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CARDIOVASCULAR IMAGES

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Chagas Disease Presenting with Renal Infarcts

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Clinical History

A 43-year-old man who emigrated from Guatemala at the age of 20 presented with new onset pruritis, lower abdominal pain, and dysuria. An abdomen CT revealed bilateral renal infarctions of unknown etiology. A transthoracic cardiac ultrasound (TTE), performed to exclude a cardiovascular source of embolus, revealed a left ventricular apical aneurysm. A cardiac MRI (CMR) was subsequently performed to further delineate the morphology and possible etiology of the aneurysm.

Findings

CMR confirmed the presence of an isolated thinned and fibrotic left ventricular apical aneurysm with focal akinesis. No other wall motion abnormalities, fatty infiltration, or perfusion abnormalities were noted, and the overall impression was consistent with sequelae of chronic Chagas disease.

Discussion

Chagas disease (American trypanosomiasis) is a parasitic infection that affects 18 to 20 million people, mostly in Central and South America. A lifelong infection if untreated, the disease causes chronic symptoms in 10-30% of infected patients. Approximately 20,000 deaths occur annually secondary to cardiovascular complications. The chronic stage may present with sudden death from ventricular arrhythmias, and a dilated non-ischemic cardiomyopathy.

Cardiac findings include a right bundle branch block and/or a left anterior fascicular block on a resting ECG, a focal left ventricular apical aneurysm on a TEE, and myocardial fibrosis marked by delayed enhancement on CMR. CMR is useful in the assessment of disease severity and prognosis, since both have been shown to correlate with the degree of delayed hyper-enhancement and myocardial fibrosis.

In our patient, the cause of the renal infarcts was ascribed to emboli from the left ventricular apical aneurysm. Subsequent blood serologies and polymerase chain reaction (PCR) confirmed Chagas disease, and the patient was started on nifurtimox.

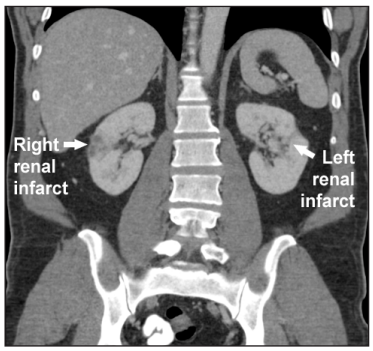

Figure 1

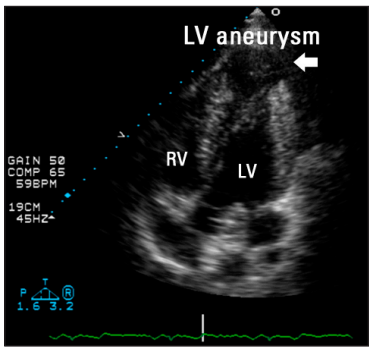

Figure 2

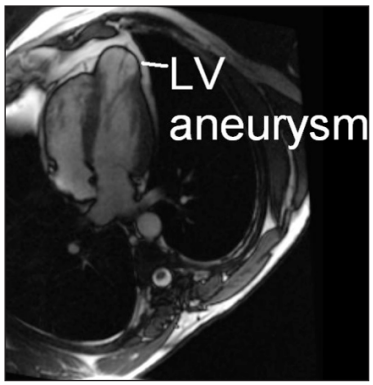

Figure 3

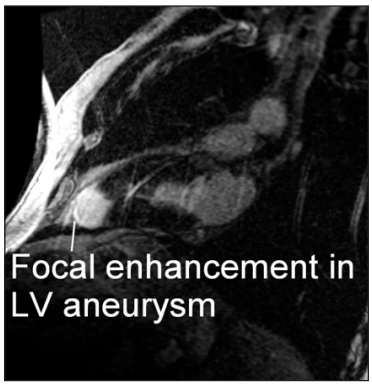

Figure 4

Figure 1: Abdominal CT images demonstrate bilateral wedge-shaped hypodensities in the kidneys, most prominent in the mid aspect of the right kidney.

Figure 2: TTE reveals a discrete left ventricular apical aneurysm.

Figure 3: Four-chamber CMR images reveal normal left ventricular size with marked thinning and focal aneurysm at the apex. The aneurysm measures 3.6 x 3.2 x 3.1 cm. Overall left ventricular systolic function was preserved with focal apical dyskinesis on cine images.

Figure 4: CMR delayed images revealed focal myocardial hyper-enhancement within the thinned wall of the aneurysm. The remainder of the myocardium demonstrated no abnormal delayed enhancement. The renal infarcts are thought to be due to emboli from thrombus in the LV aneurysm.

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