

Abscess

Synonyms:

abscess, abscesses, boils, carbuncles, furuncles, hidradenitis suppurativa, pilonidal abscess, pustules, whiteheads

An **abscess** (Latin: *abscessus*) is a collection of pus (neutrophils) that has accumulated within a tissue because of an inflammatory process in response to either an infectious process (usually caused by bacteria or parasites) or other foreign materials (e.g., splinters, bullet wounds, or injecting needles). It is a defensive reaction of the tissue to prevent the spread of infectious materials to other parts of the body.

The organisms or foreign materials kill the local cells, resulting in the release of cytokines. The cytokines trigger an inflammatory response, which draws large numbers of white blood cells to the area and increases the regional blood flow. The final structure of the abscess is an abscess wall, or capsule, that is formed by the adjacent healthy cells in an attempt to keep the pus from infecting neighboring structures. However, such encapsulation tends to prevent immune cells from attacking bacteria in the pus, or from reaching the causative organism or foreign object.

Signs and symptoms

The cardinal symptoms and signs of any kind of inflammatory process are:

Redness:

Is evident on inspection but can be determined only when the swelling lies adjacent to the surfaces

Heat

Constantly present in inflammation and is due to the increased flow of blood through the affected part. The determination of the

sensation of heat is extremely valuable in diagnosing inflammation even though no redness is present.

Swelling:

Occure except in those location where the anatomy of the parts prevents expansion. In inflammation the swelling is due to cellular outflow, vasodilation and extravasation of fluids.

Pain

Exist to some degree in the inflammatory area when it is located in regions supplied by nerve ending

Loss of function

Usually due primarily to pain but in the later stages may be due to destruction of tissue.

Causes

Abscesses are caused by

- ✓ Obstruction of oil (sebaceous) glands or sweat glands,
 - ✓ Inflammation of hair follicles, or
 - ✓ Minor breaks and punctures of the skin. Germs get under the skin or into these glands, which causes an inflammatory response
 - ✓ **Systemic diseases**
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- ✓ Abscesses may occur in any kind of solid tissue but most frequently on: skin surface (where they may be superficial pustules (**boils**) or deep skin abscesses),
 - ✓ In the lungs, **brain**, **teeth**, kidneys and tonsils.
 - ✓ Major complications are spreading of the abscess material to adjacent or remote tissues and extensive regional tissue death (**gangrene**). Abscesses in most parts of the body rarely heal themselves, so prompt medical attention is indicated at the first suspicion of an abscess.

- ✓ An abscess could potentially be fatal if it compresses vital structures such as the **trachea** in the context of a deep neck abscess.

Classification of abscess

- 1. According to location:**
 - a. Superficial (skin abscess)**
 - b. Deep or internal abscess (liver, kid, spleen)**
- 2. According to the causes**
 - a. Primary abscess: direct infection with causative agent**
 - b. Secondary abscess: inflammation with certain systemic disease Ex. TB, Strangles, ganders**
- 3. According to the time or duration**
 - a. Acute or hot (painful, redness, swelling, hotness, loss of function).**

All the signs of acute inflammation subside or may
 - b. Mature Abscess (soft) , immature abscess still firm**

Diagnosis:

- ❖ Clinical signs
- ❖ When the abscess is deeply situated or in an unusual location it is a good procedure to insert a hollow instrument into the swelling
- ❖ Palpation if mature appeared fluctuation of pus.
- ❖ For final diagnosis we can do exploratory puncture (Should be under aseptic technique open the abscess), or aspiration.
 - **Clipping then strong antibiotics applied then introducing of sterile needle so:**
 - 1. If there is pus inside it that mean abscess**
 - 2. If it is blood it mean hematoma**
 - 3. If it is serum with blood it mean old affect**
 - 4. If the aspirate is clear fluid it mean cyst(collection of serum inside membrane)**
 - 5. If there is digestive content it mean hernia**

Treatment

1. Incision and drainage

- ❖ The skin over the swelling should be clipped closely and an efficient skin antiseptic applied
- ❖ The abscess was incise should be made so it for complete drainage of the cavity.
- ❖ After the pus is removed the cavity is packed with gauze that has been saturated with tincture of iodine.
- ❖ The gauze is removed in forty-eight hours and the cavity is flushed out with a mild antiseptic solution.
- ❖ After care consist in keeping the opening free for drainage and removing any exudate the collects in the cavity.

The abscess should be inspected to identify if foreign objects are a cause, which may require their removal

In critical areas where surgery presents a high risk, it may be delayed or used as a last resort. The drainage of a lung abscess may be performed by positioning the patient in a way that enables the contents to be discharged via the [respiratory tract](#). Warm compresses and elevation of the limb may be beneficial for a skin abscess.

2. Primary closure

Primary closure has been successful when combined with curettage and antibiotics or with curettage alone.

In anorectal abscesses, primary closure healed faster, but 25% of abscesses healed by secondary intention and recurrence were higher.

3. Antibiotics

As *Staphylococcus aureus* bacteria is a common cause, an anti-staphylococcus antibiotic such as flucloxacillin or dicloxacillin is used. With the emergence of community-acquired methicillin-resistant *Staphylococcus aureus* (MRSA), these traditional antibiotics may be ineffective; alternative antibiotics effective against community-acquired MRSA often include clindamycin, trimethoprim-sulfamethoxazole, and doxycycline.

These antibiotics may also be prescribed to patients with a documented allergy to penicillin. (If the condition is thought to be cellulitis rather than abscess, consideration should be given to possibility of strep species as cause that is still sensitive to traditional anti-staphylococcus agents such as dicloxacillin or cephalexin in patients able to tolerate penicillin).

It is important to note that antibiotic therapy alone without surgical drainage of the abscess is seldom effective due to antibiotics often being unable to get into the abscess and their ineffectiveness at low pH levels.

- ✓ If the abscess is small (less than 1 cm or less than a half-inch across), applying warm compresses to the area for about 30 minutes 4 times daily can help.
- ✓ Do not attempt to drain the abscess by pressing on it. This can push the infected material into the deeper tissues.
- ✓ Do not stick a needle or other sharp instrument into the abscess center because you may injure an underlying blood vessel or cause the infection to spread.

- - You may be given some type of sedative if the abscess is large.
 - The area will be covered with an antiseptic solution and sterile towels placed around it.

In chronic abscess:

Worm application or iodine ointment or any counter irritant lead to abscess righten

In case of the large abscess we will make counter **opening lso the incision parallel to the long axis.**