Left ventricular strain and chamber dimensions in pediatric sickle cell disease: age-related reduction in myocardial deformation independent of hemolysis and hydroxyurea therapy

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Category	Parameters	What They Measure	Clinical Relevance
Systolic function	- LV longitudinal strain - LVEF (%)	Strain: myocardial deformation. EF: traditional assessment of systolic function	Strain detects early dysfunction before EF drops. EF is conventional measure of systolic performance
Chamber size & remodeling	- LVEDd / LVESd - LVEDdi: LVEDd/BSA - IVSd / LVPWd - LV mass index	LV diameters, wall thickness, and indexed left ventricular size	Show effects of chronic anemia/volume overload which lead to dilation and/or hypertrophy
Diastolic function	- MV E and A velocities - E/A ratio - MV deceleration time (DT) - IVRT -Lat E′ / A′ velocities - E/E′ ratio - LA volume index	Mitral inflow, tissue Doppler; ventricular relaxation; LA size	Identify abnormal relaxation of the left ventricle, high filling pressures, and chronic diastolic burden
Pulmonary hemodynamics	- Maximal TR velocity	Peak regurgitant jet across tricuspid valve	Surrogate of pulmonary artery systolic pressure; elevated values suggest pulmonary hypertension

Supplementary table 1. Clinical significance of echocardiographic parameters. LV, left ventricle; LVEF, left ventricular ejection fraction; EF, ejection fraction; LVEDd, LV end-diastolic diameter; LVESd, LV end-systolic diameter; BSA, body surface area; IVSd, interventricular septal thickness in diastole; LVPWd, LV posterior wall thickness in diastole; MV, mitral valve; DT, deceleration time; IVRT, isovolumic relaxation time; E′, early diastolic tissue Doppler velocity; A′, late diastolic tissue Doppler velocity; LA, left atrium; TR, tricuspid regurgitation.