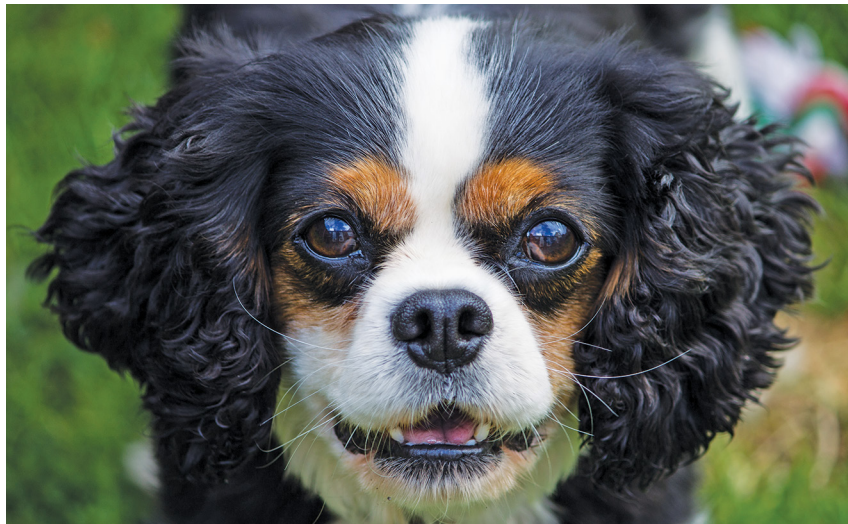


Myxomatous Mitral Valve Disease

This case review study of 212 client-owned dogs compared survival times of dogs with myxomatous mitral valve disease (MMVD) with and without pulmonary hypertension (PH). Initially, PH caused by left-sided heart failure is caused by passive back transmission of increased left ventricular filling pressure to the pulmonary capillaries and is reversible. Eventually, pulmonary artery and vein remodeling due to chronic vasoconstriction can occur, and PH is irreversible.

Right-heart catheterization is the gold standard for PH diagnosis but is not routinely done, so echocardiography is the means to noninvasively diagnose PH. The authors hypothesized that dogs with stage B2 and C MMVD with PH have a shorter survival as compared with those without PH.

In this study, 39% of dogs had PH, which was more commonly identified in stage C as compared with stage B2. Median survival time for all dogs in the study was 567 days, with 784 days for stage B2 and 491 days for stage C dogs. The median survival time for dogs without PH was 758 days as compared with 456 days for those with PH. Stage C, presence of PH, left atrial to aortic root ratio >1.7 , normalized left-ventricular end



diastolic diameter >1.73 , and tricuspid regurgitation pressure gradient >55 mm Hg were associated with worse outcomes.

Commentary

Tricuspid valve degeneration is commonly seen in dogs with MMVD but is usually not clinically or hemodynamically important because the right side is a low-pressure system. However, when pulmonary hypertension develops, the degree of insufficiency across the tricuspid valve can increase and there is heightened concern for the clinical significance of tricuspid insufficiency and whether this impacts long-term prognosis.

This study looked at dogs with degenerative mitral valve disease stage B2 or C that also had concurrent tricuspid

insufficiency. The study assessed whether the degree of pulmonary hypertension, as estimated by tricuspid insufficiency peak velocity/gradient, had any impact on survival. Although many patients (almost 40% of those with tricuspid insufficiency) had what would be technically defined as pulmonary hypertension (TR jet >3 m/s or 36 mm Hg), the impact on long-term prognosis and survival was not significant until there was more moderate pulmonary hypertension (TR jet >3.7 m/s or 55 mm Hg).

Therefore, the presence of tricuspid insufficiency concurrent with mitral insufficiency in a dog with degenerative valve disease becomes an important clinical assessment to ensure there is no pulmonary hypertension. Therapy directed specifically at the pulmonary hypertension in addition to other aspects managing dogs with stage B2 or C MMVD could become important.
—Amara Estrada, DVM, DACVIM (Cardiology)

Source

Borgarelli M, Abbott J, Braz-Ruivo L, et al. Prevalence and prognostic importance of pulmonary hypertension in dogs with myxomatous mitral valve disease. *J Vet Intern Med.* 2015;29(2): 569-574.

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