Treatment and Prognosis

Treatment of otitis media/interna is most successful when started early in the course of the disease. Chronic cases are often refractory to treatment or recur after apparent remission. When otitis externa accompanies otitis media/interna, the ear should be examined closely for mites and foreign bodies, such as plant awns, and the discharge cultured for bacteria. Many aerobic and anaerobic bacteria have been cultured from the ears of animals with otitis media/interna, and mixed infections are common. Pathogens that warrant mentioning because of their frequency of isolation include *Malassezia* spp and*Pseudomonas* spp in small animals; *Streptococcus suis* in pigs; *Streptococcus* spp in horses;*Mycoplasma* spp in goats; and *Mannheimia haemolytica*, *Pasteurella multocida*, *Histophilus somni*, and*Mycoplasma bovis* in cattle. *M bovis* is particularly problematic in dairy calves fed unpasteurized waste milk from cows with intramammary infection. However, other pathogens, such as coliform bacteria,*Staphylococcus* spp, *Neisseria* spp, corynebacteria, and *Arcanobacterium pyogenes* are frequently isolated from the ears of affected animals. Isolation of a bacterial pathogen(s) or mites from the ear helps direct initial treatment but does not necessarily imply causation of otitis media/interna, because the same organisms can be isolated from the external ear canals of apparently healthy animals.

Ear mites, when present, should be treated with an appropriate systemic antiparasitic agent (seeAntiparasitics for Integumentary Disease). Topical acaricides can be instilled into the external ear canal once it is cleaned. Bacterial infection should be treated with appropriate systemic antimicrobial agents (seeAntibacterials for Integumentary Disease), based on culture and susceptibility test results. If the tympanic membrane is intact, a culture can be obtained via a myringotomy incision with a tom cat catheter. It may be possible to aspirate fluid. If not, 0.5 mL of sterile water can be instilled into the bulla and the fluid aspirated for culture. No antimicrobial agents are labeled for treatment of otitis media/interna in food-producing animals in the USA, so extra-label drug use guidelines must be followed and prohibited drugs avoided.

In addition to antimicrobial and/or anthelmintic therapy, the external ear canal should be cleaned and flushed if otorrhea or otitis externa is present; physiologic saline or dilute antiseptic solutions, such as iodine, chlorhexidine, or hydrogen peroxide, are commonly used for flushing. Steroids or NSAIDs can help reduce inflammation and pain associated with otitis media/interna. Corneal ulceration, aural hematomas, and concurrent infections should be treated appropriately, if present, and the animal protected from further self-injury.

If the tympanic membrane is intact and otitis media/interna does not respond sufficiently to systemic antimicrobial and anti-inflammatory therapy, myringotomy (perforation of the tympanic membrane) can be performed to relieve pressure and enable culture and drainage of fluid from the tympanic cavity. In chronic, nonresponsive or recurrent cases of otitis media/interna, it may be necessary to perform bulla osteotomy or total ear canal ablation to establish sufficient drainage and enable effective lavage. Tympanostomy tubes can be implanted into the tympanic membrane after myringotomy to allow

continuous drainage in Cavalier King Charles Spaniels with primary secretory otitis, but such tubes are not useful to drain more purulent exudate.

Early diagnosis and treatment of otitis media/interna can result in complete resolution of infection and clinical signs. However, with severe, chronic, or nonresponsive cases, clients should be advised that neurologic deficits and hearing loss may persist even if infection is resolved. In small animals, otitis media may be resolved only by surgery (total ear canal abalation), particularly if multidrug-resistant bacteria are present.

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