

## PYODERMA

Pyoderma is a bacterial infection of the skin that can occur in different layers of the skin. A superficial pyoderma involves the surface layers of the skin and can often be recognized by the transient presence of pustules (pimples). These pustules often rupture and can leave behind a small crust or a bald spot. Folliculitis is a pyoderma where the bacterial infection is in the hair follicle. If this is present, a pustule, crust or hair loss may be evident. Deep pyoderma occurs when the infection is in deeper skin layers, and can sometimes be recognized when pus is expressed from the skin lesions.

*Staphylococcus intermedius* is the most common bacteria seen in animals with pyoderma, however other types of bacteria can be seen but less frequently. Recently, antibiotic resistant bacteria are becoming more of a problem in dogs and cats. Bacterial cultures are needed if a resistant bacteria is suspected, and results are usually available from these tests within 1 week.

Normal animals rarely develop pyoderma, because one of the most important jobs that the skin has is to keep infections out! If the skin is injured, if there is inflammation or any other type of problem with either the skin or the body, then the bacteria can easily take advantage and produce skin infections. These infections can be very itchy.

Pyoderma is usually SECONDARY to some other skin problem (underlying problem).

Allergic animals who scratch and have inflamed skin are very susceptible to pyoderma. These allergies can include:

- 1) atopy / allergy to airborne substances (pollen, dust, molds)
- 2) flea allergy
- 3) Food allergy
- 4) other parasites

The other important factor is when the animal can not fight off the infection normally. This may be due to a number of factors such as:

- 1) drug induced (i.e. corticosteroids)
- 2) allergic (i.e. atopy/airborne allergy, flea allergy, food allergy)
- 3) hormonal (i.e. hypothyroidism, hyperadrenocorticism)
- 4) parasitic (i.e. demodicosis, scabies, fleas)
- 5) keratinization abnormalities
- 6) immune mediated disorders (i.e. pemphigus, lupus)
- 7) fungal infections
- 8) trauma
- 9) neoplasia
- 10) metabolic disorders
- 11) immune deficiency or depression

*Continued on next page*

The best way to be certain if a pyoderma is present is to have skin cytology (Tzanck prep) or a bacterial culture done. Workup for the underlying causes of the pyoderma are variable and depend on the severity, how long it has been present, response to prior treatment, and the clinical impression.

Initial workup for pyoderma can include

- 1) skin scrapings – to screen for parasites
- 2) fungal cultures – to look for fungi
- 3) skin biopsy – can be helpful for hormonal, immune mediated, parasites, fungi, allergy

Deeper or relapsing pyoderma often needs additional diagnostic tests such as:

- 1) complete blood counts, blood chemistry, thyroid blood tests or urinalysis (may need to be cultured) – for hormonal or metabolic problems.
- 2) ACTH response test – to assess adrenal gland function
- 3) food trials to determine if a food allergy is present
- 4) skin biopsy to look for structural abnormalities in the skin or hair

Treatment for pyoderma can also vary. Correction or control of the underlying problem is the primary goal. Most animal with pyoderma will need to be on antibiotics. The length of treatment can vary from 3 weeks to several months. Topical therapy (using ointments, shampoos, rinses, soaks) is also helpful.

Monitoring (recheck examinations / cytology / and sometimes repeated cultures) are essential to follow up since the bacteria can develop resistance if appropriate courses of therapy are not used.

Most animals with pyoderma have a good prognosis, especially if the underlying problem is found and can be corrected/controlled. Deep pyoderma can be much more difficult to control, and the prognosis can be guarded. In some cases of pyoderma, an underlying problem can not be found. Immunoregulatory or ‘immune-stimulating’ drugs can be tried if the pyoderma recurs. There are a few animals who may require antibiotics for the rest of their life, however risk of antibiotic resistance is high in these patients and monitoring is essential.