ACVIM Fact Sheet: Pigeon fever (C. Pseudotuberculosis)

Overview
‘Pigeon fever,’ also known as ‘dryland distemper’ is a bacterial disease of horses originally occurring in specific regions within California, Texas and Nevada. The bacteria, Corynebacterium pseudotuberculosis (C. pseudotuberculosis), has recently been confirmed in Utah, Colorado, Wyoming, Kentucky, Oregon, Idaho and Florida, as well as in Alberta, Canada. Pigeon fever is typically a disease of the late summer and fall months when conditions tend to be dry and dusty and populations of stable, horn and house flies peak. Recent reports suggest year-round occurrence of this disease in some regions.

Bacteria gain entry into the horse through abrasions or wounds in the skin. Flies transmit the disease by carrying the bacteria from horse to horse and from contaminated soil to horse. C. pseudotuberculosis flourishes in manure-contaminated sandy and rocky soils, which serve as a major source of infection. Other means of transmission include direct contact with contaminated pieces of equipment, hands and contaminated hay or bedding. The incubation period, or time between exposure and appearance of clinical signs, is three to four weeks. The number of cases in a region fluctuates significantly from year to year, presumably due to herd immunity as well as environmental factors such as rainfall and temperature.

In the western United States, pigeon fever infection results in external abscesses most commonly, with the chest region and bottom of the abdomen frequently affected. The name ‘pigeon fever’ arises from the large swelling in the chest region, which resembles a pigeon’s breast. The sheath and mammary gland are also commonly affected sites. Less frequently, the inguinal (between hindlimb and body) or axillary (between forelimb and body) regions may develop abscesses. External abscesses may grow as large as 20 cm prior to rupturing. Accompanying clinical signs include edema (tissue swelling) and/or dermatitis along the bottom of the abdomen, weight loss, depressed mentation and fever. Weight loss and depression are more likely to develop with internal abscessation. Sites of internal abscess development include the lungs, liver, and abdominal lymph nodes. Fortunately, internal abscessation is relatively uncommon.

An alternate form of pigeon fever called ulcerative lymphangitis affects the lymphatic vessels of the hindlimbs. This condition appears to occur more often in Texas than in other states. In this painful form of the disease, multiple small abscesses and ulcers develop on the hindlimb along the lymphatic vessels. One or both hindlimbs may be affected, resulting in severe lameness, swelling and cellulitis (diffuse infection of subcutaneous tissues), along with lethargy, fever and anorexia.
**Diagnosis**

History of either a single or multiple slowly-developing abscesses with the characteristic creamy whitish to greenish pus occurring during late summer to fall is supportive of a diagnosis of 'pigeon fever.' Veterinarians may obtain the purulent exudate (pus) from an external abscess or biopsies of affected skin or fluid retrieved from the airway or abdominal cavity of patients believed to have internal abscesses. Bacterial culture and polymerase chain reaction (PCR) provide laboratory confirmation of pigeon fever. Physical examination and bloodwork may be useful in making the diagnosis in some cases. The synergistic hemolysis inhibition (SHI) test evaluates protein titers in a patient’s blood and is particularly helpful in diagnosing the presence of internal abscesses in horses lacking external abscesses. Ultrasound is useful to reveal suspected abscesses either in the lungs and abdomen or deep within the triceps or quadriceps muscles of severely lame horses.

**Treatment & Aftercare**

Treatment of external abscesses is individualized for each patient depending on severity of disease. Mature abscesses may be lanced by your veterinarian and lavaged to remove as much pus as possible. Deep intramuscular abscesses may require ultrasound-guided drain-placement to achieve drainage. It is very important that all material drained and lavaged from the abscesses is collected and appropriately discarded, thus limiting the contamination of the immediate environment. Use of antibiotics in treating external abscesses is only necessary when complicating factors are present, such as persistent fever, depression, lameness, or cellulitis. Use of antimicrobials in uncomplicated cases of external abscesses may prolong the course of disease. Use of hot packs, hydrotherapy or poultices may encourage maturation of external abscesses.

Antimicrobial therapy is indicated in patients with internal and or deep abscesses and in those with ulcerative lymphangitis. Since the bacteria invade cells and are protected by both the pus and the thick capsule surrounding the abscess, treatment may be prolonged (weeks to many months) and should be directed by your veterinarian and/or consulting board certified large animal internal medicine specialist.

Treatment of ulcerative lymphangitis should be immediate and aggressive, initially including a combination of antibiotics and anti-inflammatories. Physical therapy including the application of compression wraps, frequent hydrotherapy, and hand walking are also beneficial in achieving resolution of ulcerative lymphangitis. Antimicrobial treatment is commonly continued beyond resolution of abscesses and ulcers to reduce the incidence of relapse.

Following disease resolution or complete cessation of drainage, the majority of recovered patients will require no aftercare and pose no risk of disease transmission.

**Prognosis**

- Of the three syndromes, prognosis for recovery is best (excellent) for patients with uncomplicated external abscesses.
- Internal abscesses carry a 30–40% risk of mortality as these cases are often challenging to diagnose. Early and accurate diagnosis is important for positive outcomes.
- In severe cases of ulcerative lymphangitis, the prognosis for return to full use is guarded due to recurrent swelling and cellulitis or secondary problems such as laminitis.

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