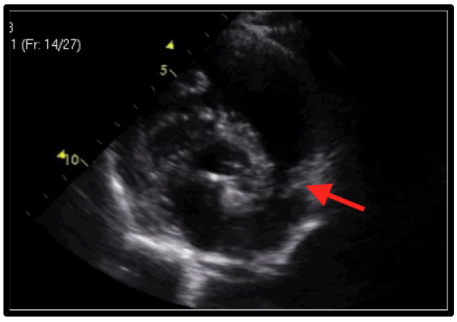
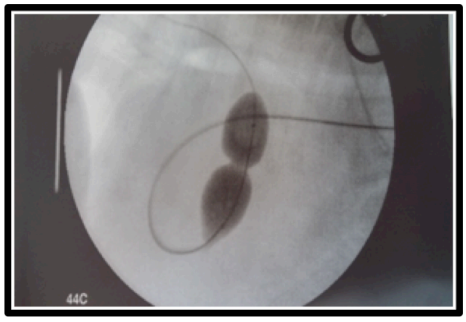
ROCKY MOUNTAIN
VETERINARY CARDIOLOGY, P.C.





What is Balloon Valvuloplasty?

Balloon valvuloplasty is a procedure that is used to alleviate or reduce the degree of obstruction associated with certain cardiac conditions. Primary cardiac conditions that are managed with balloon valvuloplasty include congenital pulmonic stenosis, mitral stenosis, tricuspid stenosis, or more rare conditions (cor tritriatum or pathologic strictures). By performing this procedure, we attempt to reduce the amount of obstruction to blood flow created by the mal-development of certain heart valves, as well as reduce potential long term consequences of such defects. Long term consequences secondary to obstructive cardiac disease may result in significant heart remodeling or progression to clinical signs referable to congestive heart failure or collapse secondary to obstruction of blood flow.

How is the procedure performed?

A balloon valvuloplasty is performed through a minimally-invasive route, by where the internal structures and valves of the heart are accessed through a peripheral (external) vein or artery. The most common site of vascular access is the external jugular vein (vein in the neck) due to its large size in most canine and feline species, as well as close proximity and direct connection with the heart. Generally, a small incision is made on the lower portion of the neck to access the vein. Once isolated, the vein is incised to allow introduction of various catheters and balloon devices to be fed into the heart. Once inside the heart, balloon dilatation devices are positioned spanning across the valve or narrowed area to be dilated, then inflated. By performing this procedure, valves that have developed inappropriately and are fused together may be opened and areas of stenosis may be alleviated by increasing the area for blood to flow. This helps alleviate obstruction to blood flow, which may result in high blood pressure upstream from the narrowing, as well as reduce adverse effects on the heart, which may occur as a result from chronically elevated stress from obstruction. Once the procedure has been performed, all instrumentation is removed and the vein used for accessing the heart is closed.

What can I expect the day of surgery and the weeks after?

On the day the surgery is elected, your pet will be admitted in the morning, typically fasted for 8-10 hours with certain exceptions. Your pet will be medicated with slight sedation prior to anesthesia to alleviate pain and anxiety. Intravenous access in the form of an IV catheter will be placed for administration of medication, fluids, and other use, should immediate intravenous access be needed. The surgery will be performed in the morning and you will be notified once your pet is in recovery. Generally, your pet will stay one night in the hospital following surgery to ensure there are no lingering effects of the medication used during anesthesia, or any immediate complications associated with the surgery prior to being discharged.

Once home after recovery from surgery, it is important to monitor the incision very closely for any redness, swelling, or discoloration, which may indicate infection. Exercise restriction for 10-14 days is

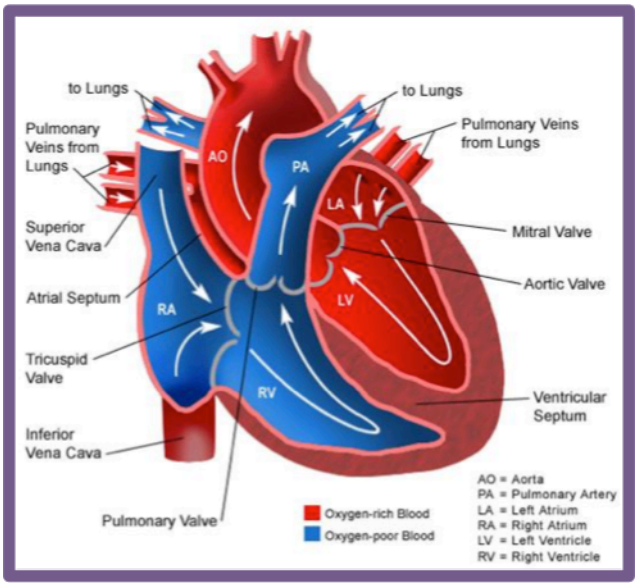
also advised to allow time for the incision to heal without excessive movement and irritation. Once the incision is healed, your pet may return to normal activity. Repeat cardiac consultation and echocardiogram will be recommended in the future as a monitoring tool to evaluate the efficacy of the treatment.
It is important to understand that not all animals will have 100% resolution of the degree of obstruction with this procedure and continued medications and monitoring may be needed in most cases.

What are the potential complications associated with Balloon Valvuloplasty?

As with any procedure requiring general anesthesia, there is a potential for adverse reaction to the drugs being used. Drug reaction may result in mild allergic reaction and hives to cardiopulmonary decompensation, and in rare circumstances loss of the pet.
Potential complications specific to balloon valvuloplasty include excessive bleeding while trying to gain access to the pet's vascular system. Fortunately, given the small incision needed, bleeding is typically minimal in the majority of cases. Additionally, since devices are being introduced into the heart that are foreign to your animal, there is a potential for development of arrhythmias under anesthesia, which can be life-threatening if untreated. Great care is taken to avoid this potential and medications may be administered if these are identified, and the procedure may be aborted if the risk is deemed too great. Post-operative monitoring of the incision area is also necessary to evaluate for any infection of the incision, which can lead to suture failure and need for additional treatments.

When performed by a skilled Veterinary Cardiologist, a balloon valvuloplasty may be performed with minimal risk to the patient, as well as with minimal post-operative recovery time. Successful balloon valvuloplasty may result in prolonging life expectancy as well as improving quality of life for you and your pet.

**For informational purposes all complications are not listed. You are encouraged to speak with your veterinarian regarding complications and expected outcomes for you pet.



Flow of blood through a normal heart.