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Infective endocarditis in 13 cats☆

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Abstract *Introduction:* To describe the clinical presentation, clinicopathological abnormalities and outcomes of a series of cats diagnosed with infective endocarditis (IE) at two tertiary care referral institutions.
Animals: Thirteen client-owned cats presenting to the cardiology or emergency services of tertiary referral institutions with a diagnosis of endocarditis based on the modified Duke criteria.

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Materials and methods: Retrospective case series. Medical records were reviewed to extract relevant data. In addition, cases that had cardiac tissue available were evaluated by polymerase chain reaction for the presence of *Bartonella* DNA.
Results: Prevalence of feline IE was 0.007%. Cats with endocarditis tended to be older (median age: 9 years, range: 2—12 years) and no sex or breed was overrepresented. Commonly encountered clinical signs included respiratory distress (n = 5) and locomotor abnormalities of varying severity (n = 5). Echocardiographic examination detected valvular lesions consistent with endocarditis on the aortic (n = 8) or mitral (n = 5) valves. Nine cats were diagnosed with congestive heart failure at the time of endocarditis diagnosis. Overall, prognosis was grave with a median survival time of 31 days.
Conclusions: In contrast to dogs, cats with IE typically present with clinical signs consistent with cardiac decompensation and locomotor abnormalities suggestive of either thromboembolic disease or inflammatory arthritis. Given the advanced state of disease when diagnosis typically occurs, prognosis is grave.
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Abbreviations

AT	arterial thromboembolism
BAPGM	*Bartonella* alpha-proteobacteria growth media
IE	infective endocarditis
NCS-VH	North Carolina State — Veterinary Hospital
PCR	polymerase chain reaction
UF-CVM	University of Florida — College of Veterinary Medicine

Introduction

The clinical course of infective endocarditis (IE) in dogs has been described in case reports, retrospective studies as well as a prospective study [1—8]. Infective endocarditis represents approximately 0.05—0.08% of canine general admissions to referral hospitals and most commonly affects the aortic or mitral valves [2,3]. Large breed male dogs appear to be overrepresented and subaortic stenosis is a known risk factor for development of IE [2,3,5,6]. The development of strict diagnostic criteria incorporating echocardiographic data has greatly aided in the diagnosis of IE in humans [9] as well as in dogs [3]. Microbiological diagnosis has traditionally been based on the isolation of organisms from blood cultures, but the increasing recognition of *Bartonella* and other fastidious microorganisms as agents in blood culture negative cases suggests that other techniques, namely polymerase chain reaction (PCR) and serology, should also be considered as part of the diagnosis of IE [3,10—12].

In contrast, feline IE is uncommonly reported and has only been featured in case reports and one case series [13—25]. In a survey of feline IE cases pulled from the coded veterinary medical database at Purdue University, Sisson reported a prevalence of between 0.006% and 0.018% [26]. In septic cats, the prevalence of IE is likely much higher [27]. Contrary to canine IE reports that found respiratory distress to be present in only 20—28% of dogs on initial examination [2,3], the overwhelming majority of cats described in IE case reports presented for respiratory distress [14,15,17,19,20,23—25]. Systolic murmurs are common in these cats and occasional arrhythmias have been documented. With the exception of two reported feline cases [16,19], IE appears to affect the aortic and mitral valves exclusively. Bacteria cultured from the blood or valvular tissue of cats with IE have included similar pathogens to dogs such as *Staphylococcus*, *Streptococcus*, and *Escherichia coli* [14,15,19,25]. As in dogs, *Bartonella* species appear to be a common cause of feline IE [13,19,21—23].

In an effort to further characterise feline IE, we collected a series of feline IE cases to describe the prevalence, clinical presentation and clinical course of this disease in cats presenting to two tertiary care facilities. Based on the data collected as well as a review of previously proposed diagnostic criteria for canine IE, we propose feline-specific diagnostic criteria to aid in the antemortem diagnosis of feline IE.

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