



PATIENT

Toby Grace Grimm

SPECIES

Canine

BREED

Miniature Dachshund

SEX

Spayed female

AGE

13 years

WEIGHT

9.2 lbs

INTERPRETED BY

Bradley Harris, DVM,
 DACVECC, DACVIM
 (cardiology)

IMAGING PERFORMED BY

Dr. Ken Leal

HOSPITAL NAME

Dr. TVC

REFERRING VET

Dr. Turk

INVOICE

70016

DATE

1/12/26

PRESENTING CLINICAL SIGNS

History: Worsened heart murmur. excessive hacking Current medications: Pimobendan, furosemide.
 Abnormal PE/Chem/CBC/UA Results: Bloodwork from September 2025 is wnl.

ULTRASONOGRAPHIC EXAMINATION OF THE HEART

The left atrium is mild to moderately enlarged. The left ventricle is normal in dimension, with normal systolic function. The right atrium and ventricle are normal in dimension, with normal systolic function. The mitral valve is thickened and redundant consistent with myxomatous changes, and there is moderate prolapse. There is evidence of moderate to severe mitral regurgitation. The tricuspid valve leaflets are thickened and redundant with mild to moderate tricuspid regurgitation and no evidence of pulmonary hypertension. The left ventricular outflow tract demonstrated normal laminar flow and the visible aorta is unremarkable. The right ventricular outflow tract assessment revealed normal laminar flow, and appropriate diameter and distensibility. There is no pulmonic and no aortic valve insufficiency identified. There is no visible pericardial effusion, but questionable pleural effusion is documented. No evidence of hepatic venous congestion is noted. The cardiac chambers, pericardial and visible extra-cardiac regions were free of masses, spontaneous echo contrast, or thrombi.

CANINE CARDIAC PARAMETERS	Body Weight kg	HR BPM	LAD 4 ch Long	RAD 4 ch Long	La/Ao Heart Base	LVIDd	LVIDs
NORMAL PARAMETER		50-100			<1.6		
PATIENT	4.18 kg	130	3.03	1.79	1.56	2.09	0.57
CANINE CARDIAC PARAMETERS	FS	EPSS	PV V MAX (m/s)	AV V Max (m/sec)	MR Vmax	TR Vmax	RPA distensibility (normal >30%)
NORMAL PARAMETER	28-40	<0.6	0.7-1.6	0.7-1.7	4.5-5.5	< 2.7	
PATIENT	73	0.3	0.8	1.3	5.6	2.0	NM

ULTRASONOGRAPHIC FINDINGS

These findings are consistent with degenerative mitral valve disease with significant hemodynamic effects. Given the degree of chamber enlargement and history of diuretic administration, congestive heart failure is a reasonable explanation for the historic signs, consistent with ACVIM Stage C. If there is concern for pulmonary edema on thoracic radiographs, a relapse of congestive heart failure is likely.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Continued therapy for CHF is recommended, with Lasix (2mg/kg BID), the addition of enalapril (0.5mg/kg BID assuming normotension and lack of renal insult), and Vetmedin (.25-.35mg/kg BID). If there is active pulmonary edema, injectable furosemide may be required to resolve edema prior to



PATIENT	continuing oral diuretics. Dobutamine (2.5-10 µg/kg/min as a CRI, starting at 2.5 µg/kg/min and increasing the dosage incrementally) may be used in addition to the above treatments to improve the left ventricular function and blood pressure in patients that fail to respond adequately to diuretics, pimobendan, sedation, oxygen, and comfort care measures. A repeat chest X-rays, BP, and chemistry should be performed now for a baseline, and again in 1-2 weeks. A repeat echo is indicated in 3 months. Owners should monitor resting respiratory rate at home. Values above 30 breaths/minute or an increase in respiratory rate 10% above baseline should prompt veterinary re-evaluation.
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Miniature Dachshund	Anesthesia should be avoided until manifestations of congestive heart failure (edema/effusion/respiratory distress) have resolved. Following that time, if anesthesia is necessary, then alpha-2 agonists, ketamine, high dose acepromazine, and Telazol should be avoided. If an ACE inhibitor (enalapril, benazepril) or spironolactone is being given, it should not be administered on the morning of general anesthesia. Other cardiac medications should be administered per the normal dosing schedule. Anesthetic IV fluid use should be limited to < 3 ml/kg/hr and, if IV fluid therapy is administered during the procedure, a 1 mg/kg dose of IM Lasix should be administered when the patient is awake and standing in recovery. A shorter anesthetic duration will reduce the risk of complications. Pre-oxygenation is advised. Premedication with an opioid (i.e., butorphanol, hydromorphone, oxymorphone) with or without a benzodiazepine is generally the safest protocol. An induction agent such as Propofol, alfaxalone, or diazepam/etomidate can be used to effect. Maintenance of anesthesia with isoflurane or sevoflurane is reasonable. Dobutamine (2.5-10 µg/kg/min as a CRI, starting at 2.5 µg/kg/min and increasing the dosage incrementally) may be used in lieu of fluid boluses to augment systemic blood pressure.
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INTERPRETED BY	<u>Diet:</u>
Bradley Harris, DVM, DACVECC, DACVIM (cardiology)	A high-quality food from Hills, Royal Canin, Science Diet, Eukanuba, Iams, or Purina that is highly palatable with adequate protein and calories for maintaining optimal body condition with mild dietary sodium restriction (< 100 mg/100 kcal) is recommended. Consider omega-3 fatty acid supplementation. Avoid any boutique, exotic, or grain-free diets.
IMAGING PERFORMED BY	<u>Activity:</u>
Dr. Ken Leal	Moderate physical activity (meandering walks, exploring the backyard, playing with toys inside, getting excited when family gets home, etc.) is encouraged, but periods of strenuous aerobic activity (jogging, strenuous outdoor ball play, prolonged play at the dog park, etc.) should be avoided, especially during periods of high heat (> 80 F) and humidity. Dogs with heart disease tend to tolerate cool and cold temperatures much better than high temperatures. Avoid sudden increases in activity (e.g. 2 block walks during the week but 2 mile walks followed by 30 minutes at the dog park on the weekends) as this may be difficult for the cardiovascular system to deal with.
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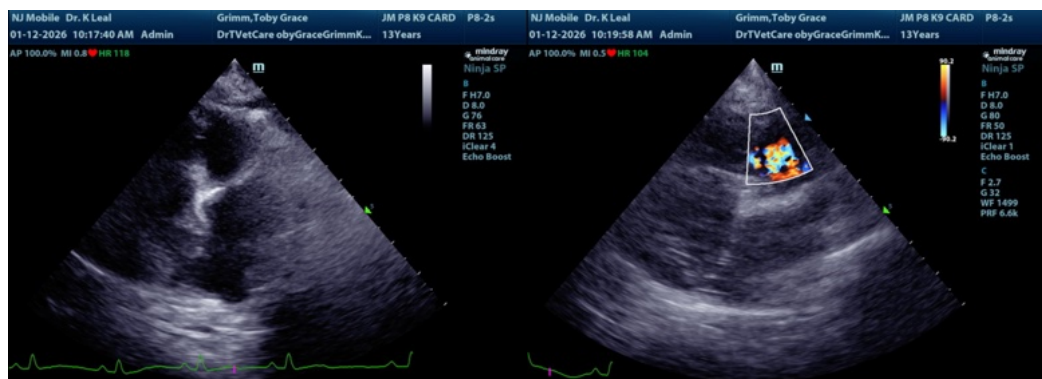
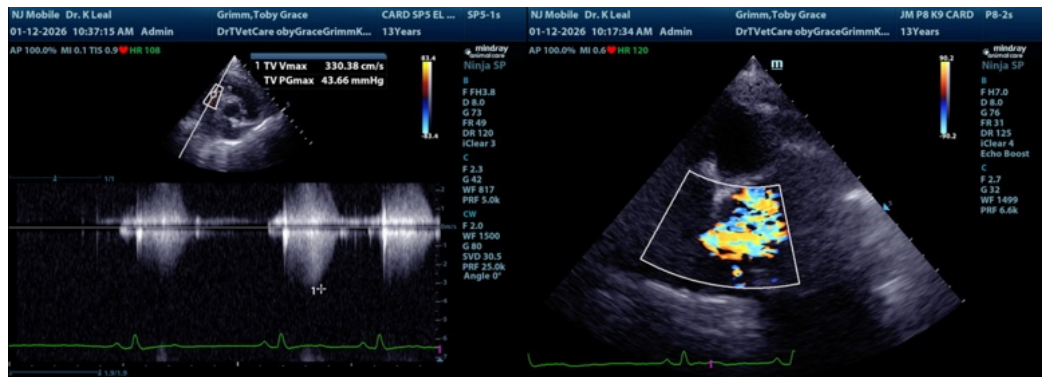
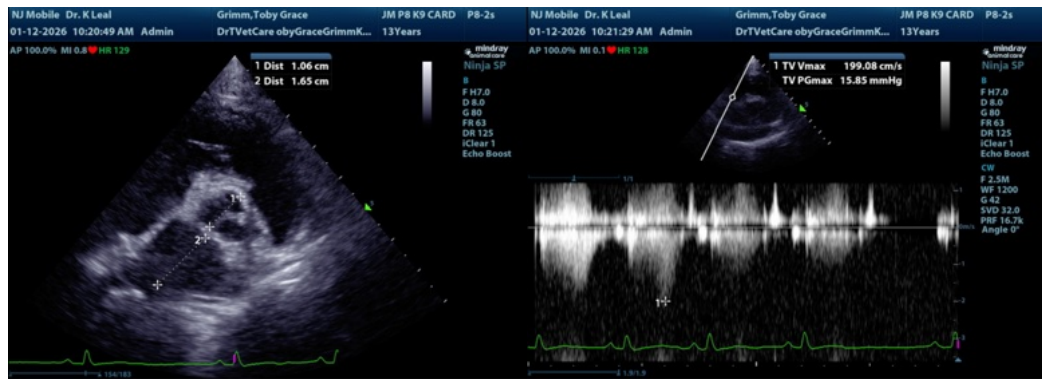
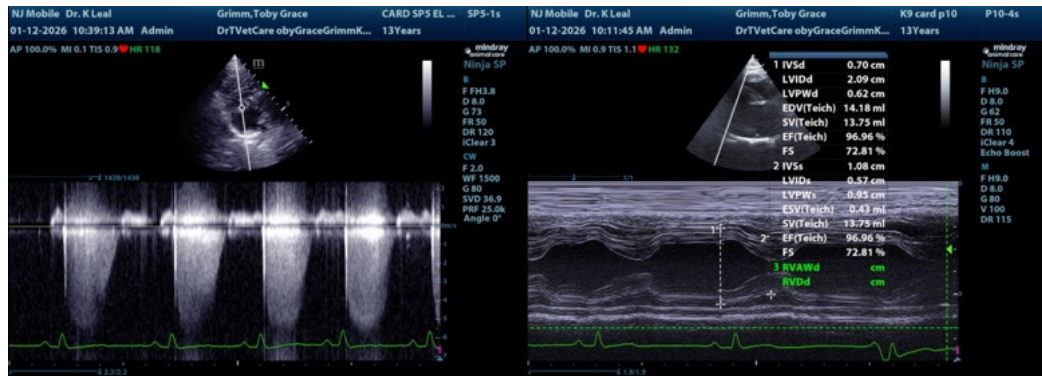
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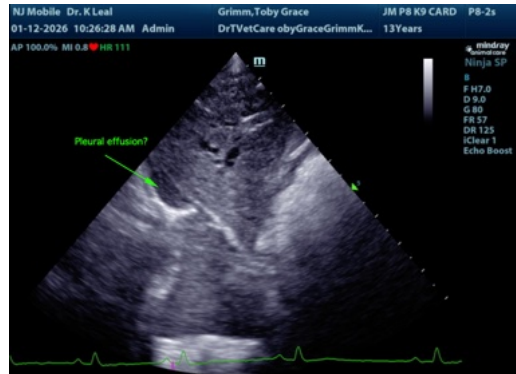
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

Thank you for this referral. If the clinical or image interpretation does not parallel your findings or if I can be of any further assistance please contact me.

Bradley Harris, DVM, DACVECC, DACVIM (cardiology)

info@SonoPath.com