Medical Management of Mitral Valve Disease

What is mitral valve disease?

The correct term is myxomatous mitral valve disease (MMVD). Other terms to describe this condition include chronic mitral valve disease, degenerative mitral valve disease, mitral insufficiency, and endocardiosis. It is an ageing of the mitral valve and therefore mostly affects middle-aged to older dogs - i.e. typically 8 years and older.

MMVD can affect any breed, but more commonly affects small breed dogs. Approximately 10% of small, old-aged dogs have this condition. Cavalier King Charles Spaniels (CKCS) and CKCS cross-breeds are particularly prone to MMVD. Unfortunately , this condition can occur as young as 3 years of age in this breed.

In normal hearts, the mitral valve stops blood flowing backwards from the left ventricle to the left atrium. When the mitral valve ages, the edges of the valve fail to seal completely and blood is able to leak backwards through the valve, resulting in heart enlargement. For some patients this results in fluid accumulation in the lungs. This is called pulmonary oedema. Pulmonary oedema is a form of congestive heart failure.

However, a diagnosis of MMVD is not all bad news. Firstly, approximately 75% of dogs with this disease do not progress to develop fluid on the lungs because this disease can be slow to progress. Many dogs will therefore grow old gracefully from other age-related issues and MMVD may remain in the background of their lives, never resulting in congestive heart failure.

Secondly, for those dogs with sufficiently advanced disease to pose risk for congestive heart failure, therapy will effectively delay the onset by a duration of around 60%. And finally, for those dogs that develop congestive heart failure, appropriate treatment will allow them to continue to enjoy a good quality of life.

Breeds predisposed to MMVD*

- Cavalier King Charles Spaniels (CKCS)
- CKCS cross-breeds eg Cavoodles, Moodles
- Poodles
- Cocker Spaniels
- Yorkshire terriers
- Pekinese
- Shih-Tzus
- Schnauzers
- Miniature Pinschers
- Chihuahuas
- Dachshunds
- Maltese terriers
- Whippets
- Pomeranians
- Dobermans

*All breeds are at risk as they age

The Centre Springwood
1-15 Lexington Rd Springwood QLD 4119

info@vcacardiology.com.au
1300 LUB DUB (1300 582 382)

VETERINARY CARDIOLOGISTS AUSTRALIA

Signs of MMVD

Most patients with MMVD will not show any signs of having the disease until it is severe, resulting in fluid on the lungs. It is most commonly detected by your vet when hearing a murmur at a routine examination. This is always an unexpected finding pet owners, and it can be a stressful time waiting on further tests to confirm the diagnosis and the severity of the disease.

When signs of heart failure do develop, the most common signs are respiratory due to fluid accumulation in the lungs. These signs include rapid breathing that continues to be present at rest or when sleeping. This may look like excessive panting or distressed breathing, depending on how much fluid is in the lungs. Many patients will also have a cough. This is a non-painful disease and therefore many patients will still have a tail wag for their owners, despite experiencing heart failure. Given that small breed dogs are also prone to developing a cough due to mild airway disease as they grow older, this represents a diagnostic challenge for veterinarians, often resulting in referral for further assessment.

Less common signs of MMVD include loss of appetite, weakness, fainting, weight loss and fluid on the belly. If fainting does occur, it typically occurs during periods of excitement such as when the owner arrives home or during exercise.

Our patient celebrating his 11th birthday, after being diagnosed with heart disease

The Centre Springwood
1-15 Lexington Rd Springwood QLD 4119

info@vcacardiology.com.au
1300 LUB DUB (1300 582 382)

VETERINARY CARDIOLOGISTS AUSTRALIA

Diagnosis of MMVD

At the initial consultation, your VCA cardiologist will listen to the concerns you have about your pet's health. During this consultation, we'll ask questions about any signs of heart disease you may have seen, examine your pet and talk you through the process of diagnosing heart disease.

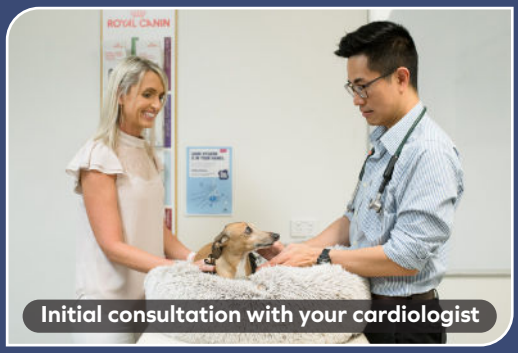
Most patients will require an ultrasound of the heart (echocardiogram) to obtain an accurate diagnosis. Your pet will lie comfortably on a custom-made cushioned examination table while our cardiologists perform the ultrasound. Often our patients are given a mild sedative to reduce any anxiety they may be feeling. The ultrasound allows us to accurately assess mechanical function of the heart.

Your cardiologist may also perform x-rays of the chest to identify any fluid present in or around the lungs. Your dog's blood pressure will also be taken. Just like humans, high blood pressure and heart disease don't go together well. High blood pressure typically responds well to therapy.

A routine ECG is not required for most mitral valve disease patients. However, if we hear an irregular rhythm during auscultation, an ECG will be recommended. An ECG allows the cardiologist to assess the electrical function of the heart and identify irregular heart beats.

For some patients the cardiologist may recommend a 24hr ECG (Holter ECG). This may markedly improve our understanding of your pet's abnormal heart rhythm. The cardiologist will analyze the recording and advise regarding diagnosis and treatment.

The severity of your pet's mitral valve disease will be determined on the results of these tests. The treatment, diet, exercise advice and prognosis will be closely linked to the level of heart disease identified.


Initial consultation with your cardiologist

Cardiologists performing an ECG test

Cardiologist performing echocardiogram

Cardiologists discussing xray results

The Centre Springwood
1-15 Lexington Rd Springwood QLD 4119

info@vcacardiology.com.au
1300 LUB DUB (1300 582 382)

VETERINARY CARDIOLOGISTS AUSTRALIA

Treatment of MMVD

The cardiologist will discuss treatment options that are tailored to your pets particular disease severity. Many patients don't require medications. For patients not requiring drug therapy, we will provide detailed information and handouts explaining how to monitor breathing rates at home and how best to help your pet with dietary changes and exercise modification.

For patients with more severe heart disease, we will discuss and recommend a plan that brings together state-of-the-art medical therapies, surgical options, and a nutrition and exercise plan to help you give your pet the lifestyle they deserve.

The most effective drug for slowing the progression of mitral valve disease is pimobendan and this drug markedly improves patient length and quality of life. This is most commonly commenced in patients with a severe mitral valve leak, prior to development of outward signs of heart failure (eg rapid breathing and coughing). This is a very safe drug, however if commenced too early in the disease process, it can have mild adverse effects. Deciding on the correct time to commence pimobendan is one of the most common reason for vets to refer patients to VCA.

While it is important to utilise the available medical therapies for heart disease, it is equally important to avoid commencing therapies that are not yet required based on the stage of the disease.

Prognosis

For patients with no clinical signs of congestive heart failure: Most dogs with mild MMVD never have a problem with their heart disease. It often takes between 2-5 years for a patient with mild mitral valve disease to develop fluid on the lungs (congestive heart failure). For patients with a severe valve leak, but no signs of heart failure, the commencement of medications such as pimobendan (combined with changes in diet and exercise levels) can delay the progression to heart failure, with most patients enjoying another 1-2 years without any perception of a reduced quality of life due to heart disease.

For patients with signs of heart failure (rapid breathing and coughing due to fluid on the lungs): Medications will quickly remove the fluid on the lungs for nearly all patients. In the time that follows, quality of life is typically good (and is always pain free). However, eventually most patients begin to experience difficulties with repeat episodes of fluid on the lungs or kidney disease within 6-12 months. Approximately 80 percent of patients pass away within 18 months of the diagnosis of fluid on the lungs. Unfortunately, only a small percentage survive for more than two years. Compared to other conditions that affect dogs as they grow old, well-managed heart failure can be a disease that allows pets to grow old gracefully and pass away peacefully without pain or distress.

Registered Specialists in Cardiology

Dr Brad Gavaghan BVSc (Hons) MANZCVS FANZCVS (Cardio)
Assoc Prof Fiona Meyers BVSc (Hons) PhD MANZCVS DipACVIM (Cardio)
Dr Christopher Lam BA BVSc (Hons) DipACVIM (Cardio)
Dr David Woolaston BVSc MANZCVS Cardiology Resident
Dr Anna Yoo BVSc (Hons) Cardiology Resident
Dr Tereza Nemanic BanVetBioSc DVM Cardiology Resident