

The Prevalence of LSVC in Patients With and Without Congenital Heart Disease

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BACKGROUND: The persistent left superior vena cava (LSVC) is one of the common anomalies of the systemic veins. The LSVC is formed by union of the left jugular and left subclavian veins. It usually drains to the coronary sinus. The prevalence of LSVC in the general population is 0.1 to 0.5 percent (1, 2, 3). It is more common in patients with congenital heart disease (CHD) 1.3 % (4). In one of the studies it was found to be 5% (5). The importance of detecting LSVC prior to cardiac surgery is paramount for the systemic veins cannulations. Failure to detect its presence before surgery may lead to some difficulties and

OBJECTIVE: To evaluate the prevalence of persistent LSVC in prolongation of the procedure. patients with or without congenital heart disease in our patient population.

PATIENTS AND METHODS: This prospective study involved all the patients referred to our institute for cardiac evaluation by echocardiography. All echocardiographic studies were reviewed for presence of persistent LSVC. The demographic data, CHD diagnosis, presence of LSVC and associated diseases or syndromes were documented. The studies were divided in two groups: the first group involved patients with CHD, the second were patients without CHD. The incomplete echocardiographic studies were excluded from analysis. The diagnosis was established using two echocardiography views: parasternal long axis view when detecting dilated coronary sinus and high parasternal view seeing the LSVC.

RESULTS: The total number of patients examined were 2042. Out of these studies, 1832 were found to have complete echocardiographic evaluations. 738 (40 %) patients had CHD and the rest had no CHD. The prevalence of LSVC in those with CHD was 7.8 % and in those without CHD was 0.9%. The most common cardiac defect associated with LSVC was complete atrio-ventricular septal (AVSD) defect (19%), all these patients were with Down's syndrome. The total no of patients with AVSD in our study was 41 and LSVC was found in 11 (26%) of them. This relation was statistically significant with p value of less than 0.001.

Compared to studies which used same diagnostic modality the prevalence of LSVC with CHD in the current population was higher (7.8% versus 5%), (5). In one study the prevalence was found to be 11%, however in that study, the diagnostic method was invasive cardiac catheterization which is more sensitive than echocardiography (6). In addition the prevalence of LSVC patients without CHD in the current population was almost double in comparison to those reported before (0.9% versus 0.5%).

CONCLUSIONS: The prevalence of LSVC in the current population is higher than reported in the literature. The patients with Down syndrome have the highest prevalence of LSVC, especially those with complete atrioventricular septal defect. Interestingly, in this category of patients in our population, the prevalence is almost double what was reported in other studies. Furthermore the prevalence of LSVC in patients without CHD is almost double than those reported elsewhere. The current result highlights the importance of searching for the presence of LSVC before cardiac surgery, especially in patients with Down syndrome.

