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4D strain in systemic diseases among pediatric age group

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Background: 4D strain is a post-processing research tool that tracks inherent features in a 3D image called "natural acoustic markers" from frame to frame in three dimensions over time.

Objective: This presentation aimed to delineate the feasibility of 4D strain in evaluation of cardiac function in children with common extra cardiac disorders to explore our experience at Pediatric Department, Cardiology Unit, Faculty of Medicine, Tanta University.

Subjects & Methods: Group of systemic diseases include Type 1 DM, bronchial asthma, acute lymphoblastic leukemia, thalassemia, sickle cell anemia, iron deficiency anemia, chronic liver diseases, protein energy malnutrition, critically ill children, severe motor and intellectual disabilities were studied. All studied patients were subjected to a full medical history, thorough clinical examination, conventional Doppler echocardiography, tissue Doppler imaging, speckling tracking and real time 3 dimensional echocardiography.

Conclusion: From the results of this work, we concluded that the use of newer echocardiographic techniques, including 4D may have potential benefits in the assessment and management of extra cardiac (systemic) disorders.

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