Lethargy, Inappetence, & Increased Respiratory Effort in a Cat

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Lethargy, Inappetence, & Increased Respiratory Effort in a Cat

A 5-year-old, neutered male domestic shorthaired cat was presented for evaluation of a 48-hour history of lethargy, inappetence, and increased respiratory effort.

HISTORY
Reduced interaction and hiding behaviors were noted by the owner about 2 days before presentation. The cat had not eaten in 24 hours and had an increased abdominal component to its respiration. The cat had been healthy, was on no medications, and had received scheduled vaccinations 15 months earlier; at that time the examination was unremarkable.

EXAMINATION
The cat was alert, responsive, and hydrated, with pink mucous membranes and normal capillary refill time. Mild dental disease was noted.

The heart rate was 170 beats/min and regular. An extra diastolic heart sound was detected, but no murmur was evident. Femoral pulses were strong and synchronous. The jugular venous pulse was normal. The respiratory rate was 32 breaths/min with a mild increase in effort. Bronchovesicular sounds were increased over all lung fields.

DIAGNOSTICS
Dual-view radiographs (Figure 1) and an ECG (Figure 2) were obtained at presentation.

ASK YOURSELF...
- What examination, ECG, and radiographic findings suggest heart disease?
- What treatment if any should be instituted based on the initial diagnostic findings?
- What role might echocardiography play in reaching a diagnosis?

ECG = electrocardiogram
DIAGNOSIS: Feline cardiomyopathy consistent with restrictive cardiomyopathy

The ECG and radiographic findings were consistent with heart enlargement and congestive heart failure.

DEFINITIVE DIAGNOSIS

An echocardiogram (Figure 3) obtained 3 days after presentation demonstrated moderate to severe atrial enlargement, normal to mild left ventricular wall thickening, a normal left ventricular chamber, and a fibrous/fibromuscular band of tissue traversing the left ventricular lumen (see Echocardiogram Summary). Doppler study of the diastolic mitral inflow revealed an elevated E:A ratio (between early and late ventricular mitral filling velocity), rapid deceleration time of the E-wave, and elevated mitral inflow velocity in the absence of significant mitral regurgitation. No blood flow gradient across the fibrous LV band was detected. These findings are most consistent with restrictive-type cardiomyopathy.

TREATMENT

Treatment was initiated with the loop diuretic furosemide at 6.25 mg PO Q 12 H and the angiotensin-converting enzyme inhibitor (ACE-I) benazepril at 1.25 mg PO Q 24 H. Because both drugs have the potential to adversely affect renal function, a baseline renal panel was conducted.

ACE-I = angiotensin-converting enzyme inhibitor; BUN = blood urea nitrogen; ECG = electrocardiogram

Right parasternal long-axis echocardiogram showing the left atrium (LA) and left ventricle (LV) revealed a fibrous band of tissue (arrow) spanning the LV cavity. The inset shows a spectral pulsed-Doppler tracing of transmitral inflow.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Measurement (cm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Left atrial diameter (LAd)</td>
<td>1.70</td>
</tr>
<tr>
<td>Aortic diameter (Ao)</td>
<td>0.81</td>
</tr>
<tr>
<td>Intraventricular septum diameter (IVSd)</td>
<td>0.44</td>
</tr>
<tr>
<td>Left ventricular posterior wall diameter (LVPWd)</td>
<td>0.55</td>
</tr>
<tr>
<td>Left ventricular end-diastolic diameter (LVDd)</td>
<td>1.20</td>
</tr>
<tr>
<td>Left ventricular systolic diameter (LVDs)</td>
<td>0.72</td>
</tr>
</tbody>
</table>
before treatment was initiated and again 3 days later. Adverse reactions to either drug typically occur within 3 to 5 days of therapy initiation.

Blood urea nitrogen (BUN) and creatinine levels before and after therapy were unremarkable (BUN—pretreatment, 27 mg/dL; posttreatment, 24 mg/dL; normal, 15–32 mg/dL; creatinine—pretreatment, 1.6 mg/dL; posttreatment, 1.4 mg/dL; normal, 1.0–2.0 mg/dL).

OUTCOME

The cat’s respiratory rate and effort were normal 3 days after treatment was initiated, and according to the owner the cat was eating and acting normally. Re-evaluation of the patient, including physical examination, ECG, and echocardiogram, is indicated in 3 to 6 months. Thoracic radiographs are unlikely to be beneficial if the patient has no clinical signs consistent with decompensated congestive heart failure.