Mitral Valve Surgery Options

About Mitral Valve Disease

Myxomatous mitral valve disease is a very common cause for heart murmurs in older dogs. It is a condition whereby the aging collagen in the mitral valve creates a laxity in the valve leaflets which prevents them from sealing normally allowing blood to leak backwards through the valve.

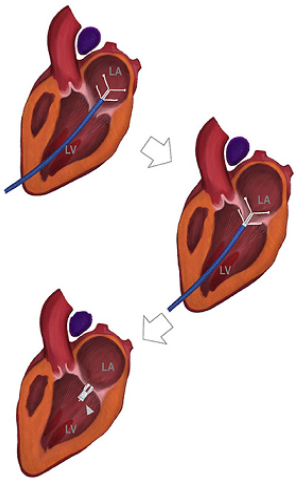
With time, the leak gets progressively larger as the valve continues to age. For most dogs, the disease will progress slowly and it will not result in an adverse outcome within their lifetimes. However for dogs with advanced disease, congestive heart failure (fluid in the lungs) will develop. While medication is necessary for patients that develop congestive failure, life-expectancy is typically reduced to several months if the valve is not surgically corrected.

Surgery Options

There are two types of mitral valve surgery, transcatheter edge-to-edge repair (TEER) using a V-Clamp device and open-heart surgical repair under cardiopulmonary bypass.

Transcatheter edge-to-edge repair (TEER) of the mitral valve

Transcatheter edge-to-edge repair (TEER) of the mitral valve is performed using a V-Clamp. The V-Clamp is the veterinary version of the human Mitra-Clip. This is a small device (approximately 8 mm in length) that is implanted to clamp together the two mitral valve leaflets. For patients with myxomatous mitral valve disease this reduces blood leaking backwards through the valve. It is this leak in the valve that results in heart failure in veterinary and human patients.



Open-heart repair of the mitral valve

Open-heart surgery for reconstruction of the mitral valve is performed by a highly skilled surgeon who is trained specifically for this surgery. It requires that the chest be opened, the beating heart be temporarily stopped, and blood diverted away from the heart and lungs so that the heart can be opened for the surgeon to operate on the valve.

A cardiopulmonary bypass (CPB) machine functions in the place of the heart and lungs by drawing blood from the body for oxygenation prior to return to the body, so vital organs continue to receive oxygen and nutrients. Once the surgery is finished, the heart is restarted, and the CPB machine gradually takes a step back as the heart and lungs begin to take over their normal functions again.

Transcatheter Edge-to-Edge Repair

How is the procedure performed?

TEER of the mitral valve is performed via a small (5-6 cm) incision low on the chest, between the ribs. The device is delivered via a catheter placed into the beating heart, avoiding the need for open heart surgery under cardiac bypass. The procedure is guided by 3-D transoesophageal ultrasound and fluoroscopy to ensure optimal device placement clamps the leaflets of the mitral valve firmly together.

Will this procedure improve my dog's quality and length of life?

For patients with myxomatous mitral valve disease sufficiently advanced to cause fluid in the lungs (ACVIM Stage C), medical management alone typically limits life-expectancy to 6-12months. Most patients with similarly advanced disease (ACVIM Stage B2 & C) that undergo TEER of the mitral valve are still alive and well 1 year (80%) and 2 years (78%) after the surgery.*
*Potter, Orton et al, CSU, 2025

Is my dog a candidate for this procedure?

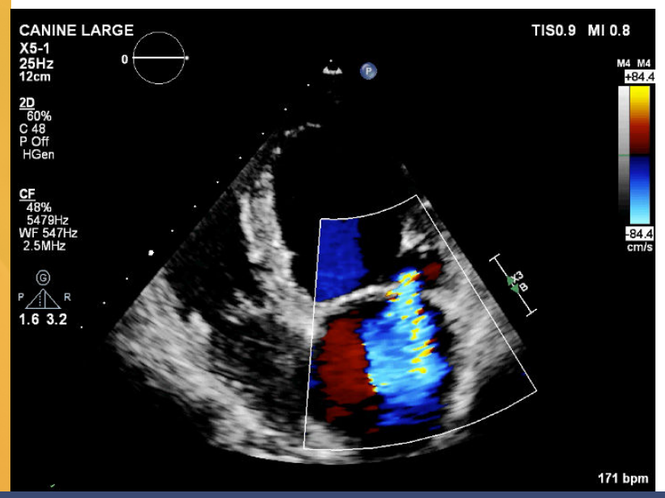
Identifying dogs with the best chance of a good result is our highest priority. Small breed dogs (over 4 kg) with advanced valve disease (ACVIM Stage B2 or Stage C)* may be eligible for the procedure. To assess an individual's suitability, the mitral valve anatomy and function is rigorously examined by a VCA cardiologist via an ultrasound of the heart. Transoesophageal ultrasound is an ultrasound of the heart performed using a long probe that is inserted down the oesophagus under a brief general anaesthetic. It allows the most detailed assessment of valve anatomy and is essential to confirming eligibility of an individual.
**ACVIM Stage B2 myxomatous mitral valve disease patients have enlarged hearts, however they are not in heart failure. ACVIM Stage C patients have experienced heart failure (fluid on the lungs) and are currently prescribed diuretics as part of their medical management.*

Does the procedure carry significant risk?

Transcatheter edge-to-edge repair of the mitral valve is a low risk surgery. Because the heart continues to beat throughout the surgery and circulation is uninterrupted while the device is implanted, it carries minimal risks compared to open heart surgery. Device dislodgement has been reported and so every precaution is taken to minimize this risk by careful assessment each individual's valve anatomy. The team at VCA has been performing TEER since 2023 and with excellent procedural outcomes and no procedural deaths.

Is Transcatheter Edge-to-Edge Repair expensive?

While pet insurance (if available) will cover a variable proportion of the fees, the procedure is expensive. The costs are associated with the attendance of a large team of specialists during the surgery (2-3 cardiologists and an anaesthetist) and the device cost. The procedure is currently less than half the cost of open-heart mitral valve repair surgery. An accurate estimate of costs can be provided on a case-by-case basis following consultation with your VCA cardiologist.



Open-Heart Surgery

Mitral Valve Repair with Dr Uechi and the Jasmine Group

Since early 2025, Dr Masami Uechi and the Jasmine Group cardiac bypass team from Japan have regularly travelled to Brisbane to perform open-heart surgical repair of the mitral valve under cardiopulmonary bypass.

Dr Uechi is recognised as the pioneer and world-leader in this field, with over 2000 highly successful open-heart mitral valve repairs performed in dogs. His collaboration with Veterinary Cardiologists Australia (VCA), Australia's largest and most experienced cardiology group, together with the 24hr Pet Intensive Care (PICU) team at Veterinary Specialist Services, provides a world class standard of peri-operative care to support cardiac patients and their families throughout their surgical repair journey.

Will this procedure improve my dog's quality and length of life?

For patients with myxomatous mitral valve disease sufficiently advanced to cause fluid in the lungs (ACVIM Stage C), medical management alone typically limits life-expectancy to 6-12 months. Most patients with similarly advanced disease (ACVIM Stage C) that undergo open-heart repair of the mitral valve are still alive and well 1 year (90%) and 3 years (72%).

Is my dog a candidate for this surgery?

Dogs with advanced valve disease (ACVIM Stage B2 or Stage C)* are likely to be eligible for surgery. Dogs that do not have a valve anatomy suitable for TEER of the mitral valve are likely to be suitable for open-heart surgery. Some dogs with concurrent disease or complications associated with mitral valve disease will not be eligible. An individual's suitability will be determined based on of review a patient's history and diagnostic imaging results by a VCA cardiologist and Dr Uechi.

Does the procedure carry significant risk?

Cardiopulmonary bypass for open-heart repair of the mitral valve carries some risks both during the surgery and in the post-operative period. During the first week after surgery patients are monitored around the clock by highly specialised critical care personnel in the Pet Intensive Care Unit (PICU). The surgery is associated with a low risk of death (2%) and non-fatal complications (7%).

Is open-heart repair of the mitral valve expensive?

There are significant costs involved for families opting for open-heart repair of the mitral valve. These costs are associated with the Jasmine surgery and cardiopulmonary bypass team travelling to VCA, surgery and equipment costs and a patient's intensive care post-operatively. Every aspect of our mitral valve repair program, including the specialist personnel, equipment and facilities have been purposefully and carefully chosen to optimize our patient outcomes.

VETERINARY CARDIOLOGISTS AUSTRALIA

About Us

We understand how stressful a diagnosis of heart disease can be when it comes to looking after your pet's health. **But it doesn't have to be this way.**

If your veterinarian has detected a heart murmur or has hospitalised your pet for other signs of heart disease, we'll provide you with an accurate same-day diagnosis and treatment plan to get your pet home as safely and quickly as possible. We believe in a holistic approach 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.

If you haven't already, ask your veterinarian for a referral to see us. Then call us on 1300 582 382 to book an initial consultation with one of our compassionate cardiologists.

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