

Endocarditis

Describe the appearance of infective endocarditis lesions by gross pathology and echocardiography

Gross lesions

- Vegetative lesions – roughened, white to yellow, cauliflower-like, frequently hemorrhagic

Echocardiography

- May miss early or ulcerative type lesions
- Thick, irregular valve lesion that is independently oscillating
- Echo for assessing heart size and function
- Can ID severity and presence of valve regurgitation or stenosis
- Can check for predisposing factors (SAS)

List the predisposed valves to infective endocarditis in small animals

Mitral and aortic valves are most commonly affected in small animals

- Atrial surface of the mitral valve
- Ventricular surface of the aortic valve

Interpret common physical examination and diagnostic test findings to arrive at a diagnosis of infective endocarditis

Pathophysiology

- Lesions lead to valve regurgitation commonly at the mitral or aortic valve
- Possibility of a septic emboli
- Febrile – may be undulating
- May cause mural infection/infarction
- Cardiac arrhythmias
- Rarely may cause AV block
- Patients can present in septic shock or progress to septic shock
- Thromboembolic injury to other tissues is common
- Metastatic infection to other organs/tissue (kidney, CNS, joints)
- AKI
- Immune-mediated disease phenomenon
 - Polyarthrititis
 - Glomerulonephritis
 - Vasculitis

Possible Clinical Exam Findings

- Historical or current infection
- Immunosuppressed (disease or drug)
- Fever
- Polyarthritis
- Lethargic/ill
- New heart murmur
 - Diastolic if Ai, systolic if MR, systolic if functional from a fever
- Tachycardia, arrhythmias, hyperkinetic pulses due to severe Ai or septic shock, CHF

Clinical exam findings in cats

- Respiratory distress due to CHF
- Locomotor abnormalities
- MST was 31 days

Diagnostic tests

- Auscultation: functional vs regurgitant murmurs
- Radiographs: evaluate for CHF, may have cardiomegaly if long-standing
- CBC: Possible anemia, leukocytosis, neutrophilia, left-shift, monocytosis
- Biochemical profile: possible azotemia, hyperglobulinemia, hyperbilirubinemia, hypoglycemia, hypoalbuminemia
- Urinalysis: possible pyuria, proteinuria, bacteriuria
- Urine culture may be positive
- Cardiac troponin-I may be elevated
- Blood cultures are the most important laboratory test!!

High suspicion of infectious endocarditis if there is a new heart murmur, evidence of inflammation and positive blood cultures

List predisposing conditions that may make infective endocarditis a more likely diagnosis

- Immunosuppressive therapy
- Subaortic stenosis
 - Dogs with SAS should be treated expediently for infections and in times of suspected bacteremia

Treatment

- Bactericidal abx that penetrate fibrin (clavamox, Baytril, doxycycline)
- IV therapy if possible
- Long-term tx >8 weeks

- Base tx on culture when possible
- Change abx tx if no response within 72hr
- Antiplatelet drugs (clopidogrel) to prevent thrombosis