Creature, a 10-year-old Thoroughbred mare, presented to the Large Animal Hospital of the University of Florida Veterinary Medical Center after Creature’s owner, a veterinarian, auscultated a “splashing” sound over the heart (FIGURE 1). Three days earlier, the owner had noticed that Creature was exercise intolerant and more cooperative than usual but was normothermic and otherwise clinically normal. At this time, a complete blood count and a chemistry panel had been submitted, and the results were within normal limits. Creature was treated with penicillin G and flunixin meglumine and then referred to our hospital.

During the physical examination, Creature was bright, alert, and responsive. The vital signs were as follows:

- Heart rate: 40 bpm (normal: 28 to 40 bpm)
- Respiratory rate: 24 breaths/min (normal: 10 to 14 breaths/min)
- Temperature: 99.8°F (normal: 100°F [mare]; 99.7°F [stallion])
- Weight: 1005.4 lb (457 kg)

Thoracic auscultation revealed an audible pericardial friction rub that was loudest over the left heart (FIGURE 2). A palpable precordial thrill on the left thoracic wall adjacent to the heart was evident as well. No diastolic murmur was auscultated; only a harsh friction rub could be heard. The other results of the physical examination were within normal limits.
An echocardiogram revealed a small amount of pericardial fluid adjacent to the right auricle (FIGURE 3), confirming a diagnosis of acute pericarditis. There was no evidence of endocarditis, and no vegetative lesions were seen on the valve leaflets. A trace amount of aortic insufficiency was considered clinically insignificant because the jet of insufficiency was extremely small.

**Treatment**

Creature’s treatment recommendation included an oral course of systemic dexamethasone. The dose was tapered over a 2-week period as follows: 30 mg q24h for 3 days, 20 mg q24h for 3 days, 10 mg q24h for 3 days, and 10 mg every other day for 3 days. The owner was advised to continue performing cardiac auscultation throughout the therapy to detect signs of improvement or worsening of the friction rub. Monitoring for signs of lameness or increased digital pulses was also recommended because laminitis has been associated with corticosteroid administration.

**Follow-Up**

A follow-up examination, including a troponin I level test and echocardiography, was recommended after completion of corticosteroid therapy. During a follow-up phone call, Creature’s owner was pleased to report that the clinical signs had completely resolved: there was no more exercise intolerance or pericardial friction rub. When her schedule allowed, the owner planned to bring Creature in for a follow-up echocardiogram.

**Discussion**

Pericardial friction rub is the hallmark of acute pericarditis and is caused by friction between abnormal serosal surfaces of the heart and pericardium. In some horses with a small amount of pericardial effusion (FIGURE 4), the pericardial friction rub can mimic a cardiac murmur and have a palpable precordial thrill. With considerable pericardial effusion, cardiac auscultation may reveal tachycardia and muffled heart sounds. Accumulation of pericardial effusion can also lead to increased intrapericardial pressure, preventing the ventricles from properly filling (cardiac tamponade). This results in low stroke volume, which can lead to (1) ineffective pumping of blood, (2) circulatory shock, and (3) death. Pericardial effusion can have viral (e.g., equine viral arteritis, influenza) or bacterial (e.g., Streptococcus equi infection) causes, or it can be idiopathic. Viral testing and titers ruled out some viral diseases in this case; the results of a troponin I level test, complete blood count, and serum chemistry profile were all within normal limits. However, the results of a Streptococcus M protein influenza test and an equine herpesvirus test were mildly positive, which was consistent with Creature’s vaccination history. Despite the diagnostic testing, the cause of Creature’s pericardial effusion was not determined.

Other causes of exercise intolerance include respiratory...
disease and other cardiac problems. Other diagnostic tests may include thoracic radiography, upper airway endoscopy, and dynamic treadmill testing with concurrent upper airway endoscopy and stress electrocardiography.

References