



RELATIONSHIP OF SYSTOLIC PARIETAL STRESS AND CARDIAC MASS IN CHILDREN WITH VENTRICULAR SEPTAL DEFECT

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Abstract:

INTRODUCTION: The ventricular septal defect (VSD) is the most common congenital heart disease and is an abnormal heart overload. LV parietal stress is a modulator of ventricular hypertrophy in overload conditions. Ventricular geometry also influences the degree of parietal stress. The understanding of afterload has diagnostic, prognostic and therapeutic implications that are essential in the decision-making in these patients.

Objective: Quantify LV systolic wall stress in patients with VSD according to the geometric pattern to establish its behavior with other hemodynamic variables.

Methods: Between August 2006 and June 2008, 120 patients with VSD were studied, aged 1 month - 15 years, (4.71±3.72) male sex (54.2%). Demographic variables, anatomical and functional characteristics of the LV and the VSD were considered. According to anatomic pattern LV were classified in normal, geometric remodeling, concentric hypertrophy and eccentric, at the same time as a) No hypertrophic b) hypertrophic. Systolic parietal stress were calculated: $0.86x (0.334xPASxDVItD) / [PPVItD (1 + (PPVItD / DVItD))]^2 (x103dinas/cm^2)$, cardiac mass index: $1.04 (+ PPVItD DVItD SIVtd +) 3 - (DVItD) 3 * 0.825 +0.6$ and relative wall thickness after $2xPVItD ERP / DVItD$. With random probability sampling, continuous variables (M ± SD), qualitative frequency distribution. For association analysis simple linear regression and t test for comparison were used.

Results: The most frequent VSD was the perimembranous (82.2%), size: $9.84 ± 3.32mm$, Qp/Qs: $2.76±1.15$, gradient: $44.32±24.34 mmHg$, DVItD: $35.69±7.62 mm$, VFVItD: $57.37±28.44cm^3$ with $117.44±46.60 gr/m^2/sc$ mass index and WRT: $0.36±0.11$. The most common anatomical pattern was eccentric: 44/36.70%, followed by normal: 41/34.20%, PASP: $51.98±20.57mmHg$, SAP: $98.03±11.67 mmHg$, EF: $68.36±7.56 %$, SPS: $84.80±34.53 x103dins/cm^2$. The comparison between



groups found that patients with hypertrophy had a higher SPS and was higher according to the anatomical pattern. SPS was correlation between the mass $r=0.877$, $p=0.001$, and the anatomical pattern. Also was correlated with SAP $r=0.522$, $p=0.001$.

Conclusions: In patients with VSD, the SPS is correlated with hypertrophy and PAS. The SPS is a modulator of left ventricular hypertrophy in overload conditions. Ventricular geometry also influences in the degree of SPS. His understanding has prognostic and therapeutic implications.

Biography:

Prof. Dr. Abu Jayyab is a Dean of Health Sciences & Medical Sciences and Medical at the Emirate University College of Technology (ECT), Abu Dhabi UAE. He also involves in the Design and Accreditation of Health and Medical Sciences at Emirates College of Technology (ECT); Prior to joining ECT, he was the Consultant of Academic Affairs, Chief Academic Officer & International Academic Advisor, at Royal Medical University.

Publication of speakers:

1. SURGICAL CLINICAL ANALYSIS OF INFECTIOUS ENDOCARDITIS IN PEDIATRIC PATIENTS WITH CONGENITAL CARDIOPATHIES
2. Aneurysm left atrial appendage.

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