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Trans-esophageal echocardiography: An indispensable guide for transcatheter device closure of ruptured sinus of Valsalva aneurysm

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Ruptured sinus of Valsalva aneurysm (SOVA) is a rare but well-described clinical entity. Sinus of Valsalva aneurysm is five times more common in Asians in whom it presents typically in adolescence and young adulthood.^[1] Successful transcatheter closure (TCC) is being increasingly reported as single case reports or small series.^[2-4]

A 20-year-old boy presented with shortness of breath and chest pain since 1 week. Two-dimensional transthoracic echocardiography (TTE) revealed sinus of Valsalva aneurysm from right coronary sinus rupturing into right atrium. Being an isolated RSOV patient was taken for transcatheter device closure.

The procedure was performed under general anesthesia with TEE guidance [Figures 1a-e]. The femoral vein and artery were accessed. Intravenous heparin (100 IU/kg) and cefazolin were given. Right and left heart pressures and saturations were obtained, and aortic root angiography was performed. The ruptured SOVA was measured at its aortic end as well as at the rupture site on TEE [Figure 1a]. The larger of the two measurements was considered for device selection. The size of the amplatzer duct occluder (ADO) selected was such that its aortic segment was 2-4 mm larger than this diameter. An appropriately sized ADO (10/8 mm) with its attached delivery cable was then inserted through the delivery sheath, and its aortic disk was deployed in the ascending aorta. The whole

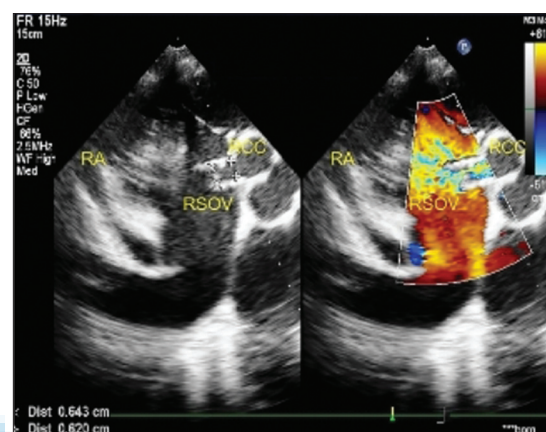


Figure 1a: Mid-esophageal aortic sagittal view showing windsock aneurysm arising from right coronary sinus rupturing into right atrium. AV - Aortic valve; RA - Right atrium; TV - Tricuspid valve; RSOV - Ruptured sinus of Valsalva

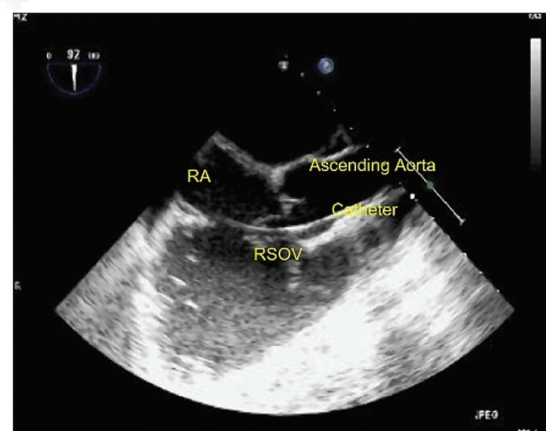


Figure 1b: Mid-esophageal aortic longitudinal view showing catheter entering from the right coronary sinus into ruptured sinus of Valsalva into right atrium. ADO - Amplatzer duct occluder; AV - Aortic valve; RA - Right atrium; TV - Tricuspid valve; RSOV - Ruptured sinus of Valsalva

assembly was pulled back till the aortic disk blocked the aortic end of the SOVA as seen

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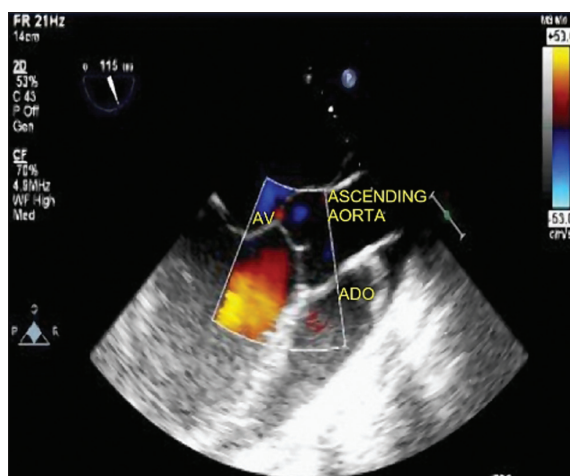


Figure 1d: Mid-esophageal aortic lax view showing amplatzer duct occluder closing the defect. ADO - Amplatzer duct occluder; AV - Aortic valve; RA - Right atrium; TV - Tricuspid valve; RSOV - Ruptured sinus of Valsalva

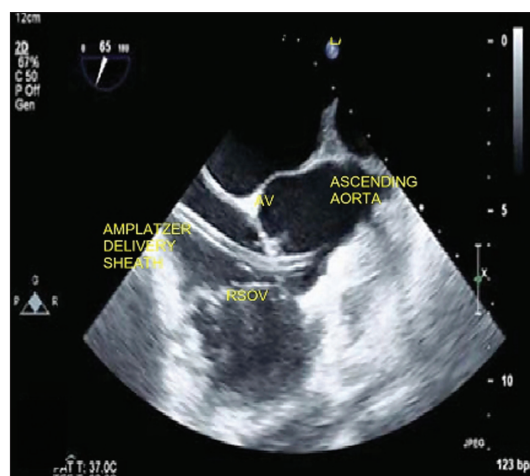


Figure 1c: Mid-esophageal aortic lax view showing amplatzer delivery sheath entering from right atrium into ruptured sinus of Valsalva into ascending aorta. ADO - Amplatzer duct occluder; AV - Aortic valve; RA - Right atrium; TV - Tricuspid valve; RSOV - Ruptured sinus of Valsalva

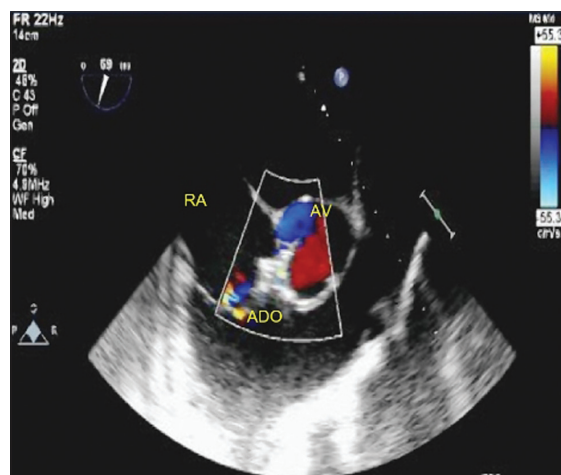


Figure 1e: Mid-esophageal aortic SAX view showing amplatzer duct occluder into right coronary sinus. ADO - Amplatzer duct occluder; AV - Aortic valve; RA - Right atrium; TV - Tricuspid valve; RSOV - Ruptured sinus of Valsalva

was no significant aortic regurgitation (AR), tricuspid regurgitation (TR), residual shunt, or any encroachment on coronary arteries as seen on TEE [Figures 1d and e].

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