CardioVet Focus

**INFORMATION SHEET:**

# Myxomatous Atrioventricular Disease (MVD)


## Summary

Myxomatous valvular degeneration (MVD) of the valves separating the heart chambers is by far the most common cardiovascular disease identified in small animals and is the most frequent cause of congestive heart failure (CHF) in dogs. This condition has also been termed chronic degenerative valvular disease and endocardiosis.


The heart consists of 4 chambers: 2 atria and 2 ventricles. The atrioventricular valves consist of the mitral and tricuspid valves, which separate the left and right atria from the left and right ventricles respectively. Both valves act as one-way valves. MVD causes 'mitral valve regurgitation', which is the leakage of blood through the valves (abnormally thickened and often nodular) on the left side of the heart. Tricuspid regurgitation is the same situation on the right side of the heart. MVD affects the mitral valves more commonly than the tricuspid valves.

Older dogs and small breeds have the highest incidence of the disease. MVD is unusual in most dogs less than 5 years of age and advances with age. This is a slowly progressive disease in which lesions may begin in the first half of life (e.g., 2 to 3 years), but clinical disease is unlikely before middle age. In the early stages, the only clinical sign may be a cardiac murmur detected on routine examination. Cardiac decompensation and congestive heart failure (CHF) typically occurs in later life (e.g., 6 to 10 years of age or older).

## Clinical signs

Many older dogs presented for routine examination or for other medical problems are identified to have the typical abnormal heart sound (heart murmur). Congestive heart failure may develop in severe cases and can manifest as fluid in the lungs ('pulmonary edema'), fluid in the thorax ('pleural effusion'), or fluid in the abdomen ('ascites'). Coughing is a very common finding. Dogs with CHF may have respiratory difficulties, rapid breathing, exercise intolerance, weight loss ('cardiac cachexia'), and in certain cases anxiety with reluctance to lie down, progressive abdominal distention and fainting. There may also be irregularities in the heart rhythm ('arrhythmias'). In animals with CHF, the heart rate is usually elevated.

## Diagnostic tests

Diagnostic tests are used to confirm the diagnosis, have a baseline for future monitoring, give a prognosis and guide treatment. They consist of:

- **Radiography** (x-ray) is performed to assess whether fluid in the lungs ('pulmonary oedema') is present or not, and to visualize heart size. It is good to have a baseline to assess treatment response and give a prognosis in the follow-up situation.
- **Electrocardiography** enables us to assess heart rate and rhythm. Cardiac arrhythmias (rhythm abnormalities) are fairly common with MVD.
- **Echocardiography** or ultrasound of the heart enables us to visualize the cardiac structures and function (e.g. abnormal valves, valvular leakage etc). This is the only test that confirms the diagnosis
- **Blood pressure** may be measured and blood tests may be taken to ensure that medications may be safely tolerated.

## Medical treatment

Therapy for MVD with clinical signs involves the use of drugs to relieve the symptoms of volume overload ('congestion'), blunt the compensatory mechanisms that continue to overload the failing heart and at the end-stage of the disease drugs that improve heart function.

Conventional therapy for symptomatic MVD with clinical signs involves the use of ACE inhibitors (vasodilators) and diuretics (increases urination to reduce fluid in the body) to reduce volume overload. Another drug frequently used is pimobendan, and this dilates blood vessels as well as improving cardiac contractility.

Dietary restriction of salt, and decreased exercise vigour is also recommended.

Other medications to help dilate blood vessels, improve fluid clearance or slow down the heart rate may be prescribed if there is a clinical indication.

## Re-evaluation and follow-up

First follow-up is usually recommended with in 7 to 10 days after starting or changing cardiac medications to ensure the drugs are both safe and effective. Additional tests that might be appropriate at the time of the initial recheck examination (e.g. follow-up thoracic radiographs in dogs with CHF, and follow-up electrocardiography in animals with arrhythmia).
Subsequent visits should be scheduled for 2 to 3 months and at that time a physical examination with chemistry profile should be performed. Approximately, 6 months after initial diagnosis it is recommended to have a follow up examination with echocardiography to search for changes in the appearance of the heart or other alterations which might dictate a need for change in therapy.

## When to contact a veterinarian

You should contact your veterinarian  your pet shows any of the following:

- Increased difficulty coping with short walks
- Increased coughing
- Poor appetite or excessive listlessness

If your pet shows any of the following, then **urgent** veterinary attention should be sought:

- Rapid breathing
- Collapse
- Purple tinged gums or open-mouthed breating