Reviewer's report

Title: Left Ventricular Strain Distribution in Healthy Dogs and in Dogs with Tachycardia-induced Dilated Cardiomyopathy

Version: 2 Date: 7 November 2013

Reviewer: Hidekazu Tanaka

Reviewer's report:

I reviewed the manuscript entitled: "Left Ventricular Strain Distribution in Healthy Dogs and in Dogs with Tachycardia-induced Dilated Cardiomyopathy" In this manuscript, Kusunose K, et al. observed strain distribution of left ventricular speckle tracking strain in normal dogs and dogs with tachycardia-induced cardiomyopathy.

Please consider the following comments and suggestions:

General Comments
1). The main purpose of this study was unclear. The authors should state clinical implication for human in more detail. It seems to be the study for DOG.
2). The authors concluded that the most profound effect of TIC-induced LV dysfunction was LV apex (pacing site). They also concluded that these findings may elucidate the pathophysiology of LV contraction in TIC, and may help us understand LV dysfunction in the presence of non-ischemic etiology. However, Prinzen et al. previously reported that strain in the early-activated LV areas was lower than that in the remote areas during RV pacing by using sonomicrometry in a canine model. They also reported that blood flow in the early-activated regions was <60% of that in late-activated regions during RV pacing (Am J Physiol. 1990;259:H300–8.). Thus, I am concerned about tachycardia-induced cardiomyopathy by RV apical pacing and typical non-ischemic cardiomyopathy was considered as same pathophysiological findings in the clinical setting. Please clarify.
3). Similarly, were there any differences of wall thickness between the regions of LV myocardium adjacent to the site of RV pacing and the distant sites?
4). How did the authors speculate the absence of any apex-to-base gradient in circumferential strains in TIC.

Level of interest: An article of importance in its field

Quality of written English: Acceptable

Statistical review: Yes, and I have assessed the statistics in my report.

Declaration of competing interests:
I declare that I have no competing interests