DISKOSPONDYLITIS
(INFLAMMATION OF THE INTERVERTEBRAL DISKS AND ADJACENT BONE OF THE SPINE)

BASICS

OVERVIEW
- A bacterial or fungal infection of the intervertebral disks and adjacent bone of the spine (vertebral bodies)
- The spine is composed of multiple bones with disks (intervertebral disks) located in between adjacent bones (vertebrae); the disks act as shock absorbers and allow movement of the spine

GENETICS
- No definite predisposition identified
- An inherited immunodeficiency (inability to develop a normal immune response) has been detected in a few cases

SIGNALMENT/DESCRIPTION of ANIMAL

Species
- Dogs; rare in cats

Breed Predilection
- Large- and giant-breed dogs, especially German shepherd dogs and Great Danes

Mean Age and Range
- Mean age —4 to 5 years of age
- Range—5 months to 12 years of age

Predominant Sex
- Males outnumber females by approximately 2:1

SIGNS/OBSERVED CHANGES in the ANIMAL
- Onset usually relatively sudden (acute); some patients have mild signs for several months before examination
- Pain—difficulty rising, reluctance to jump, and stilted gait are most common signs
- Wobbly gait (known as "ataxia")
- Weight loss and lack of appetite (anorexia)
- Lameness
- Draining lesions or tracts
- Single or multiple areas of pain along the spine in more than 80% of patients
- Any disk space of the spine may be affected; the lower back (lumbosacral space) is involved most commonly
- Weakness (known as "paresis") or paralysis, especially in chronic, untreated cases
- Fever in approximately 30% of patients

CAUSES
- Bacterial infection—*Staphylococcus intermedius* is the most common bacterial cause; others include *Streptococcus, Brucella canis,* and *E. coli,* but virtually any bacteria can be causative
- Fungal infection—*Aspergillus, Paecilomyces,* and *Coccidioides immitis*
- Grass-awn migration often is associated with mixed infections, especially *Actinomyces;* tends to affect the second through fourth lumbar (L2–L4) disk spaces and vertebrae
- Other causes—surgery, bite wounds

RISK FACTORS
- Urinary tract infection
- Infection in gums around the teeth (periodontal disease)
- Bacterial heart infection (endocarditis)
- Skin infection (pyoderma)
- Immunodeficiency (condition in which the animal has an inability to develop a normal immune response)

TREATMENT

HEALTH CARE
- Outpatient—mild pain managed with medication
- Inpatient—severe pain or progressive nervous system deficits and signs require intensive care and monitoring
- Patients that cannot walk (nonambulatory patients)—keep on a clean, dry, well-padded surface to prevent the development of "bed sores" (known as "decubital ulceration")

ACTIVITY
- Restricted

DIET
- Normal

SURGERY
- Surgical scrapping (known as "curettage") of a single affected disk space—occasionally necessary for patients that are not responsive to antibiotic therapy
- Goals—remove infected tissue; obtain tissue for bacterial culture and sensitivity and for microscopic (histologic) evaluation
- Relieve pressure on the spinal cord (known as "decompression") by surgically removing a portion of bone in one or more vertebrae (surgical procedures are known as "hemilaminectomy" or "dorsal laminectomy")—indicated when the animal has substantial nervous system problems and spinal cord compression is evident on myelography (a special type of X-rays, where contrast dye is injected into the space around the spinal cord to allow visualization of the spinal cord); when no improvement is seen with antibiotic therapy; also perform surgical scrapping (curettage) of the infected disk space; it may be necessary to perform some type of surgical stabilization of the spine

MEDICATIONS
Medications presented in this section are intended to provide general information about possible treatment. The treatment for a particular condition may evolve as medical advances are made; therefore, the medications should not be considered as all inclusive.

Antibiotics
- Selection based on results of blood cultures and sensitivity testing and *Brucella canis* serum testing (serology)
- Negative culture and serology results—assume causative organism is *Staphylococcus*; treat with a cephalosporin (for example, cefadroxil) for 8 to 12 weeks
- Suddenly progressive signs or substantial nervous system deficits—initially treat with injectable antibiotics (for example, cefazolin)
- Brucellosis—treated with tetracycline and streptomycin or enrofloxacin
- Initial therapy—cephradine; cloxacillin
- Patients that do not respond to initial antibiotic therapy (known as "refractory patients")—clindamycin, enrofloxacin, orbifloxacin

Analgesics
- Signs of severe pain—treated with an analgesic (for example, oxymorphone)
- Taper dosage after 3 to 5 days to gauge effectiveness of antibiotic therapy

FOLLOW-UP CARE

PATIENT MONITORING
- Reevaluate after 5 days of therapy
- No improvement in pain, fever, or appetite—reassess therapy; consider a different antibiotic, aspirate the affected disk space by passing a sterile needle through the skin and using a syringe (known as "percutaneous aspiration") or by surgery
- Improvement—evaluate clinically and with X-rays every 4 weeks.

PREVENTIONS AND AVOIDANCE
- Early identification of predisposing causes and prompt diagnosis and treatment—help reduce progression of clinical signs (such as fever, pain) and nervous system signs

POSSIBLE COMPLICATIONS
- Spinal cord compression secondary to development of excessive bone and scar tissue
- Fracture or dislocation of the backbone (vertebra)
- Inflammation of the membranes of the spinal cord (known as "meningitis") or inflammation of the spinal cord and its surrounding membranes (known as "meningomyelitis")
- Abscess involving the dura mater (epidural abscess)

EXPECTED COURSE AND PROGNOSIS
- Recurrence is common if antibiotic therapy is stopped prematurely (before 8 to 12 weeks of treatment)
- Some patients require prolonged therapy (1 year or more)
- Prognosis—depends on causative organism and degree of spinal cord damage
- Mild or no nervous system dysfunction (dogs)—usually respond within 5 days of starting antibiotic therapy
- Substantial weakness (paresis) or paralysis (dogs)—prognosis guarded; may note gradual resolution of nervous system dysfunction after several weeks of therapy; treatment warranted

- *Brucella canis*—signs usually resolve with therapy; infection may not be eradicated; recurrence common

KEY POINTS

- A bacterial or fungal infection of the intervertebral disks and adjacent bone of the spine (vertebral bodies)
- Recurrence is common if antibiotic therapy is stopped prematurely (before 8 to 12 weeks of treatment)
- Response to treatment is very important in determining need for further diagnostic or therapeutic procedures
- Immediately contact your pet's veterinarian if clinical signs progress or recur or if nervous system deficits develop