

Emergency Department Incision & Drainage Checklist

Initial Evaluation

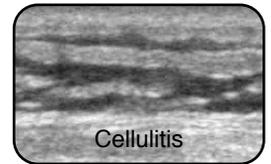
Is this an Abscess?

An abscess is a tender, swollen erythematous nodule with a palpable area of fluctuance

Use **ultrasound** to distinguish hypoechoic collection of abscess from cobblestoning of cellulitis

Use doppler to ensure the collection identified is not vascular and to locate surrounding vascular structures.

If ultrasound is not available or results are equivocal, consider needle aspiration to confirm diagnosis [1]



Cellulitis

Vascular malformation: history of vascular repair, location near major vessels, exam may demonstrate bruit or thrill. Have a low threshold to use doppler sonography - **I&D of AVM is dangerous**

Herpetic whitlow: vesicular lesion, often on hands, often with history of HSV (oral or genital)

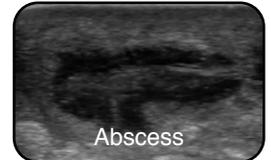
Kerion: boggy, tender, elevated scalp nodule in context of tinea infection

Hidradenitis suppurativa: recurrent groin, buttocks or axilla furuncles/abscesses—I&D not curative and not recommended as treatment in isolation [2]

Myiasis: slowly enlarging lesion, recent travel to tropics, sensation of movement under skin

STI: granuloma inguinale, chancroid, lymphogranuloma venereum if suggestive location and history

Sporotrichosis: slowly progressive, less painful ulcerative lesion in plant handlers / agriculture workers



Abscess

Should this abscess be drained in the emergency department?

Consider surgical assessment for peri-rectal, hand/palm/sole, nasolabial fold, adjacent to major blood vessel/nerve, very large/deep abscess, multiple abscesses, abscess complicating recent surgery

Perianal abscess can be drained in the ED if fluctuant dome is visualized and rectal exam verifies no rectal extension - if uncertain, consider imaging vs. surgical assessment [3]

Breast abscess: aspiration is less painful and equally effective [4] [5]

For equivocal cases consider warm soaks with or without abx, close observation and indications for immediate return

Procedure

- Informed Consent** **Expected Benefits:** resolution of infection, prevention of worsening infection, relief of pain
Possible Harms: pain, failure of the procedure requiring repeat procedure, bleeding, scar formation
Alternatives: antibiotics, warm soaks, observation

- Analgesia** **Oral or parenteral** analgesia/anoxiolysis prior to beginning procedure
Procedural sedation is indicated for an abscess that will be particularly painful to drain or difficult to anesthetize with local/regional techniques, as well as for uncooperative/particularly fearful patients

- Equipment**
- | | | |
|--|--|---|
| <ul style="list-style-type: none"> ▫ gloves, face shield, gown ▫ drape and gauze ▫ skin antiseptic ▫ local anesthetic (see anesthesia below) ▫ syringe and needle (25-30 gauge) | <ul style="list-style-type: none"> ▫ culture swab (if indicated, see below) ▫ packing (if indicated, see below) ▫ scalpel (size 11 or 15 blade) ▫ curved hemostat or cotton swab | <ul style="list-style-type: none"> ▫ forceps ▫ scissors ▫ dressing ▫ tape |
|--|--|---|

- Prophylactic Antibiotics? (for transient bacteremia caused by I&D)**
- Indicated in these patients** [6]
- History of infective endocarditis
 - Prosthetic cardiac valve or prosthetic material used for cardiac valve repair
 - Cardiac transplant recipients who develop cardiac valvulopathy
 - Unrepaired cyanotic congenital heart disease (CHD)
 - Repaired CHD with prosthetic material for 6 months after procedure
 - Repaired CHD with residual defects at or adjacent to site of prosthetic device
- Antibiotic choice** - to be given 30-60 minutes before I&D
- | | |
|--------------------|---|
| ▫ PO | amoxicillin (2g, 50 mg/kg) |
| ▫ IM/IV | ampicillin (2g, 50 mg/kg),
cefazolin or ceftriaxone (1g, 50 mg/kg) |
| ▫ PO PCN allergy | cephalexin (2g, 50 mg/kg) or
clindamycin (600 mg, 20 mg/kg) |
| ▫ IV PCN allergy | cefazolin, ceftriaxone, or clindamycin |
| ▫ Concern for MRSA | PO clindamycin or IV vancomycin (20 mg/kg) |

- Sterilize the field** chlorhexadine or povidone iodine [1]
Abscess I&D is not a sterile procedure but field is customarily sterilized

Procedure (cont.)

Anesthesia

Field/regional block if possible

Anesthetize abscess itself by puncturing at one site within the dome, then injecting at separate site within dome - allows pus to drain through first puncture site (can be collected for culture)

Lidocaine without epinephrine: toxic dose is 4 mg/kg = 0.4 cc/kg of 1% solution, 0.2 cc/kg of 2% solution

Lidocaine with epinephrine: toxic dose is 7 mg/kg = 0.7 cc/kg of 1% solution, 0.35 cc/kg of 2% solution

Bupivacaine (marcaine, sensorcaine) is the preferred agent for much longer duration of action, but must not be injected intravascularly; toxic dose is 2.5 mg/kg without epinephrine, 3.5 mg/kg with epinephrine

Incision

Make a linear rather than cruciate or elliptical incision [7]

Minimize scar with incision parallel to skin tension lines

Err on the side of larger incision, especially in areas of less cosmetic importance

Wound Culture? indicated in these circumstances [8]

- Extensive/severe disease
- Rapid progression in the presence of cellulitis
- Signs of bacteremia or septic phlebitis
- Immunocompromise, extremes of age, or significant comorbidities, including diabetes
- Difficult area to drain (face, hand, genitalia)
- Lack of response to earlier I&D
- Concern for cluster/outbreak

Break up loculations

Ensure adequate anesthesia/analgesia/sedation as needed to perform this key step, which reduces likelihood of abscess recurrence [7]

Use hemostat (or, for smaller abscesses, cotton swab) - using finger is discouraged as foreign body in abscess can rarely be excluded

Data is inconclusive but in most cases it is likely that **irrigation is unnecessary** [7]

Pack? only recommended in these circumstances [9]

- Abscess > 5 cm
- Diabetes
- Pilonidal location
- Immunocompromise

Although the literature is not definitive it looks like leaving abscesses unpacked reduces pain and need for return visits and does not increase rate of recurrence. If not packing seems too drastic, insert corner of 2x2, which can be removed by patient at first dressing change in 24-48h.

Update tetanus prn

*if age >18 and >10 years since booster, give Tdap
see emupdates.com for other scenarios*

Curative Antibiotics? indications are same as wound culture, above [8]

- Antibiotic spectrum should include MRSA
- Tailor antibiotic to culture/sensitivity if available
- Additional coverage for strep usually not necessary [11]
- MRSA decolonization not routinely recommended [8,10]

Evidence is weak and recommendations change frequently, consult local guidance

Duration is 7 days unless specific concern

- Trimethoprim/Sulfa 2 DS tabs BID [5 mg/kg trimethoprim component BID] [10]
- Clindamycin 300 mg TID [15 mg/kg TID]
- Doxycycline 100 mg BID, Minocycline 200 mg x 1 then 100 mg BID
- Linezolid 600 mg BID [10 mg/kg TID]

If admitted: IV broad spectrum abx + vancomycin or linezolid

Undiagnosed predisposing condition?

consider testing if history/physical are suggestive

- Serum or capillary glucose for diabetes
- HIV testing
- CBC for leukopenia/leukemia

Disposition

For discharged patients

- Warm compresses or soaks 3-4 times daily
- If not packed and healing well, optional follow up in 7 days with PMD
- If packed, return for wound check 48-72 hours
- Earlier return to ED or clinic as indicated for clinical concern

Indications for immediate return to the ED

- Fever/chills
- Re-accumulation of purulence / increased swelling
- Increased pain or tenderness
- Progressive erythema / streaking