Evaluation of 2283 patients with isolated ventricular septal defect by echocardiography up to 26 years from a single center

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Spontaneous closure of ventricular septal defects has been reported. While ventricular septal aneurysm is an important mechanism of closure, it was observed that aneurysmal transformation may be particularly likely to develop left ventricular to right atrial shunt and subaortic ridge. Here we present the medical records of 2283 patients with ventricular septal defect to assess the rate of spontaneous closure, aneurysmal transformation, left ventricular to right atrial shunt, subaortic ridge, aortic valve prolapsed and aortic regurgitation.

Materials and Methods: The study population consisted of 2283 patients with isolated ventricular septal defect who had been studied at our institution from 1988 to 2014 with transthoracic echocardiography. Ventricular septal defects were classified according to their location and relation to the tricuspid annulus and semilunar valves. Defect size was expressed in terms of the size of the aortic root. Defects approximating the size of the aorta were classified as large, defects one-third to two-thirds the diameter of the aortic root were classified as moderate and defects less than one third the diameter of the aortic root were classified as small. SPSS17 was used for statistical analysis.

Results: Ventricular septal defects were perimembraneous in 67.7%(1530), trabecular muscular in 24% (548), muscular outlet in 4.9% (112), muscular inlet 3.1% (69) and doubly committed subarterial in 0.8% (19) and Swiss cheese in %0.2 (4) . Defect size was classified in 65.7% (1499) as small, in 17.8 (407) as moderate and 16.5 (377) as large. The percent of spontaneous closure in perimembraneous ventricular septal defects was %13.1 and %30.9 in muscular ventricular septal defects. While aneurysmal transformation was detected %44.2 in the patients with perimembranous ventricular septal defect, aortic valve prolapse was the most common complication (%14.1) observed during the follow ups. Left ventricular to right atrial shunt, subaortic ridge and aortic regurgitation were detected with the percentage of 12.3%, 3.4% and 9.2% respectively in patients with perimembranous defects.

Discussion: The rate of spontaneous closure in muscular defects was higher then the rate of spontaneous closure in perimembranous defects.