

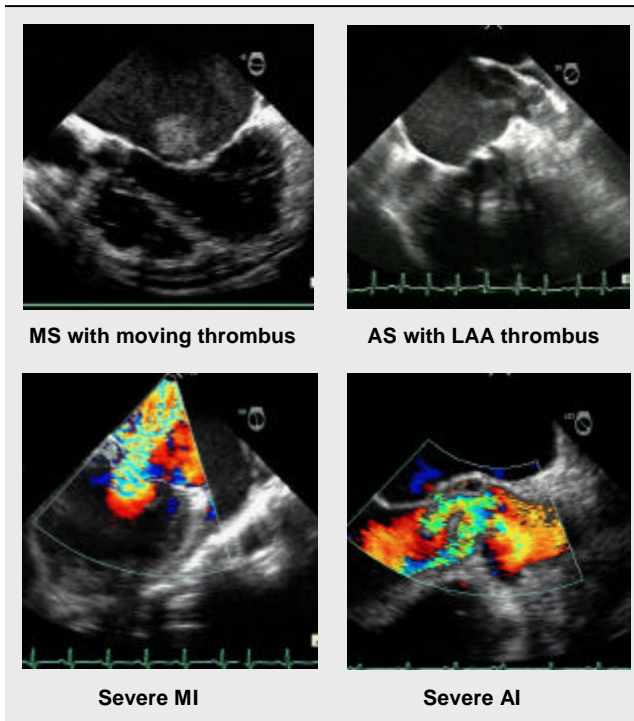
Incidence of left atrial appendage thrombus and slow flow in patients with aortic stenosis

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Background: It is well known, that patients with mitral stenosis have a high incidence of left atrial appendage (LAA) thrombus seen with transoesophageal echocardiography (TEE). What is the frequency of thrombi in the more commonly seen patients with aortic stenosis?



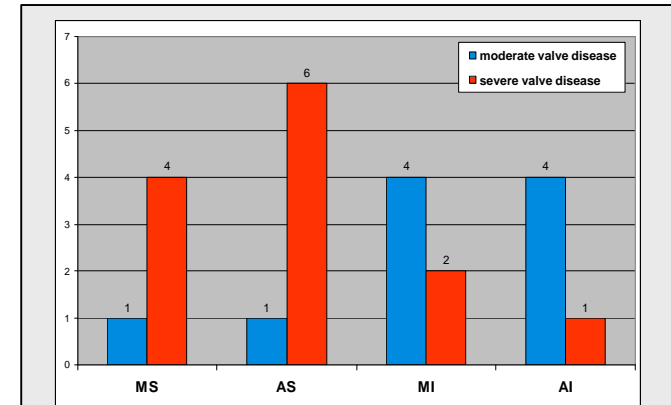
	moderate valve disease	severe valve disease
MS	1 (3,1%)	4 (14%)
AS	1 (1,3%)	6 (2,5%)
MI	4 (1,0%)	2 (0,8%)
AI	4 (2,2%)	1 (1,0%)

LAA thrombus patients (n)

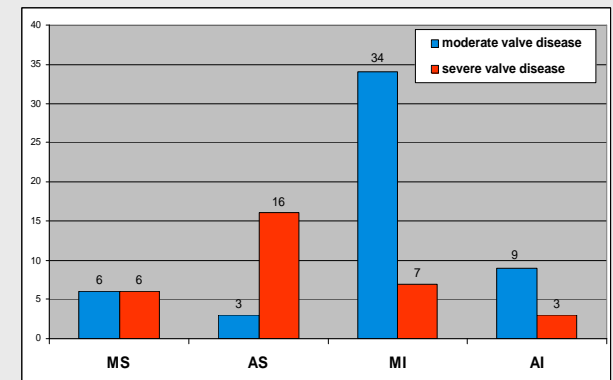
	moderate valve disease	severe valve disease
MS	6 (19%)	6 (21%)
AS	3 (4,0%)	16 (6,8%)
MI	34 (8,4%)	7 (2,8%)
AI	9 (5,0%)	3 (2,9%)

Slow flow patients (n)

Results: In 44 (1,5%) of all TEE patients a LAA thrombus was present and in 158 patients (5,3%) LAA slow flow was recognised. The thrombus group were slightly older than the entire TEE group (64,6 vs 63,2 years) and had a lower mean ejection fraction than the entire group (EF = 47% vs 55%). The slow flow group had a mean age of 66 years and EF was 51%. The absolute and relative incidence of thrombi and slow flow for patients with mitral stenosis (MS) and insufficiency (MI), aortic stenosis (AS) and insufficiency (AI) is displayed in the table. As expected mitral stenosis patients have the highest relative incidence of LAA thrombus and slow flow. Aortic stenosis is the second leading valve disease. The absolute frequency of 16 patients with severe AS exceeds the 6 patients with severe MS. While the EF in the MS patients was near normal (57%) the EF was markedly reduced in patients with moderate or severe AS (46%), MI (46%), and in AI (42%).



LAA thrombus patients (n)



Slow flow patients (n)

Methods: We analysed the frequency of LAA thrombus and slow flow in 2984 consecutive TEE studies performed at our institution from January 2000 to December 2003. LAA thrombus was identified in 2 D mode, LAA slow flow was defined with spontaneous LAA echo contrast or pulse wave flow less than 20 cm/sec.

Conclusion: By today's valve disease spectrum we see that the absolute number of LAA thrombus and slow flow in aortic stenosis patients exceeds the number of thrombi in mitral stenosis. Particularly the combination of aortic stenosis and reduced ejection fraction should raise suspicion for the existence of LAA thrombus and slow flow.