

# Otitis media and interna in dairy calves : a retrospective study of 29 cases

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## Introduction

Otitis media is a common disease in calves. Although its prevalence has not yet been established, it is probably underestimated. Clinical signs of otitis media include a dropped ear caused by facial paralysis, head tilt, and purulent auricular discharge. Prognosis is variable. Poor response to treatment has been reported to be associated with chronicity, intracranial invasion, multisystemic disease and etiological agent. Recently, *Mycoplasma* spp has been reported as a common cause of otitis in calves. The objective of this retrospective study was to review the epidemiological data, clinical findings, laboratory data, medical imaging results, and outcomes of dairy calves diagnosed with otitis media or interna that were referred to the Centre Hospitalier Universitaire Vétérinaire (CHUV) of the Université de Montréal.

## Materials and Methods

Medical records of 29 calves admitted to the CHUV between February 2003 and April 2010 with a final diagnosis of otitis media or otitis interna were reviewed. Case selection was made on the basis of physical examination results (ear droop, head tilt, or purulent auricular discharge, or some combination thereof) or necropsy results. Clinical diagnosis was confirmed by tympanic bullae digital radiography, tomodesitometry (CT), ultrasonography, or necropsy.

## Results

Age at admission ranged from one to 24 weeks (median, six weeks). The majority (n = 17) of calves were referred during winter. Clinical signs included unilateral (n = 7) or bilateral (13) droopy ear, palpebral paresis (16), head tilt (14), purulent aural discharge (8), stiff neck (3), vestibular strabismus (2), regurgitation (2), opisthotonos (2), facial hyperesthesia (2), dysphagia (1), and abnormal

nystagmus (1). Intranasal endoscopic examination of five animals revealed nasopharyngeal collapse (n = 4) and laryngeal hemiplegia (n = 2). Cerebrospinal fluid (CSF) samples were abnormal for all seven calves in which the analysis was performed. Swab specimens were obtained from the external ear or tympanic bullae of 12 calves; *Mycoplasma bovis* was cultured from all but one specimen, from which *Mycoplasma arginini* was cultured. Radiographs of the tympanic bullae were performed in 24 calves, tomodesitometry (CT) in three calves and ultrasonography in four calves. On the basis of results of diagnostic imaging or necropsy, 69% of the cases were classified as chronic. Mean duration of treatment was 23.3 days. Prognosis for clinical recovery was 75%.

## Significance

Most cases of otitis media and otitis interna in this study were chronic, although some cases were subclinical. The evidence of nasopharyngeal collapse, laryngeal hemiplegia, regurgitation, and dysphagia in a few cases is consistent with damage to cranial nerves IX, X, and XI. A few calves had abnormal CSF results without concurrent osteolysis observed on radiographs, suggesting extension of the infection by a pathway other than osteomyelitis. Ultrasonography was considered useful for the overall diagnosis of otitis media and for detailing abnormalities such as differentiation of fluid from exudate in the bulla and evaluation of trabeculae integrity. *Mycoplasma bovis* was still predominant as an etiological agent, although most of the calves had received one or more antimicrobial drugs labeled for the treatment *Mycoplasma* spp infections before referral. The fact that *Mycoplasma* spp were isolated in spite of previous treatment could be due to antimicrobial resistance or an ineffective treatment regimen. Clinical cases benefit from a thorough clinical exam for detection of neurological complications, such as nasopharyngeal collapse and meningitis.