

Making the Heart Grow Stronger: Reversal of Dilated Cardiomyopathy in an Elderly Patient



To the Editor:

A 63-year-old black woman presented with dyspnea and dependent edema. She had noticed progression of her symptoms over the prior 2 weeks to presentation and denied other symptoms. She had been diagnosed with heart failure with reduced ejection fraction 6 years previously based on echocardiographic findings showing global left ventricular hypokinesia and an estimated ejection fraction of 22%. An encompassing diagnosis of ischemic cardiomyopathy was made at that time and she was commenced on treatment with a beta blocker, ACE inhibitor, aspirin, statin, and a loop diuretic. There was no history of diabetes, surgery, or other medical interventions in the past.

At the time of this presentation, she received further loop diuretic therapy with resolution of her edema. Her 12-lead electrocardiogram (Figure A) showed sinus rhythm with features of left ventricular hypertrophy and widespread T-wave inversion. Echocardiography confirmed the previous findings. Review of her laboratory data revealed the presence of hypocalcemia, which had been noted to be present but, untreated, for more than 10 years (Table). Further evaluation confirmed the presence of idiopathic hypoparathyroidism and treatment with oral vitamin D and calcium replacement was undertaken.

After 12 months of continuous vitamin D and calcium supplementation, a further clinical and laboratory evaluation was undertaken. Biochemical improvement was

sustained (Table) and her 12-lead electrocardiogram showed marked improvement in appearance (Figure B). Repeat echocardiography revealed improvement in left ventricular ejection fraction to 50%-55% with reduction in end diastolic dimensions and resolution of the previously noted global hypokinesia. Loop diuretics and aspirin were stopped, and her dose of angiotensin-converting enzyme inhibitor reduced. Twelve months after this evaluation she remains well, symptom free, and notes considerable improvement in exercise tolerance and well-being.

DISCUSSION

Heart failure with reduced ejection fraction is increasingly common, especially in those of advancing age and those with a background of hypertension, diabetes, and ischemic heart disease; widespread programs exist to ensure individuals are appropriately identified and treated.¹

Hypocalcemia is an uncommon but well-documented cause of reversible dilated cardiomyopathy.^{2,3} Many cases are related to prior neck surgery or radiotherapy, especially for thyroid disease, or occasionally genetic disorders. Many cases may be idiopathic, and a common finding in the literature is the delay to recognition of the potential for the etiology to be hypocalcemia, and then a delay in the initiation of appropriate treatment despite the clear evidence of the excellent response to treatment in these cases of heart failure. With the easy access to measurement of serum calcium in multichannel analyzers in many countries, a single measurement at the time of the diagnosis of heart failure with reduced ejection fraction may be a simple way to improve the detection and care of those patients who have hypocalcemia at the time of diagnosis of heart failure.

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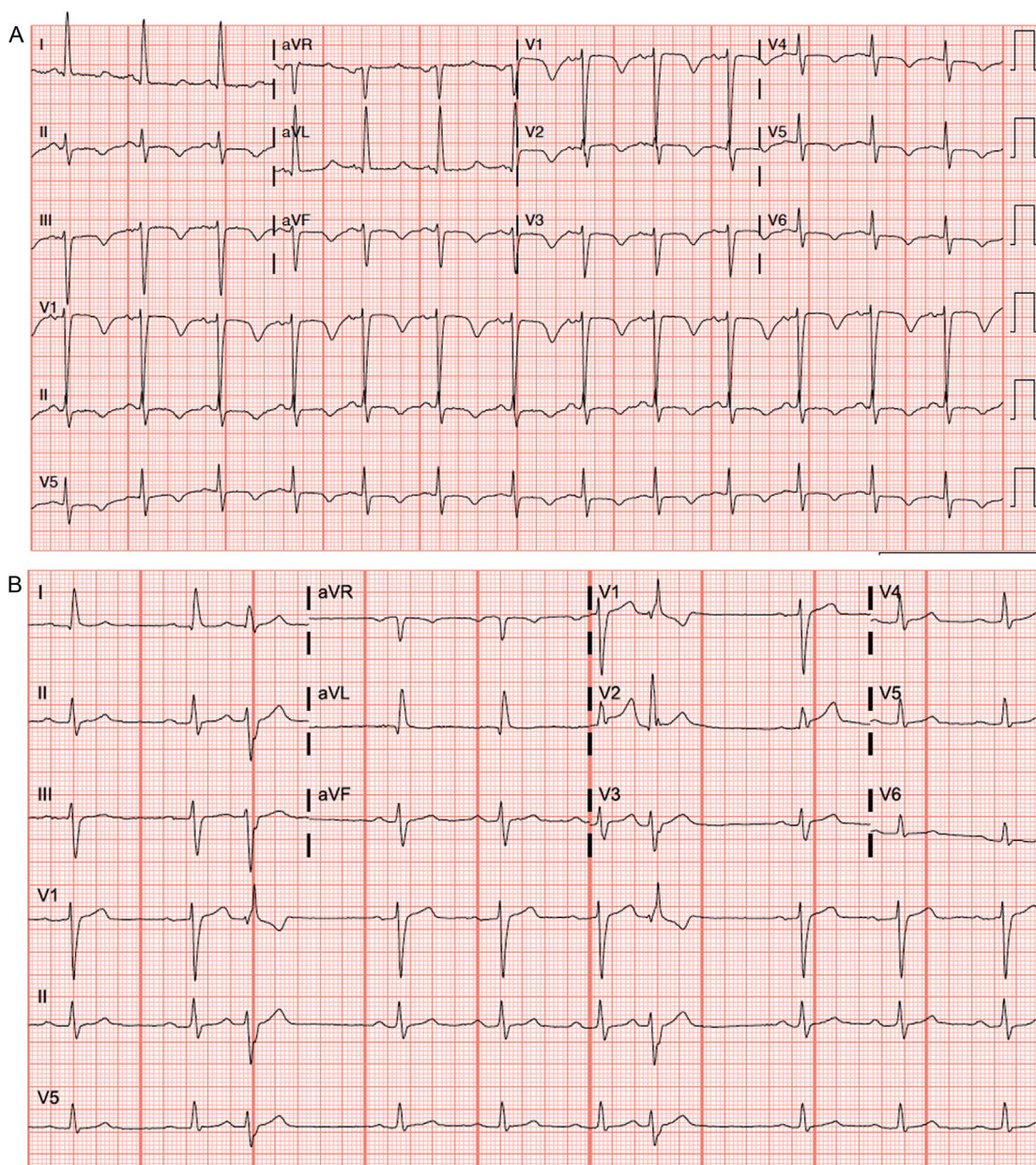


Figure (A) Sinus rhythm with features of left ventricular hypertrophy and widespread T-wave inversion. **(B)** Sinus rhythm with resolution of previous features of left ventricular hypertrophy and resolution of widespread T-wave inversion.

Table Laboratory Values from Diagnosis prior to and 1-Year After Treatment Began

	2011	2020	2021
Calcium (mg/dL)	6.7	6.9	8.9
NR			
Albumin (g/dL)	3.7	3.8	3.7
Corrected Calcium (mg/dL)	6.9	7.1	9.1
Ionized Calcium (mEq/L)	1.79	1.88	2.45
Phosphorus (mg/dL)	5.4	5.9	3.2
Intact PTH	13	12	9
Vitamin D	35	41	67
Creatinine	0.8	0.9	0.9
PTH receptor antibodies			Negative
Celiac screen			Negative
22q deletion screen			Negative

PTH = parathyroid hormone.

LEARNING POINTS

The determination of the etiology of cardiac failure is essential to ensuring optimal outcomes of treatment.

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