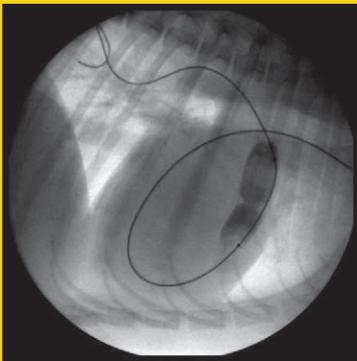


What SPECIAL CARE is needed once my dog is home after balloon valvuloplasty?

It is important that the small incision on the neck be kept clean and dry. A special diet is not required. Exercise should be restricted until the incision is healed.

Why does my dog still have a heart murmur after balloon valvuloplasty?

The heart murmur is created by turbulent blood flowing through the abnormal pulmonic valve leaflets. Even with a successful balloon valvuloplasty, bloodflow will not be completely normal through the pulmonic valve leaflets. Most dogs will have a murmur even after successful balloon valvuloplasty.



Full inflation of the balloon catheter during balloon valvuloplasty.

Will my dog's heart return to normal after balloon valvuloplasty?

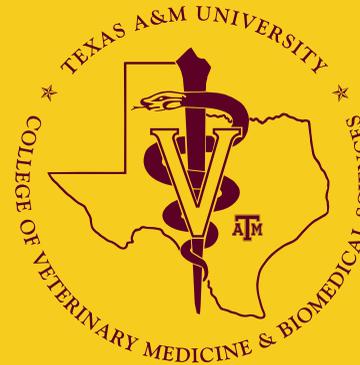
In most cases, clinical signs dramatically improve after surgery. It takes much longer for the heart to return to normal, and, in fact, most changes remain permanently. A recheck echocardiogram is recommended **3–6 months** after balloon valvuloplasty. Rechecks may be repeated on an annual basis to monitor heart size and function.

Will a balloon valvuloplasty work in every case?

Rarely, the coronary arteries develop abnormally and encircle the pulmonary artery causing a narrowing or stricture. This occurs most often in bulldogs and boxers. If abnormal coronary arteries are suspected on the echocardiogram, a coronary angiogram is performed under anesthesia. Balloon valvuloplasty cannot be performed in dogs with abnormal coronary arteries, significant **annular hypoplasia** or **supravalvular stenosis**. As high as 15–20% of patients that appear to have favorable anatomy and a technically successful procedure derive minimal benefit from the procedure.



To find out about Hulk's story, visit: cvm.tamu.edu/vscs/cardiology/testimonials



TEXAS A&M
UNIVERSITY

**Department of Veterinary
Small Animal Clinical Sciences**

**College of Veterinary Medicine
& Biomedical Sciences**

Texas A&M University
4474 TAMU

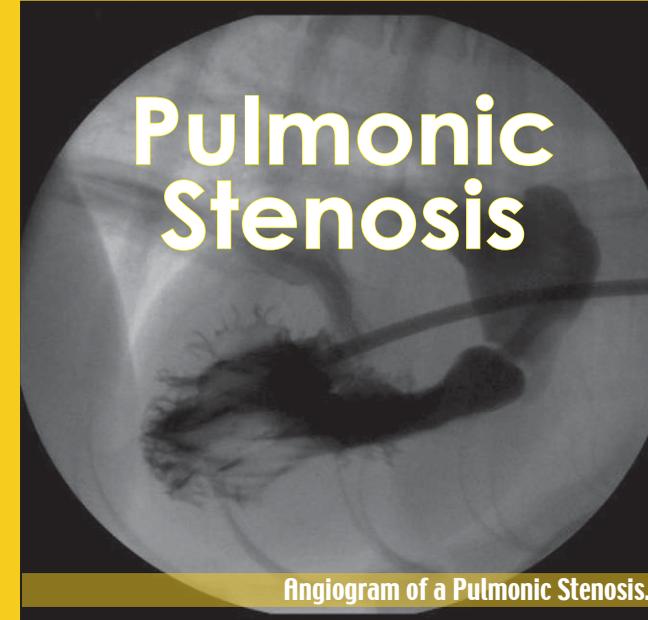
College Station, TX 77843-4474

Tel 979.845.2351

Fax 979.845.6978

www.cvm.tamu.edu/vscs/cardiology

Client Information Series



Angiogram of a Pulmonic Stenosis.



Texas A&M University
Veterinary Medical
Teaching Hospital
Cardiology

What is pulmonic stenosis?

Pulmonic stenosis is a congenital heart defect commonly found in certain dog breeds including the English and French bulldog, boxer, miniature schnauzer, West Highland white terrier, Chihuahua and mastiff.

Normally, the pulmonic valves have three thin leaflets of tissue which close to form a tight seal. When blood is pumped out of the right side of the heart, the three leaflets move out of the way to allow the blood to pass.

The most common form of pulmonic stenosis occurs when the three leaflets are thickened and fused along their borders causing an obstruction to normal blood flow. In some dogs, the ring of tissue surrounding the pulmonic valve leaflets is too narrow. This is called **annular hypoplasia**.

Rarely, dogs will have a narrowing in the pulmonary artery above the pulmonic valve leaflets called **supravalvular pulmonic stenosis**.

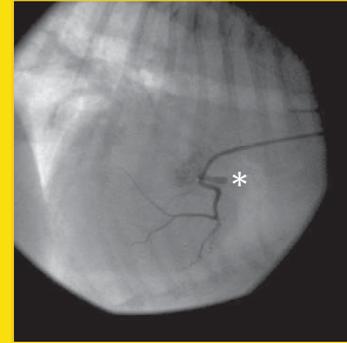
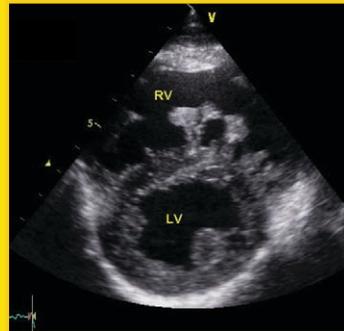
How is pulmonic stenosis diagnosed?

Dogs with pulmonic stenosis have a characteristic murmur that is typically heard at your puppy's first visit to the veterinarian. The obstruction of bloodflow through the abnormal valve leaflets or narrowed tissue causes the murmur. **Xrays and ultrasound (echocardiogram)** show enlargement of the right side of the heart. An echocardiogram is required to diagnose the severity of pulmonic stenosis. Dogs with mild to moderate pulmonic stenosis do not typically develop clinical signs or require an intervention.

What are the clinical signs?

Commonly, puppies with pulmonic stenosis will not have any clinical signs. Some dogs have exercise intolerance. **Collapse**, also called **syncope**, may occur with excitement or exercise, and is similar to fainting. In severe cases, the right side of the heart will fail causing the abdomen to become distended with fluid.

Echocardiogram of a dog with severe pulmonic stenosis with significant right ventricular (RV) enlargement.



Coronary Angiogram

The abnormal coronary artery causing pulmonic stenosis is labeled (*).

What are the treatment options for pulmonic stenosis?

Dogs with severe pulmonic stenosis and clinical signs may benefit from an interventional procedure.

Balloon valvuloplasty

This procedure is performed in dogs with valvular pulmonic stenosis. First, a catheter is placed into the jugular vein in the neck. The catheter is directed into the right side of the heart and a contrast study (**angiogram**) is performed to determine the location and severity of the pulmonic stenosis. A catheter with a balloon on the end is then placed across the pulmonic valve leaflets, and the balloon is inflated to open the valve.

Surgery

Surgical repair of pulmonic stenosis can be performed in select dogs with supravalvular pulmonic stenosis or annular hypoplasia. It is only available at hospitals with personnel trained to perform cardiac surgery; some centers perform this with **inflow occlusion**.

Can pulmonic stenosis increase in severity in my dog?

The severity of pulmonic stenosis can increase until a dog reaches mature body weight.

Will my dog need heart medication?

Medications are typically prescribed following a balloon valvuloplasty. A beta blocker is prescribed for at least six months following the procedure to assist the heart in returning to normal size and to maintain the heart rate within a normal range. Some dogs may require additional heart medications or life-long medication.

Should a dog with a pulmonic stenosis be used for breeding purposes?

Pulmonic stenosis is considered a heritable disease that can be passed to puppies.