



BOSTON WEST
VETERINARY EMERGENCY & SPECIALTY

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Case Study: Left Sided Congestive Heart Failure at Boston West

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Presenting Complaint

Remi, a 4-year-old neutered male Miniature Poodle, presented for trouble breathing. His family reported a cough occurring 3–4 times daily for the past two weeks. Notably, he had received three vaccines, together two weeks prior, deviating from his usual two.

Patient Overview:

Name: Remi

Species: Canine

Sex: Neutered Male

Age: 4 years

Breed: Miniature Poodle

Clinical History

Remi was initially evaluated by his primary care veterinarian the same morning for panting and coughing. His vitals included a heart rate of 144 bpm, panting respiratory rate, and a temperature of 100.0°F. Physical exam revealed no heart murmur, normal bronchovesicular sounds, a moderate hack, and mild abdominal discomfort. His CBC and most chemistry values were within normal limits, except for mild electrolyte imbalances. He received a Vitamin B12 injection and was prescribed Cerenia and Clavamox. There was no significant prior medical history.

Initial Presentation

Later that day, Remi presented to Boston West in severe respiratory distress. His mucous membranes were pale with a CRT >2 seconds, and his respiratory rate exceeded 100 bpm. He had serous nasal discharge, muffled heart sounds, and a suspected grade II–III heart murmur, though auscultation was limited due to his distress. A TFAST exam revealed severe bilateral B-lines and an enlarged left atrium to aorta ratio without pericardial effusion.



Initial Stabilization

Remi received flow-by oxygen during his exam and IV catheter placement. He was administered butorphanol and furosemide IV without initial improvement and was moved to an oxygen cage at 40%. An additional dose of furosemide was given, but due to minimal response, a thoracocentesis was attempted. Only a minimal amount of hemorrhagic fluid was retrieved. Suspecting severe pulmonary edema, serial thoracic radiographs were performed with oxygen breaks between views.

Diagnosis

Thoracic radiographs showed a diffuse interstitial to alveolar pulmonary pattern, most prominent in the caudal dorsal lungs. Cardiomegaly and pulmonary venous distention were suggestive of cardiogenic pulmonary edema due to decompensated left-sided heart failure, though a small pneumothorax raised consideration for trauma or noncardiogenic causes. Venous blood gas and PCV/TS supported dehydration and possible early renal compromise.



A recheck of thoracic radiographs the next day showed resolved pulmonary edema and pneumothorax, so Remi was discharged with oral pimobendan and furosemide, with instructions for follow-up echocardiography after the weekend.



Conclusions and Implications

Remi returned within 24 hours due to difficulty administering medications, poor appetite, polyuria/polydipsia, and worsening respiratory effort. He received an IM injection of furosemide and was placed in an oxygen cage, then transferred to Blue Pearl Waltham for cardiology evaluation. Repeat imaging revealed recurrent pulmonary edema.

Echocardiogram findings included an unclassified cardiomyopathy with mild hypertrophy and reduced left ventricular function, possibly related to ischemic heart disease or vaccine-related systemic response. There was moderate mitral regurgitation, a severely enlarged left ventricle, and mild pulmonary hypertension. Occasional second-degree AV block and ST segment changes were also noted.

That evening, Remi became bradycardic and experienced respiratory arrest. Despite initial response to atropine and furosemide, he suffered cardiac arrest. His family elected DNR, and he was not resuscitated. This case highlighted the complexity and unpredictability of congestive heart failure in a young dog with no prior cardiac history or murmur.

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Boston West Veterinary Emergency & Specialty is a 24/7 emergency and specialty hospital located in Natick, Massachusetts. As part of the Ethos Veterinary Health network, we provide advanced, collaborative care to pets throughout the Greater Boston area. Our board-certified specialists and experienced emergency clinicians offer services in Internal Medicine, Surgery, Emergency/Critical Care, Diagnostic Imaging, and Anesthesia. We are committed to working closely with primary care veterinarians to ensure each patient receives personalized, comprehensive care. Learn more at

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