A rare case of giant left atrium in a child

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A 9-year-old girl presented with cough, shortness of breath was admitted to our hospital. The electrocardiogram demonstrated atrial tachycardia. Chest X-ray showed marked cardiomegaly with a cardiothoracic ratio of 0.78 (Panel A). Echocardiography revealed a giant left atrium (GLA) with an anteroposterior diameter of 9.5 cm, which pushed the left ventricular (4.1 cm) toward left anterior position and right ventricular towards right posterior position (Panel B, three-chamber view and Panel C, four-chamber view diastolic still frame, Supplementary material online, Movie S1), and severe mitral valve regurgitation with enlarged valve annulus, but without stenosis or prolapse (Panel D, four-chamber view systolic still frame, Supplementary material online, Movie S2-biplane view shows mitral valve morphology, Supplementary material online, Movie S3-mitral valve regurgitation). Computed tomography (CT) confirmed the above finding of severe dilated left atrium (Panel E) and normal pulmonary vein connection (Panel F).

The patient underwent partial plication of left atrial wall, left atrial appendage occlusion and mitral valvuloplasty. The pathology of the left atrium showed extensive myocardial hypertrophy and degeneration, myxoid degeneration of the interstitial, and little inflammatory cell infiltration (Panel G). One week later, the follow-up of the echo demonstrated the remarkably decreased left atrium with an anteroposterior diameter of 3 cm (Panel H-parasternal long-axis view and I-four-chamber view) and mild mitral valve regurgitation. The GLA which usually presented in adult patients is typically caused by rheumatic mitral valve disease, very few by mitral valve prolapse. Herein, this extremely rare case of GLA may be caused by the primary lesion of myocardium of the left atrium in a 9-year-old girl.

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