

# Pyoderma

## ABOUT THE DIAGNOSIS

Pyoderma is an infection of the skin with one or more types of bacteria. Several types of bacteria normally live on the hair and surface of the skin of healthy animals without causing the animal any problems; they are called *resident flora*. However, if the animal's skin defense mechanisms are compromised (from self-trauma, such as wounds or scratching; foreign body like a thorn or splinter; other primary skin diseases; diseases that affect the whole body internally; or a weakened immune system), resident flora bacteria and other types of bacteria may multiply and penetrate into the animal's skin, causing *pyoderma*. Pyodermas are generally classified as superficial or deep. Most pyodermas are superficial, affecting the upper layers of skin and hair follicles, and therefore are easier to treat and eliminate. Deep pyodermas affect the deeper layers of skin, and sometimes the entire skin thickness and deeper, subcutaneous tissues. In contrast to superficial pyodermas, deep pyodermas can be associated with fever and generalized illness. Usually, the deeper the infection extends into the layers of the skin, the more serious the infection and the longer the duration of treatment needed to eliminate it. Most cases of deep pyoderma are associated with an underlying cause, such that treatment must be aimed both at healing the skin and at the causative problem.

Veterinarians often diagnose deep pyoderma based on symptoms, as well as microscopic evaluation of bacteria from an infected area (*cytology*). A *bacterial culture and susceptibility* test is usually recommended to aid the diagnosis and facilitate the effective treatment of the infection. It involves taking a small amount of discharge or a tissue sample from the infected site and sending it to a laboratory to identify the type(s) of bacteria present and determine which antibiotics will be effective in treating the condition. Because most deep pyodermas are secondary to an underlying condition, it may also be necessary to perform additional tests (skin biopsies, blood tests, urinalysis, fungal culture, skin scrapings, allergy testing, etc.) to identify the predisposing factor(s). Radiographs (x-rays) may be helpful in detecting foreign bodies and also determining if an infection has spread to the bone(s).

## LIVING WITH THE DIAGNOSIS

The more severe types of deep pyoderma include *furunculosis*, *cellulitis*, and *subcutaneous abscesses*. These conditions are often quite painful, and in severe cases, animals may develop a fever and become very ill.

**FURUNCULOSIS:** Furunculosis is an extension of a superficial pyoderma to involve the hair follicles (*folliculitis*). Furunculosis occurs when the infected hair follicles (some of the pores of the skin where hairs are rooted) rupture and spread the infection to the deeper tissues. This type of deep pyoderma generally affects the muzzle (*nasal pyoderma*), chin (*acne* or *chin pyoderma*), pressure points on the elbow, hock, or chest (*callus pyoderma*), and between the toes (*pododermatitis*), although any area of skin may be affected. The affected areas of skin may develop hair loss, bumps (*nodules*), redness, swelling, ulcerations, bleeding sores, blood blisters, scarring, and even deep fissures, wounds, or nodules (*granulomas*) that ooze a watery-bloody or purulent (*pus*) discharge (*fistulous tracts*).

**CELLULITIS:** Cellulitis is an even deeper infection than furunculosis, involving the deepest layer of skin and the underlying subcutaneous tissues. The infection dissects and spreads between the layers of tissue. The affected skin may appear very dark and may become so delicate that it comes off (sloughs) on its own or when the wound is being cleaned, leaving a gaping open sore.

**ABSCESS:** An abscess is a focal infection that becomes walled off from the rest of the body; it becomes filled with pus (an accumulation of white blood cells which fight off the infection, dead tissue, and bacteria). Abscesses are especially common in cats. Bacteria are usually introduced into the deeper layers of tissue from a bite or scratch wound. If the abscess is not treated (drained), it may rupture and ooze pus internally (dangerous to the immediate overall health of the pet) or externally (beneficial). Abscesses occur most often on the face, neck, front legs, and around the tail base and can be quite painful. The affected area is usually swollen, warm to the touch, and red. The animal may be lethargic, unwilling to eat, and have a fever, especially if the abscess contents are seeping internally into the bloodstream.

## TREATMENT

Treatment of deep pyoderma can include one or more of the following: administration of antibiotics (often continuously for several weeks to months because antibiotics take time to reach the outermost layers of the skin), medicated soaks and baths, medicated shampoos, and topical therapies such as specific medicated ointments or creams. Successful management of deep pyoderma hinges on using the correct dose of an effective antibiotic for a long enough period of time and determining and treating the underlying cause. Surgery may be indicated to drain an abscess or in rare cases of localized deep pyoderma. It may be necessary to clip the animal's hair in the affected areas for effective wound care. Your veterinarian may also dispense pain medication for comfort.

## DOs

- Administer the antibiotics according to the prescribed amount and schedule.
- Use proper hygiene. Wear gloves when cleaning wounds.
- Consider having a second opinion from a veterinary dermatologist if the problem is persisting or for the latest treatments unclear. Your veterinarian can refer you to one of these specialists (directory: [www.acvd.org](http://www.acvd.org)).

## DON'Ts

- Do not stop any medication unless directed to do so by your veterinarian.
- Do not use an over-the-counter or prescription ointment, cream, or any other medication without first consulting a veterinarian. Many of these products are either unhelpful or even toxic to cats and dogs.
- Do not miss your follow-up appointment even if the animal's skin condition has improved; evaluating the skin when the pyoderma has cleared may assist the veterinarian in determining an underlying cause.
- Do **not** give ibuprofen, Tylenol, or any other antiinflammatory or analgesic (toxic) without first consulting with your

veterinarian; several human antiinflammatories can be fatal to cats with even a single dose. Ask your veterinarian for pain medication for your pet if it has not been prescribed and you feel it is needed.

### **WHEN TO CALL YOUR VETERINARIAN**

- If the pyoderma does not improve several days after initiating treatment or recurs after a full course of therapy.
- If the pet stops eating and/or becomes weak or listless.
- If the discharge develops a foul odor or pockets of gas (emphysema) develop under the skin (crinkly feel to the skin).

### **SIGNS TO WATCH FOR**

- A reaction to any medication(s), shampoos, or topical products. Symptoms may include vomiting, diarrhea, hives, abnormal behavior, increased itchiness, hair loss, dry skin, and inflamed (red) skin.

### **ROUTINE FOLLOW-UP**

- Commonly 10 to 14 days after the initial diagnosis (sooner if severe); then as needed based on progress and underlying cause.

*Other information that may be useful: "How-To" Client Education Sheets:*

- How to Deal with Severe, Self-Inflicted Skin Erosions
- How to Prevent Licking or Chewing at the Skin
- How to Bathe a Dog or Cat Using Medicated Shampoo

Practice Stamp or Name & Address