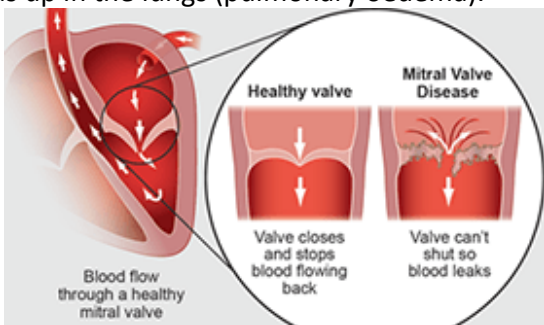


Myxomatous Mitral Valve Disease (MMVD)

What is MMVD?

Myxomatous Mitral Valve Disease (MMVD) is the most common cardiac condition seen in dogs. MMVD is due to the degeneration of valves in the heart (the **mitral valves**). When these valves wear out, they thicken and create a small hole where some blood can flow backwards when the heart contracts to pump blood around the body. This wearing out process begins with a small leak that gradually gets more severe.

If severe enough, this leak can cause **Congestive Heart Failure**. Heart failure begins when the body is not able to provide blood with adequate oxygen to the tissues. This can cause fluid to leak out of vessels, most commonly seen as Left-Sided heart failure where fluid builds up in the lungs (pulmonary oedema).



Who is affected?

MMVD is most commonly observed in **smaller breed dogs** (predominantly noted in the King Charles Cavalier, Toy Poodle, Maltese, Shih Tzu, Dachshund, Miniature Schnauzer, Chihuahua, Whippet, and Yorkshire Terrier). Approximately 10% of older small-breed dogs have MMVD. Although less common, larger breed dogs may also develop MMVD (predominantly noted in the German Shepherd, Doberman, Australian Cattle Dog, and Dalmatian). MMVD is usually noted in middle-aged to older dogs (usually >5 years of age). It is rarely seen in cats.

Symptoms of MMVD

Most dogs with MMVD have no clinical signs, especially when the disease is mild. The most consistent sign of MMVD is a **heart murmur**. This murmur is associated with turbulent blood flow created from the leaking valve.

When MMVD progresses to heart failure, signs become more obvious. Signs of heart failure include; gagging (attempting to gag up fluid from the lungs), a chronic and hacking cough, shortness of breath, and lack of stamina when exercised.

Diagnosing MMVD

1. **Auscultation** (listening with a stethoscope) can help us to identify the location and intensity of the heart murmur, as well as to listen to the lung sounds.
2. **Echocardiogram** (ultrasound examination of the heart). This imaging test gives us the best look at the size of each heart chamber. It allows visualisation of the heart valves and how much leakage is occurring. This is seen in real-time, so the contractions of the heart can be evaluated.
3. **Radiographs** (x-rays). This imaging test is not considered as valuable as an echocardiogram to assess the heart itself. However, it can help us examine the lungs (especially if we are worried about possible heart failure).
4. **Electrocardiogram** (ECG). This is where we assess the electrical activity of the heart. This can help us note any abnormal heart rates or rhythms (arrhythmias).
5. **Blood and urine tests** may be requested prior to commencing medications. These do not give direct information about heart function, but they allow detection of other disorders that may have significance to heart function and medication use.

Stages of MMVD

There are different stages of MMVD, and treatment is dependent on what stage they are in. Treatment is indicated when we see evidence of changes in the heart size (as noted by x-rays or an echocardiogram) and whether or not there are any clinical signs observed. Severity of MMVD is determined by how much blood is leaking back through the valve. The bigger the leak, the bigger the heart (and specifically the left atrium).

Treatment of MMVD

- **Heart murmur without any evidence of clinical signs or changes in heart size:** Continue to monitor closely. No treatment required.
- **Heart murmur without any evidence of clinical signs BUT has evidence of heart enlargement on imaging:** Recommend commencing treatment with Pimobendan.
- **Current or previous clinical signs of heart failure:** Recommend treatment to also include Frusemide (other medications may also be required).

During the initial **stabilisation** period, we will ask you to monitor the effects of these medications on your pet's symptoms. Several return visits may be required for us to monitor progress. Once stable, we usually do long-term check-ups of anything from 3-6 months to assess progress and we will periodically adjust medication dosages if necessary.

Medications we may recommend:

- **Pimobendan** (ie Cardisure): Used to increase the strength of the heart muscle contraction. It also can help the blood vessels relax to improve blood flow. This medication has been clearly demonstrated to decrease the chance of developing heart failure.
- **Frusemide** (a diuretic drug): Helps to remove fluid build-up secondary to heart disease and therefore helps to decrease coughing associated with this fluid build-up in the lungs. A common side-effect of this medication is an increase in drinking and urinating (this is normal).
- **Spironolactone** (a diuretic drug): Helps to remove fluid build-up secondary to heart disease. This medication is known to spare potassium, which is beneficial in cases where an animal may have high blood pressure or kidney disease. A common side-effect of this medication is an increase in drinking and urinating (this is normal).
- **Benazepril** (ie Fortekor): This helps to treat heart failure and high blood pressure by decreasing

certain chemicals that tighten the blood vessels, so blood flows more smoothly.

In some cases, a dog with MMVD will develop an arrhythmia (abnormal heart rhythm) that requires treatment. Various other medications can be used for this, depending on the type of arrhythmia.

Diets

Avoiding high-salt treats is recommended for dogs with MMVD (such as cheese, deli-meats, chips, pretzels etc).

Daily Home Routine

Exercise that causes excessive panting or weakness should be avoided, as well as walking during the hottest parts of the day. However, maintaining regular easy exercise is good for the dog's well-being and quality of life.

Home Monitoring

Once the diagnosis has been made, we may ask you to monitor your pet to see if the disease is progressing. We may ask you to regularly monitor your pet's "**Resting Respiratory Rate**" (RRR), this is how many times the dog breathes in a 60 second time period when it is sleeping. We want this RRR to ideally be under 30 breathes per minute, but we also want to ensure that the trend is not increasing.

Prognosis

Most dogs with mild MMVD never have a problem with their heart disease and the disease progresses slowly in many dogs. This means that approximately 75% of dogs that develop MMVD will not die because of this disease.

If you have any concerns at any time, please call us on (08) 9384 2644.

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