Congenital left ventricular aneurysms or diverticula: Presentation, Characteristics, and Prognosis

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Objectives: Congenital left ventricular aneurysm (LVA) and diverticulum (LVD) are rare cardiac anomalies. We sought to investigate the clinical characteristics and outcome in all ever published patients.

Methods: MEDLINE, Web of science, Google and EMBASE, and reference lists of relevant articles were searched for publications reporting on patients diagnosed with LVA or LVD.

Results: We identified 664 patients published since 1816 [326 (49.1%) LVA, 336 (50.6%) LVD, 2 (0.3%) both]. Mean age at diagnosis was 34.1±27 (LVA) and 29.7±27.6 years (LVD; p=0.05). 56.4% were male. LVA were larger (38.7±22.5 mm versus 31.4±21.2 mm; p=0.002) and frequently found in submitral location (33% versus 4.9%; p<0.001), LVD were frequently located at the LV-apex (61.2% versus 28.7%; p<0.001). LVD were often associated with cardiac (34.2% versus 2%; p<0.001) or extracardiac anomalies (32.7% versus 3%; p<0.001). Pts with LVA presented more frequently with sustained ventricular tachycardia/ventricular fibrillation (16.6% versus 8.3%; p=0.001), the incidences of rupture (4% versus 4.5%; p=0.9), syncope (8.3% versus 5.1%; p=0.1), and embolic events (4.9% versus 3.6%; p=0.4) were not different between LVA and LVD.

Mean follow-up was 56.3±43 months. Cardiac death occurred more frequently in the LVA group (11% versus 5%; p=0.05) at a mean age of 8.9±11.6y and 14.1±23.4y, respectively. The leading cause of cardiac death was congestive heart failure in the LVA-group (48% versus 0%; p=0.03), and rupture in the LVD-group (75% versus 28%; p=0.04).

Conclusions: Congenital LVA and LVD are two distinct entities with regard to clinical presentation, associated cardiac anomalies, anatomical location, and prognosis.