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Case Report

High-pressure balloon dilation in a dog with supralvalvular aortic stenosis[☆]

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Coanda effect;
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Abstract A 6-month-old female intact Goldendoodle was presented for diagnostic work up of a grade IV/VI left basilar systolic heart murmur. An echocardiogram was performed and revealed a ridge of tissue distal to the aortic valve leaflets at the sinotubular junction causing an instantaneous pressure gradient of 62 mmHg across the supralvalvular aortic stenosis and moderate concentric hypertrophy of the left ventricle. Intervention with a high-pressure balloon dilation catheter was pursued and significantly decreased the pressure gradient to 34 mmHg. No complications were encountered. The patient returned in 5 months for re-evaluation and static long-term reduction in the pressure gradient was noted.

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A 6-month-old female intact Goldendoodle was referred to the University of Minnesota Veterinary Medical Center for evaluation of a heart murmur

that had been auscultated since birth. The dog was reported to be asymptomatic at home. On physical examination, a grade IV/VI, left, basilar, systolic

[☆] A unique aspect of the Journal of Veterinary Cardiology is the emphasis of additional web-based images permitting the detailing of procedures and diagnostics. These images can be viewed (by those readers with subscription access) by going to <http://www.sciencedirect.com/science/journal/17602734>. The issue to be viewed is clicked and the available PDF and image downloading is available via the Summary Plus link. The supplementary material for a given article appears at the end of the page. Downloading the videos may take several minutes. Readers will require at least Quicktime 7 (available free at <http://www.apple.com/quicktime/download/>) to enjoy the content. Another means to view the material is to go to <http://www.doi.org> and enter the doi number unique to this paper which is indicated at the end of the manuscript.

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heart murmur with radiation over the ventral cervical region and thoracic inlet was noted. A palpable thrill was felt over the carotid arteries bilaterally. The heart rate and rhythm were appropriate. Femoral pulses were normal in strength and synchronous. Doppler blood pressure was performed with the patient in sternal recumbency. The average of three pressures in each limb was recorded and the readings were performed twice during the examination. The average in the right forelimb was 142 mmHg and in the left forelimb was 124 mmHg.

Two-dimensional (2-D) echocardiography revealed a hyperechoic, supravalvular, aortic ridge located at the sinotubular junction with subsequent narrowing of the diameter of the proximal aorta from 1.33 cm to 0.64 cm. Marked post-stenotic dilation of the aorta was noted (Fig. 1A). The aortic valve leaflets appeared normal and displayed adequate mobility. The left ventricular chamber diameter on M-mode was normal in size during diastole (3.04 cm; range, 2.4–3.4 cm) and systole (1.59 cm; range, 1.4–2.5 cm) with a normal fractional shortening value of 47.7%. The left

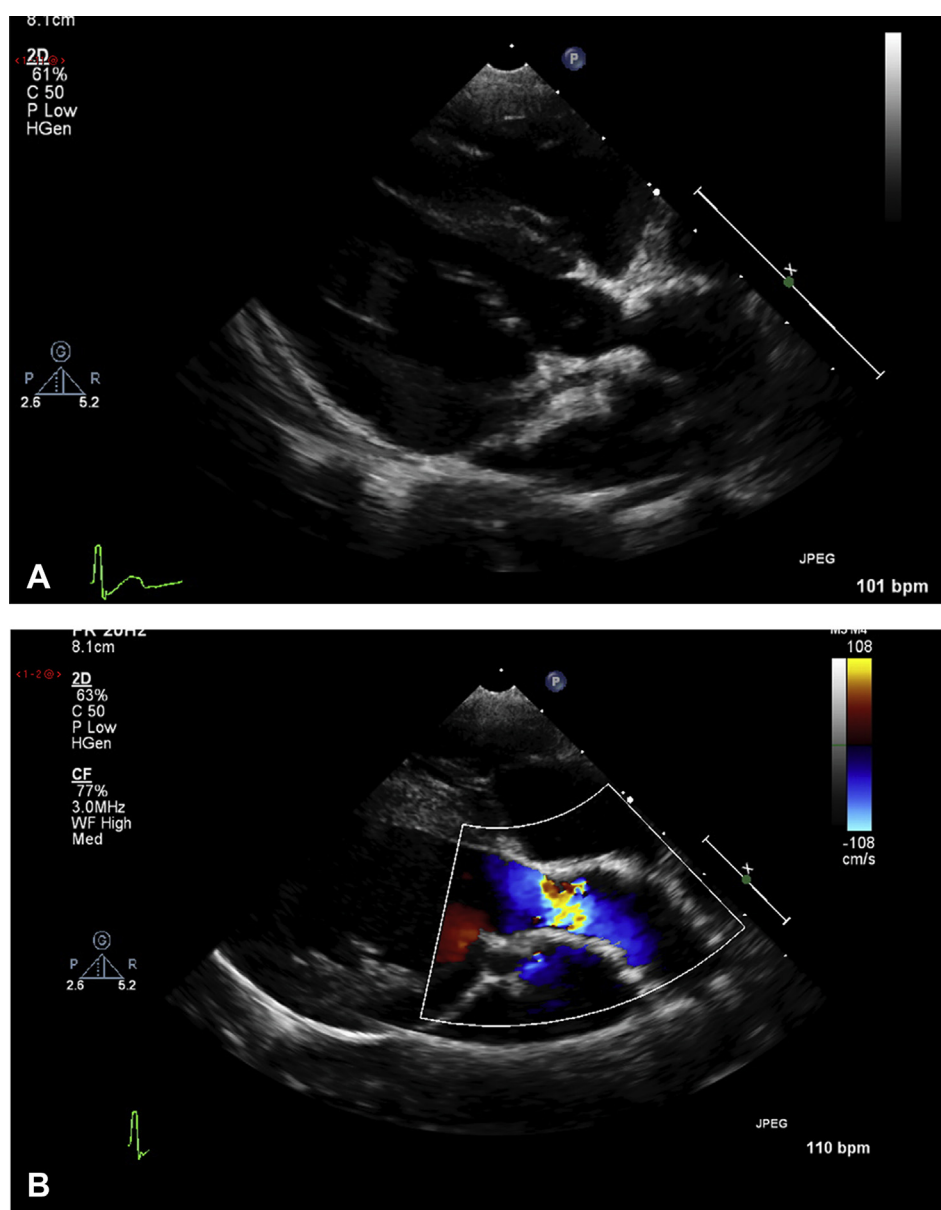


Figure 1 Transthoracic echocardiographic images. (A) Right parasternal long axis five chamber image showing a supravalvular stenosis at the level of the sinotubular junction and post-stenotic dilation of the aorta. (B) Right parasternal long axis five chamber image with color Doppler illustrating turbulent flow at the level of the supravalvular stenosis.

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