises the abscess and thereby sharply defines the incision site. Also, bacteraemia that may arise during surgery is readily combated.
3. For some years now primary closure of an abscess, following incision and vigorous curettage, has been widely practised. The success of this technique depends on the liberal perioperative use of antibiotics. Although primary closure is said to shorten convalescence it is feared that it may increase the risk of recurrent abscess.

Method of Incision and Drainage

Preoperative evaluation: Infection may unmask latent diabetes and in established cases may herald the onset of ketoacidosis and a hyperosmolar state leading to dehydration. Infection is also prone to occur in patients with renal failure and those with blood dyscrasias. Curettage may result in brisk bleeding and this could be embarrassing in an anaemic patient. Meaningful urine and blood tests should be arranged and appropriate measures adopted to deal with expected problems.

Antibiotics: These are started on a best guess basis in regard to the type and sensitivity of the organism. Cloxacillin is suitable where a penicillin-resistant staphylococcus is suspected, as in a breast abscess a combination of ampicillin and lincomycin may be used where one of several organisms could be responsible, as in a perianal abscess. In the event of penicillin hypersensitivity, a cephalosporin may be substituted. The initial dose should be parenteral.

Laying out the trolley A presterile set consisting of a small kidney tray, a galipot, a knife handle, a sinus forceps or haemostat and a blunt curette, is handy. Sterile gauze, gauze wick, cotton wool, a suitable drape as well as sterile knife blades should be available. There should also be a sterile container for collecting a sample of pus.

Anaesthetic: It is preferable to employ general anaesthesia. Only in this way can the slough be adequately curetted, loculi disrupted and the deep component of a collar stud abscess negotiated. The procedure may however, be conducted on an outpatient basis, the patient coming to hospital duly starved and being allowed home after regaining consciousness.

At one time or another one has been tempted to infiltrate local anaesthetic (1% lignocaine and 1:200,000 adrenaline) in the form of a weal over the most prominent part of the swelling. The anaesthetised area is then lanced with a No: 11 blade. This form of anaesthesia however, has the potential disadvantage that it may spread the infection.

The steps of the operation:

1. It is best to shave the affected part atraumatically under anaesthesia. Scrub up and put on sterile gloves. Clean the skin with iodine and spirit in the usual way. Arrange the drape,
2. As mentioned earlier, a small abscess may quite simply be lanced. For an abscess situated in a deeper plane, incise cautiously over the most prominent part of the swelling and achieve final thrust into the cavity by means of a haemostat/sinus forceps. Open the jaws of the instrument while withdrawing (Hilton's method). The incision may be extended with a knife blade or alternatively, an ellipse of skin may be excised "order to de-roof the abscess sufficiently. In the perianal region a cruciate incision is made and the corners are trimmed off. In the breast and in the neck, where a cosmetic effect is desirable, incisions may be planned along Langer's lines and skin creases. In the axilla and groin on the

other hand, it may be prudent to incise along the line of the underlying vessels.

3. Insert a finger into the abscess cavity in order to break the loculi. Similarly with gauze wrapped around the finger scrape off the slough until fresh blood oozes. In the axilla, neck and groin underlying vessels may be vulnerable to damage during this manouver.

In a smaller cavity, the slough lining it may be abraded by means of a pledget of gauze held on a haemostat (peanut swab). Alternatively a small blunt curette may be used.

4. Pack the cavity lightly with a gauze wick soaked in de-sloughing agent such as diluted hydrogen peroxide solution. De-sloughing agents should be avoided wherever neurovascular bundles are directly exposed.

5. Apply a generous gauze-cotton-gauze (gamgee) dressing and secure with tape or bandage. It is disconcerting for the patient to have his clothing or covers soaked. Dependant sites such as the breast, hand and scrotum should be well supported.

In case an abscess has burst spontaneously, excise the necrotic skin and scrape off the slough. In a large breast abscess it may be necessary to make a counter incision in the dependant lower half of the breast and provide drainage with a corrugated rubber drain. In a carbuncle, de-roofing may need to be extensive. By contrast, the small size of a boil generally precludes incision and drainage. Boils are as a rule left to burst spontaneously.

After care : Bed rest, oral analgesia and a night sedative should be prescribed. Following parenteral administration of the loading dose of antibiotic preoperatively, it is worthwhile continuing with the drug for five days postoperatively in an oral form. With breast abscesses a decision needs to be taken in regard to weaning. In case lactation has been prolonged, it is best to wean off the infant and give the mother stilboestrol to suppress milk secretion. In most cases it is reasonable to continue breast feeding with the opposite breast and to manually express milk from the affected side.

Arrange to see the patient after 48 hours of drainage in order to remove the pack and inspect the cavity. If clean, only a dry dressing need be applied again, otherwise repeat the pack.

Admission is advisable for reactionary haemorrhage. Re-explore the cavity under general anaesthesia and secure bleeding points with diathermy or under-running sutures.

The wound heals from the depths by granulation tissue. As a rule two or three weeks are required for a moderate sized cavity to fill up and epithelialise. Premature closure of the deeper parts of the cavity is fraught with the danger of pocketing pus. Should this seem probable, it is wiser to reinstitute the pack.

In case of a perianal or ischio-rectal abscess, sitz baths are convenient. A sterilised sanitary pad may be used for dressing. Local applications of antibiotics should be discouraged as they enhance the growth of resistant flora and occasionally result in intractable allergic dermatitis.

Follow up treatment of a primary pathology such as fistula in urethral stricture and pyoderma is necessary.