Degenerative Mitral Valve Disease (DMVD) 
Degenerative mitral valve disease (DMVD) is a disease that occurs commonly in older dogs. Of the four valves in the heart, the mitral valve, which separates the left chambers of the heart, is most commonly affected. The weakened heart valves disables the heart from pumping efficiently, causing a build up of pressure in the chambers of the heart. This leads to an accumulation of pressure in the circulatory system which manifests as fluid in the lungs. This phenomenon is also termed as congestive heart failure (CHF). Clinical signs of DMVD or CHF includes lethargy, fainting, coughing, rapid or difficulties in breathing, loss of appetite or weight loss. In some instances, the chordae tendinae ("heart strings" which secures the valves to the heart walls) may also snap and in most cases, is a fatal consequence.

Diagnosis 
During a physical exam, heart murmurs may be audible using a stethoscope. Sounds of fluid in the lungs may also be apparent during this time. X-rays may be indicated to confirm this, as well as to rule out other possible disease processes. X-rays may also show an increase in the size of the heart, however it is unable to ascertain the function of the heart valves. The most sensitive test to confirm the presence and asses the severity of DMVD is cardiac ultrasound, otherwise known as echocardiography. Echocardiography not only allows the examination of the structure and integrity of the heart walls and valves, it also allows the assessment of blood flow through the heart. This allows determination of the stage of heart disease, and the associated prognosis.

Medical Treatment 
At present, medical treatment for CHF is NOT CURATIVE but PALLIATIVE. Drugs that are commonly used includes diuretics (e.g. frusemide), vessel dilators (e.g. benazapril, enalapril) or heart contraction stimulators (e.g. pimobendan). Drug doses have to be modulated regularly to slow down the progression of heart failure. Some of these drugs may also have side effects on major organs such as kidneys, and blood tests have to be conducted regularly to monitor and manage its negative effects. In some dogs, medical treatment is no longer effective at preventing imminent death, for example, when the chordae tendinae of the heart has ruptured. The approximate survival time for dogs with DMVD or rupture of the chordae tendinae is less than one year.
Mitral Valve Repair Surgery and Cardiopulmonary Bypass
For many dogs in Singapore, the only option for dogs suffering from CHF is palliative medical treatment. The Animal Recovery Veterinary Referral Centre (ARVRC) is the FIRST veterinary hospital in the region outside of Japan to offer mitral valve repair surgery for dogs suffering from DMVD. The surgery is performed by world-reknown veterinary cardiac surgeon Dr Masami Uechi and his team of surgeons, anaesthesiologists and perfusionists. Dr Masami is currently at the forefront of veterinary cardiology, having completed more than 100 open heart surgeries on dogs, and whose work has been published in many scientific journals.

The surgery involves two major parts:
(a) First, mitral valves are repaired by suturing inert synthetic (ePTFE) strips to the borders of the valves to restore mitral valve integrity.
(b) Next, artificial chordae tendinae are replaced with utmost precision to ensure normal heart valve function and proper blood flow.

The size of surgical patients is not a prohibitive factor; Dr Masami has performed MV repairs in many small breeds including Chihuahuas, Maltese, Poodles and Pomeranians.

If you are interested in giving your dog a new lease of life via this life-saving procedure, book a consultation with one of our veterinarians at ARVRC today.