What’s the Protocol?
Managing Dogs with Severe Heartworm Disease

Fortunately, most infected dogs have no clinical signs or only mild signs of heartworm disease (HWD) and tend to undergo adulticide therapy with few major complications. The likelihood of complications associated with HWD increases with the chronicity of infection. Prognosis is dependent on stabilization, the ability to administer subsequent adulticide therapy and the ability of the family to commit to treatment of chronic conditions.

Following is a brief overview of these complications, including clinical signs, diagnosis and treatment. For information on drug dosages, please visit www.heartwormsociety/treating-severe-HWdisease.

PULMONARY HYPER-TENSION (PH)
What it is: Increased pulmonary vascular resistance and obstruction
Cause: Chronic, untreated HWD leads to pulmonary vascular endothelial injury, remodeling, and dysfunction; physical obstruction by worms also contributes
Common clinical signs: Lethargy, shortness of breath, cyanosis and/or syncope
How to diagnose: Echocardiographic evidence of right-heart remodeling ± estimation of pulmonary pressures if tricuspid or pulmonary valve insufficiencies present
Treatment: Sildenafil, rest and oxygen as needed; anticoagulant therapy when there is high suspicion of HW-PTE (e.g. cyanosis and collapse 3-21 days after adulticide or visualization of thrombus) and no contraindications

CAVAL SYNDROME
What it is: THrombus formation from dead and dying worms; thrombi and worm fragments may stay in place or embolize
Cause: Worm death, which may occur 3-21 days after adulticide administration or spontaneously
Common clinical signs: Lethargy, shortness of breath, cyanosis and/or syncope
How to diagnose: Echocardiographic assessment for PH, which is usually present (see above); rarely may see thrombus in pulmonary trunk or branches
Treatment: Sildenafil, rest, corticosteroids and oxygen if needed; anticoagulant therapy when there is high suspicion of HW-PTE (e.g. cyanosis and collapse 3-21 days after adulticide or visualization of thrombus) and no contraindications

RIGHT-SIDED HEART FAILURE (R-HF)
What it is: PH puts chronic pressure load on the right heart, leading to right ventricular failure
Common clinical signs: Lethargy, abdominal distension, shortness of breath, jugular venous distension and/or pulsation, syncope
How to diagnose: Echocardiography shows right-sided heart remodeling; presence of transudate or modified transudate cavitary effusions
Treatment: Mechanical removal of effusions, diuretic, pimobendan, and sildenafil (to treat underlying PH); also consider spironolactone and/or angiotensin-converting-enzyme inhibitor

For more information, visit heartwormsociety.org