

DEVICE CLOSURE OF CONGENITAL SINUS OF VALSALVA ANEURYSM RUPTURE



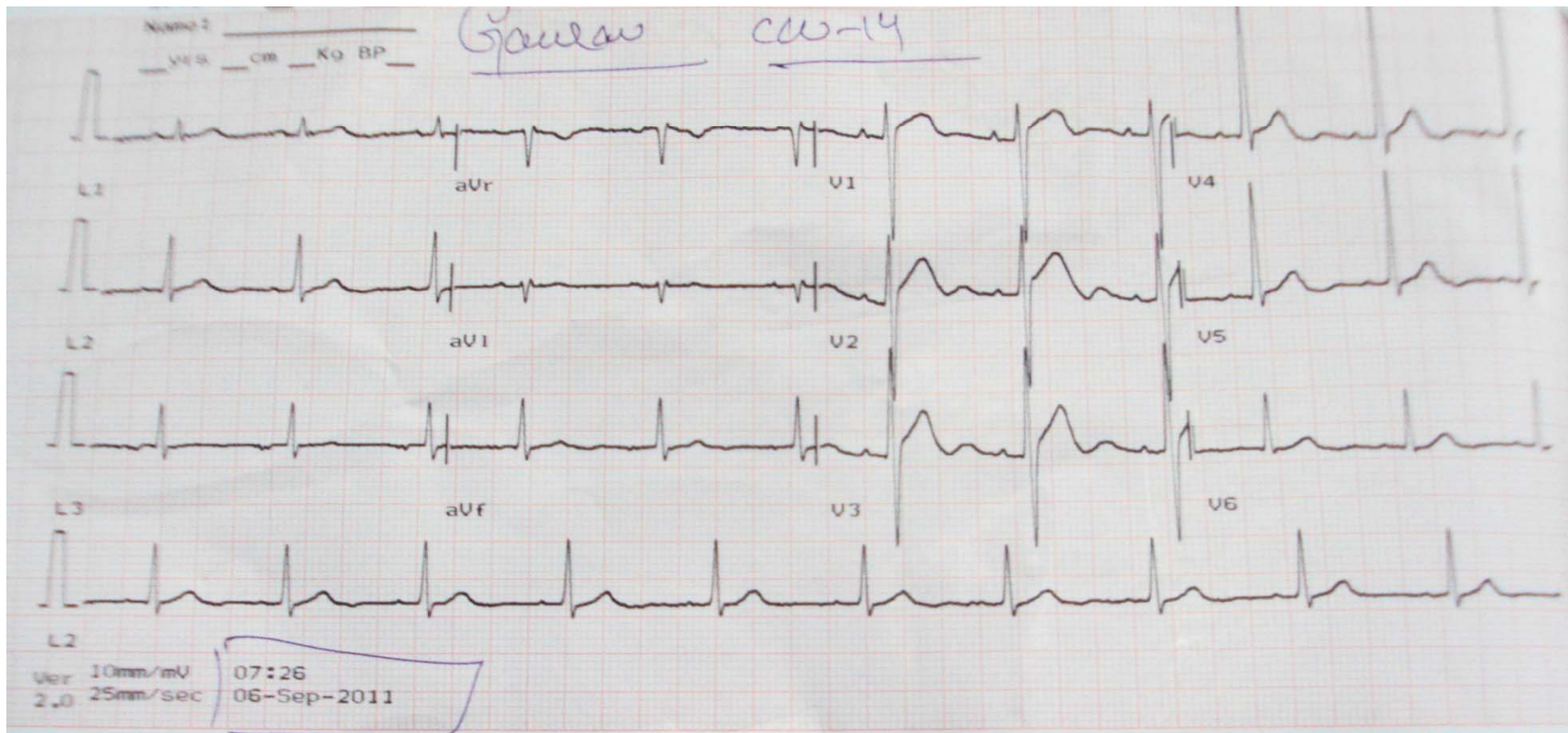
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Case History



- 18yr Male
- Recurrent episodes of LRTI since two months of age – three to four episodes per year
- Breathlessness on exertion for 13 years
- Syncope, two episodes – one year back & one month back
- On examination, wide pulse pressure & continuous murmur with thrill in left parasternal area

Preoperative ECG



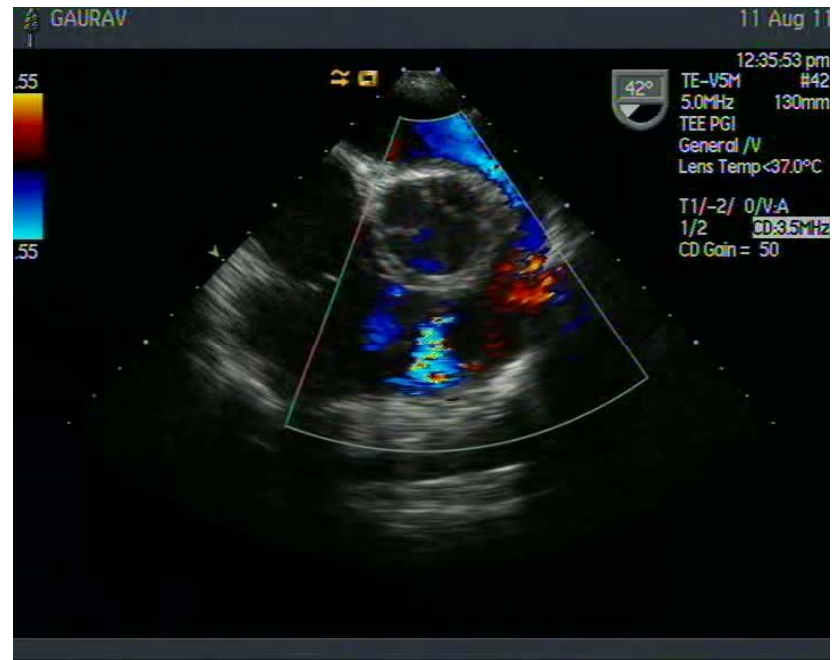
Echocardiography- RSOV to RV

Para-Sternal Short axis (Basal)



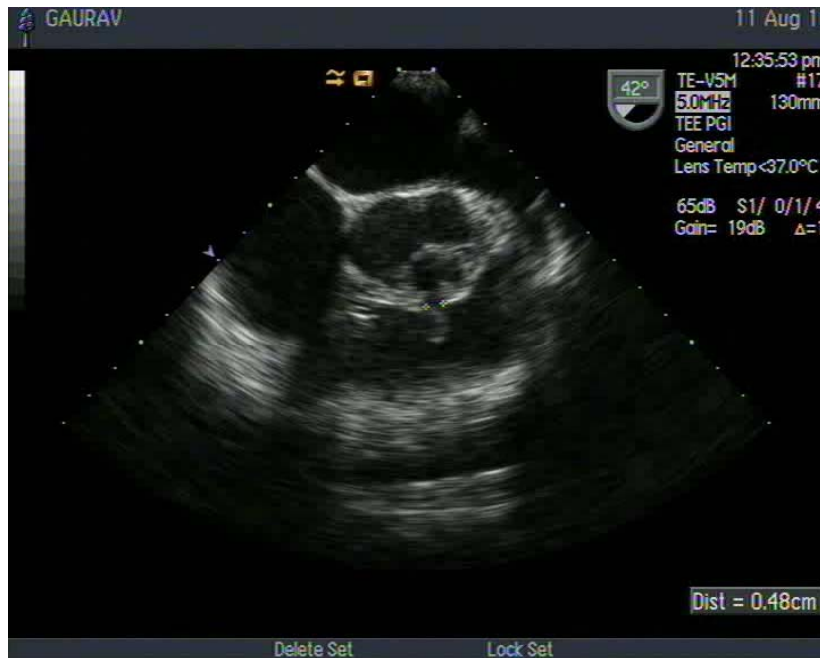
Para-Sternal Long axis





Trans-Esophageal echocardiography

Basal view (at Aortic Valve)

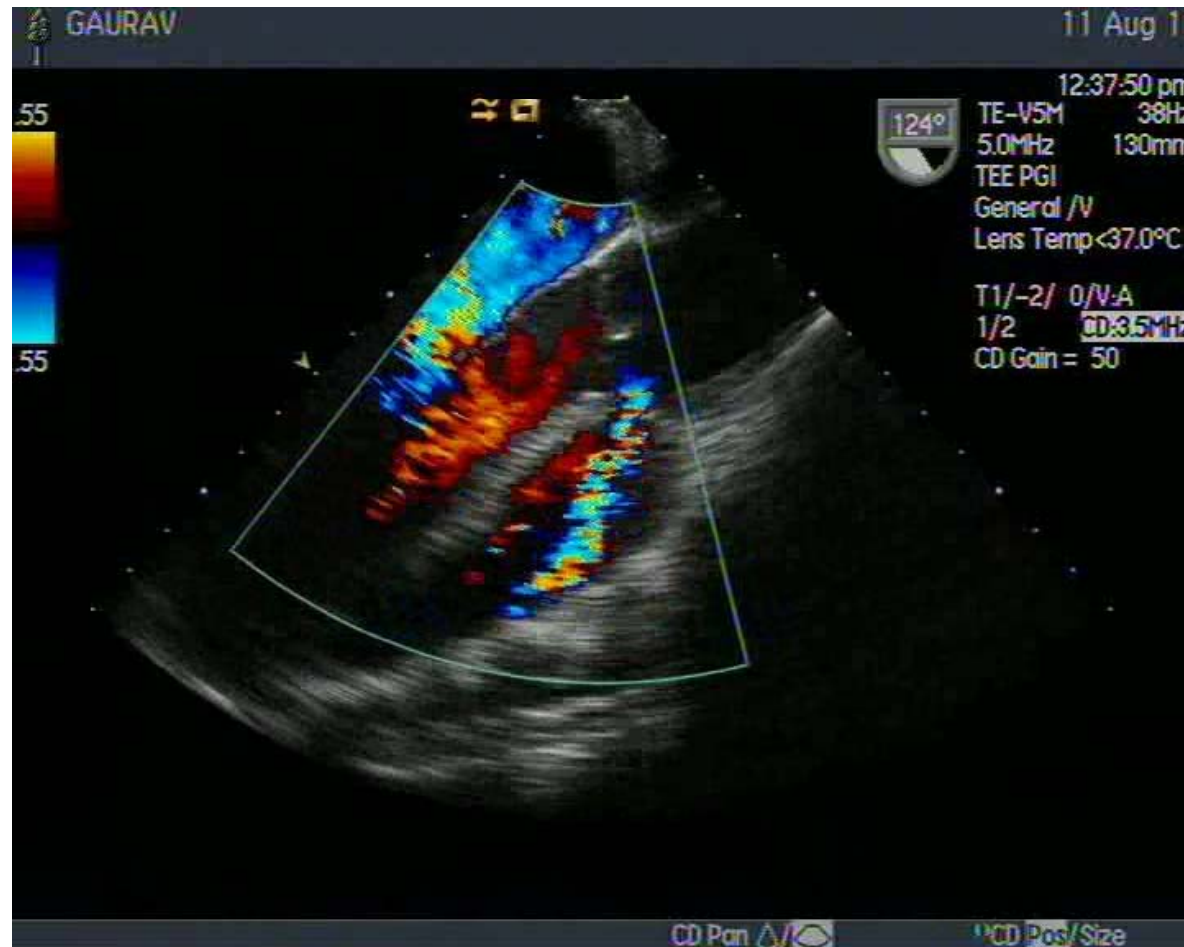


Color flow doppler



Trans-Esophageal echocardiography

Long axis view

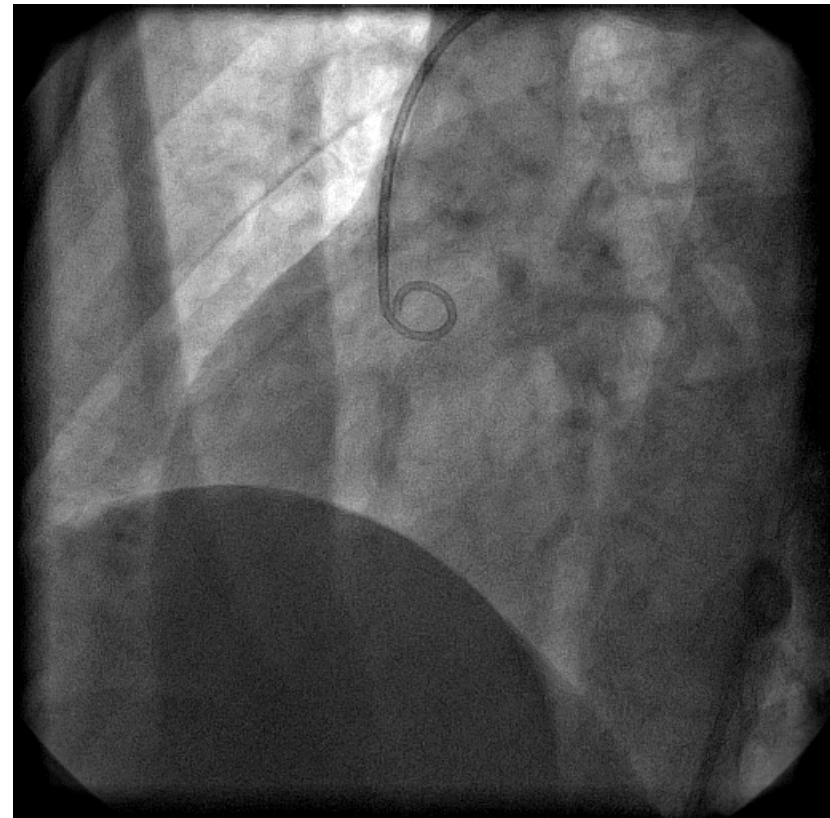


Catheterization study



- Lt 6F Femoral Arterial and Rt 7F Femoral Venous sheaths
- O₂ Saturation- Step up of 11% in RV
(RA- 64%; RV- 75%; Aorta- 98%)
- Significant Left to Right shunt (>2:1)

Aortic root angiogram showing rupture of sinus of Valsalva into RV- 6mm at aortic end



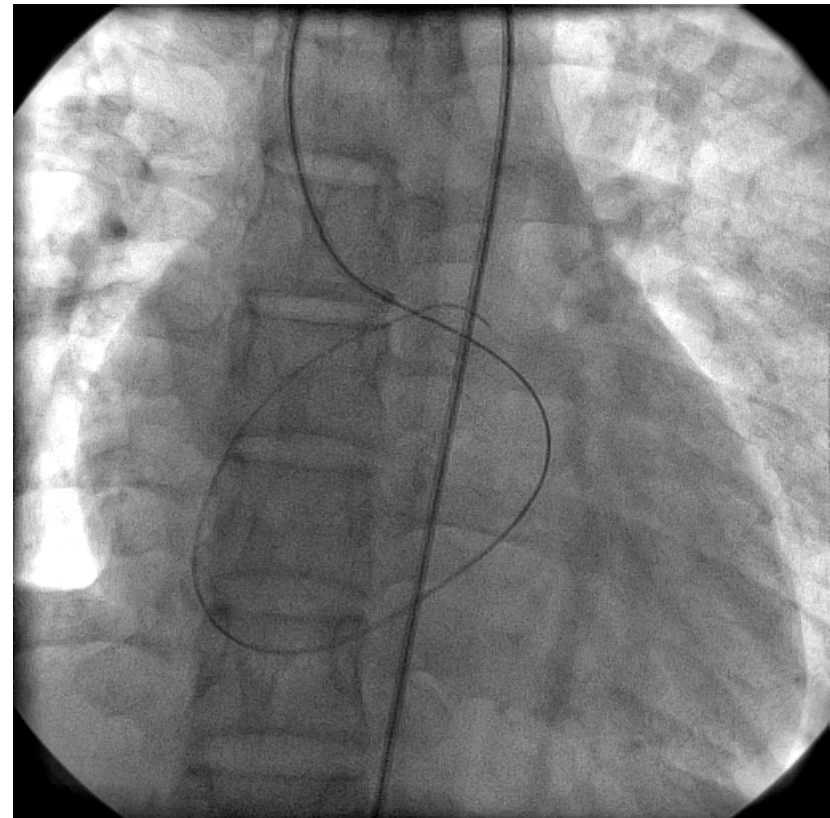
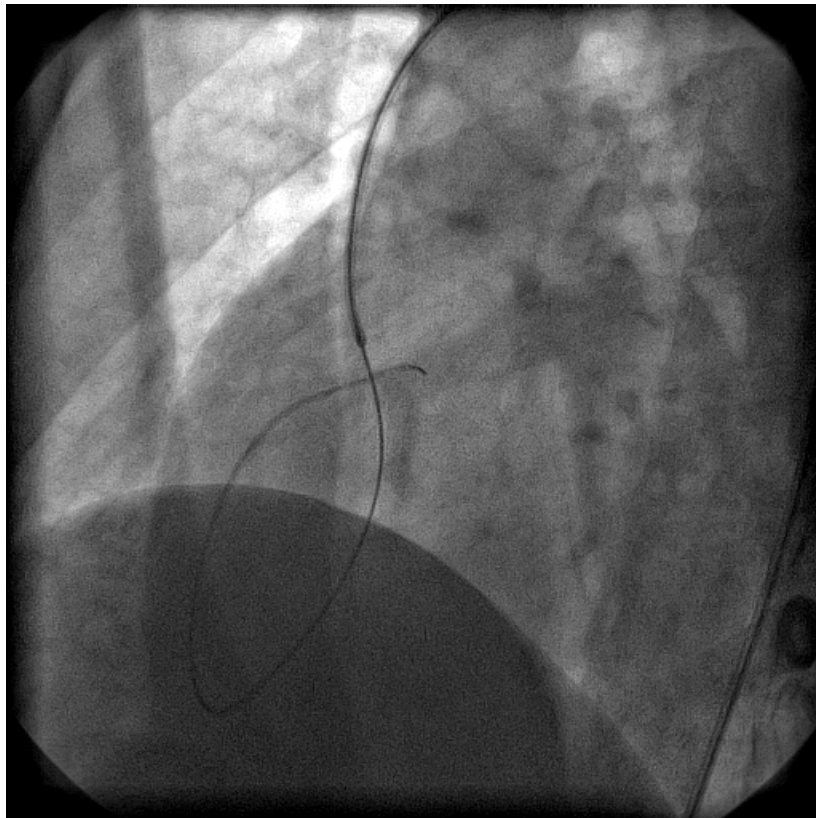
Procedure

Access:

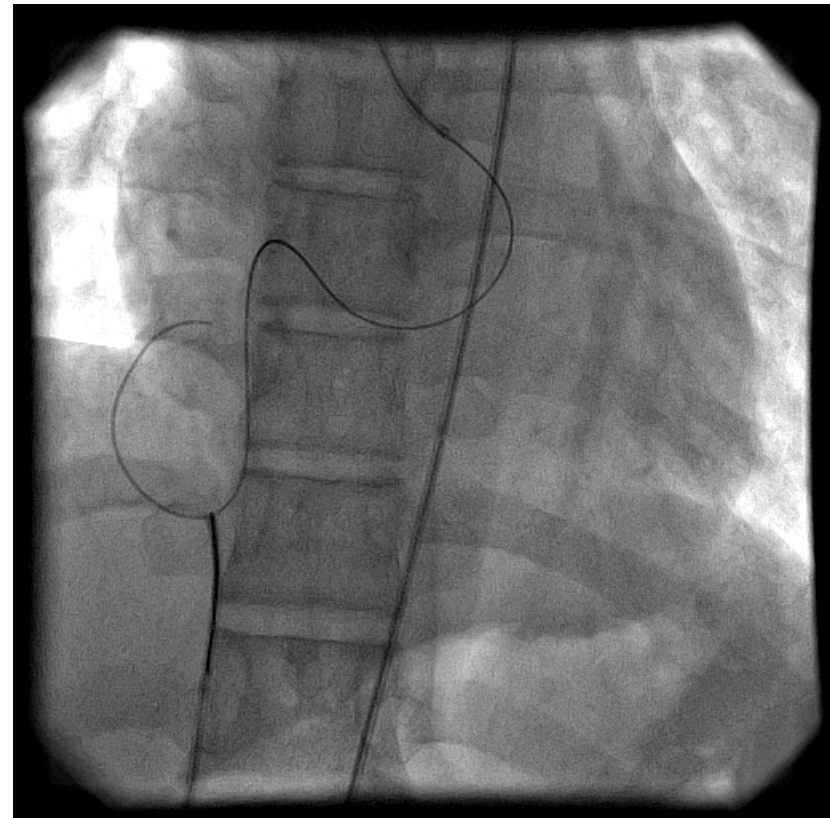
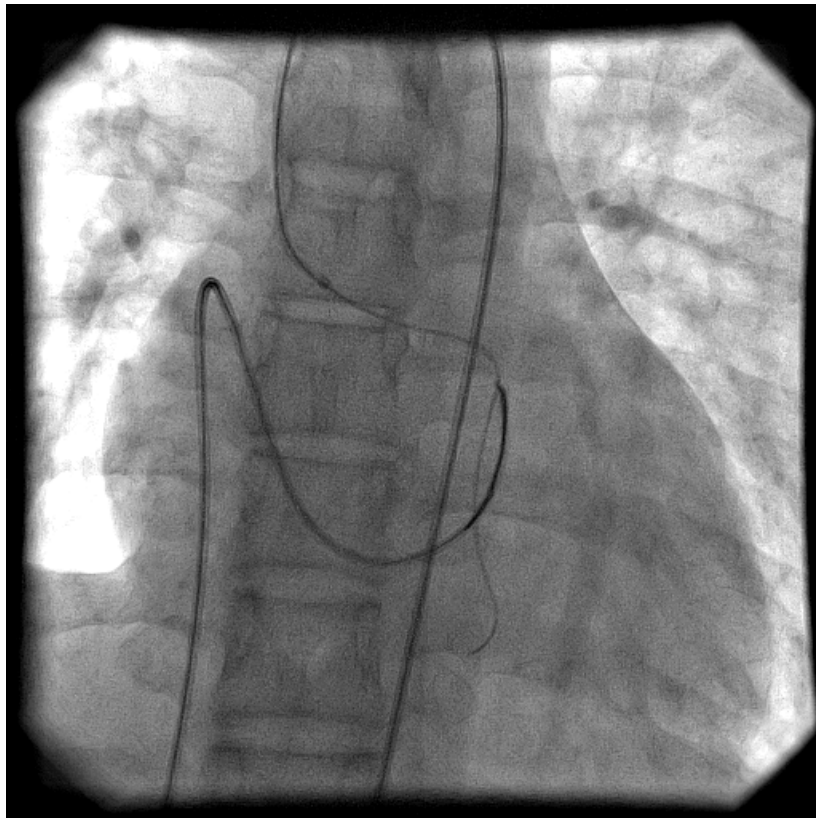
Left femoral artery 6 F sheath

Right Femoral Vein 7 F sheath

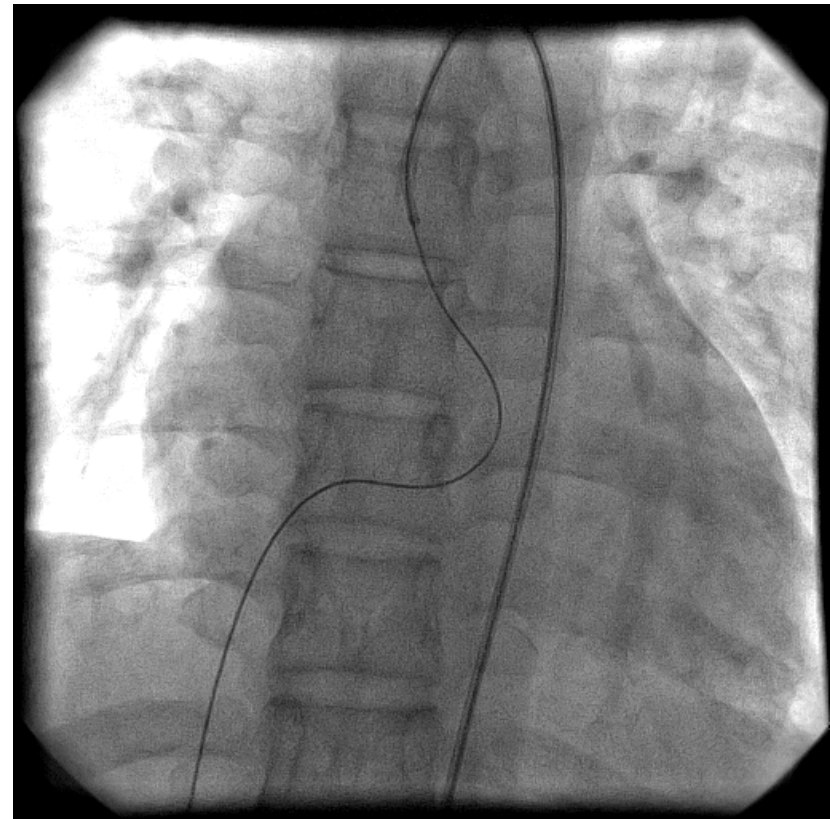
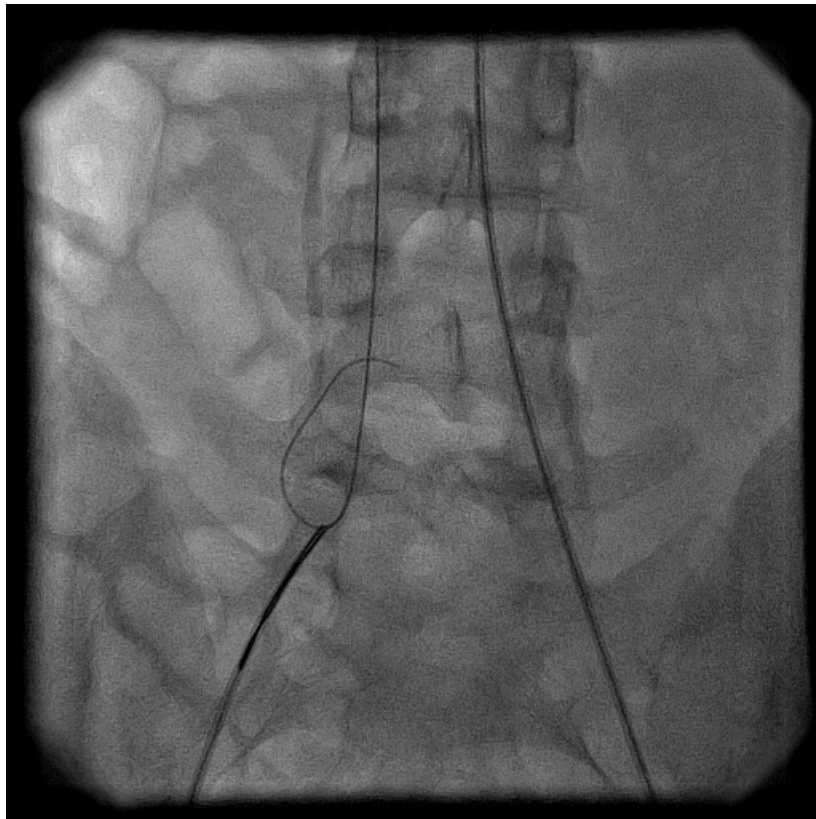
Judkins Right 6F from Lt Femoral arterial route, 0.035" 260
cms J tipped Terumo wire passed across Rt aortic sinus into
RV



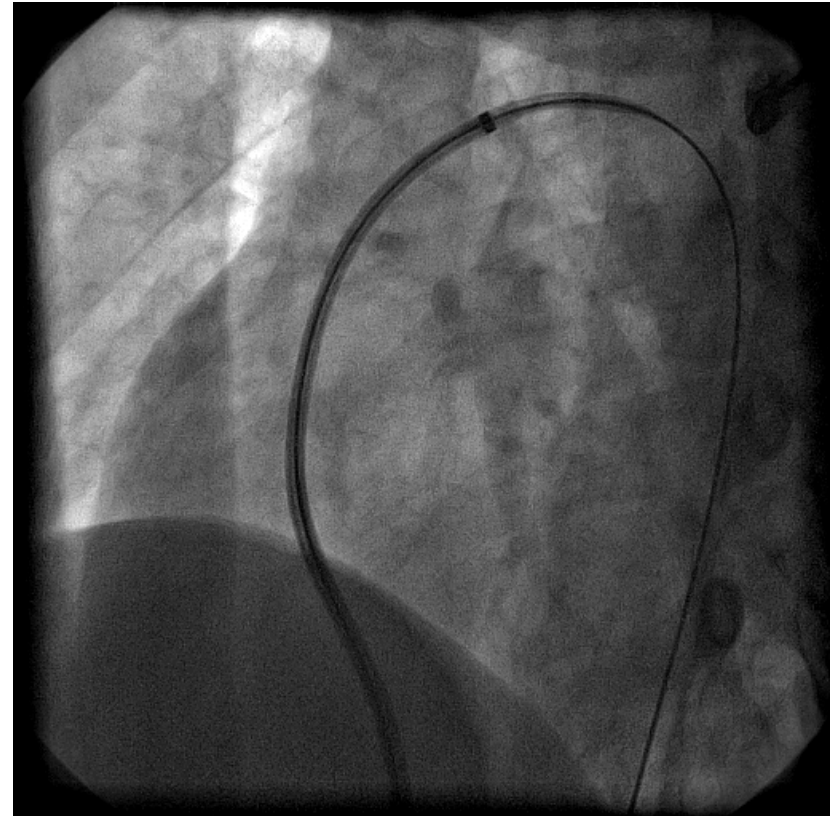
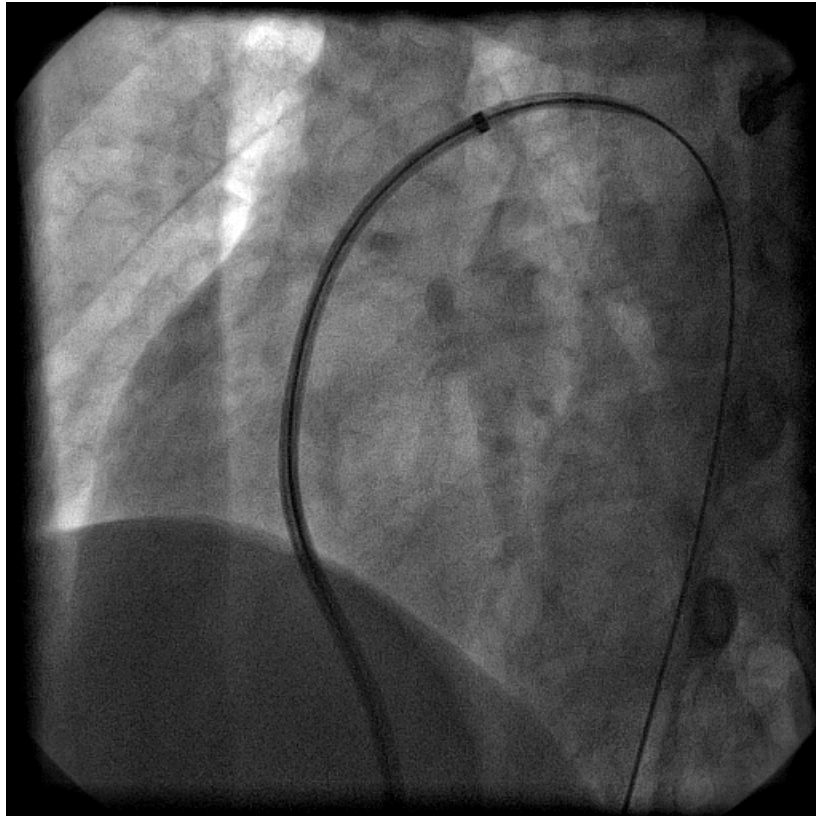
Snaring with 10 mm Goose neck snare from Rt Femoral vein- forming an Arterio-venous rail



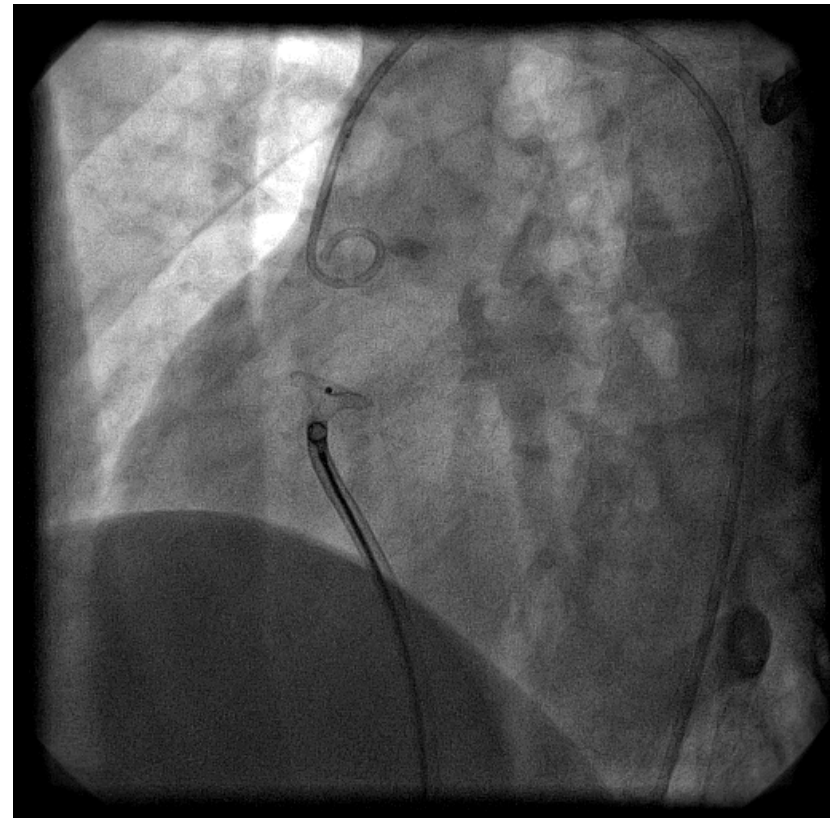
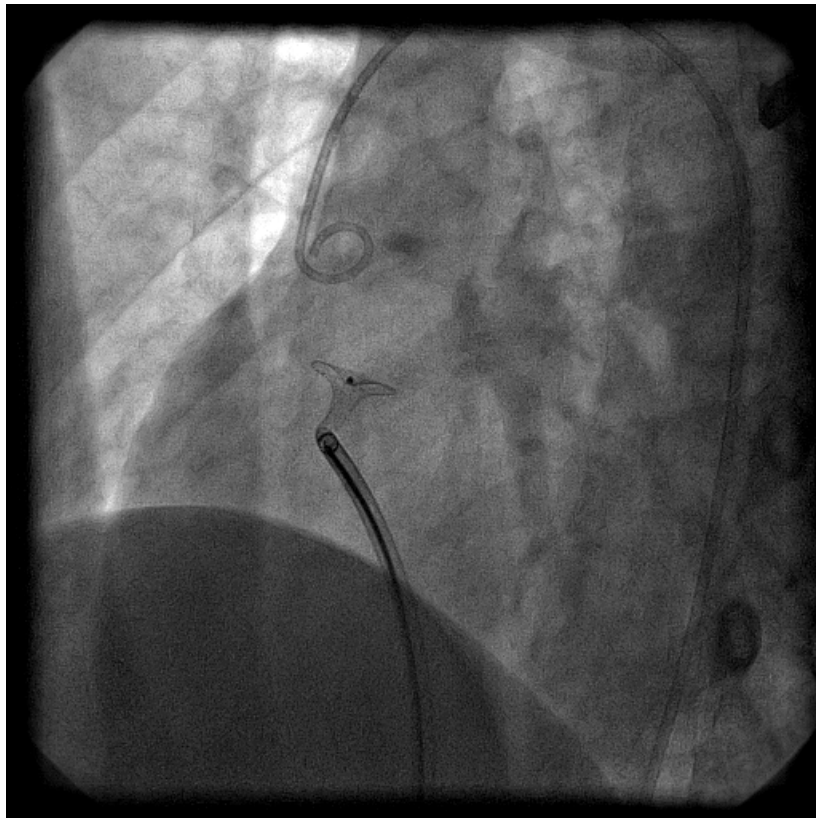
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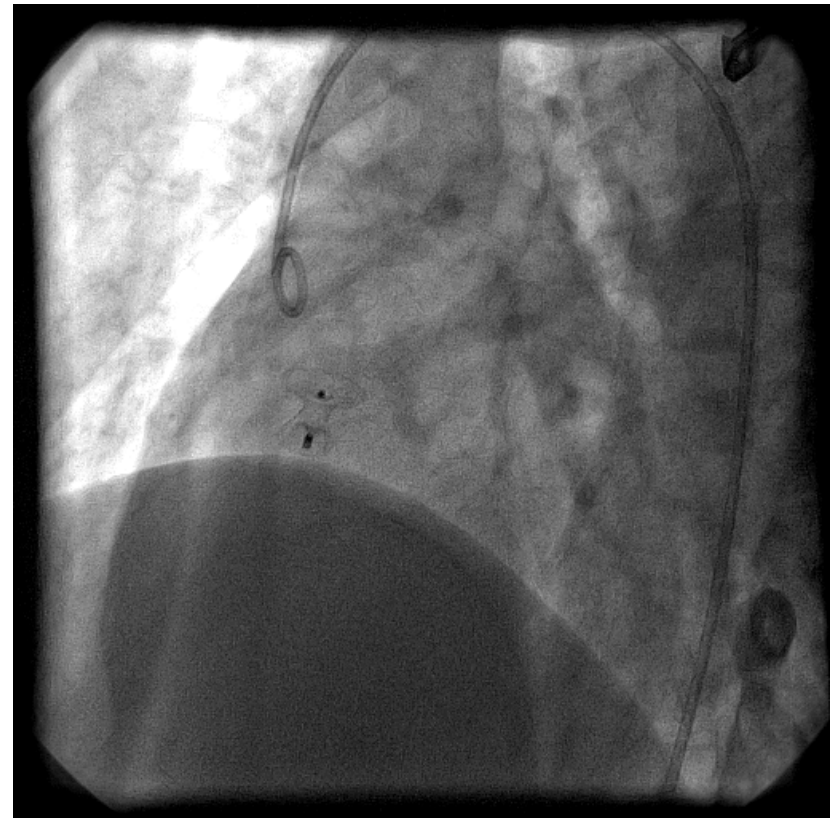
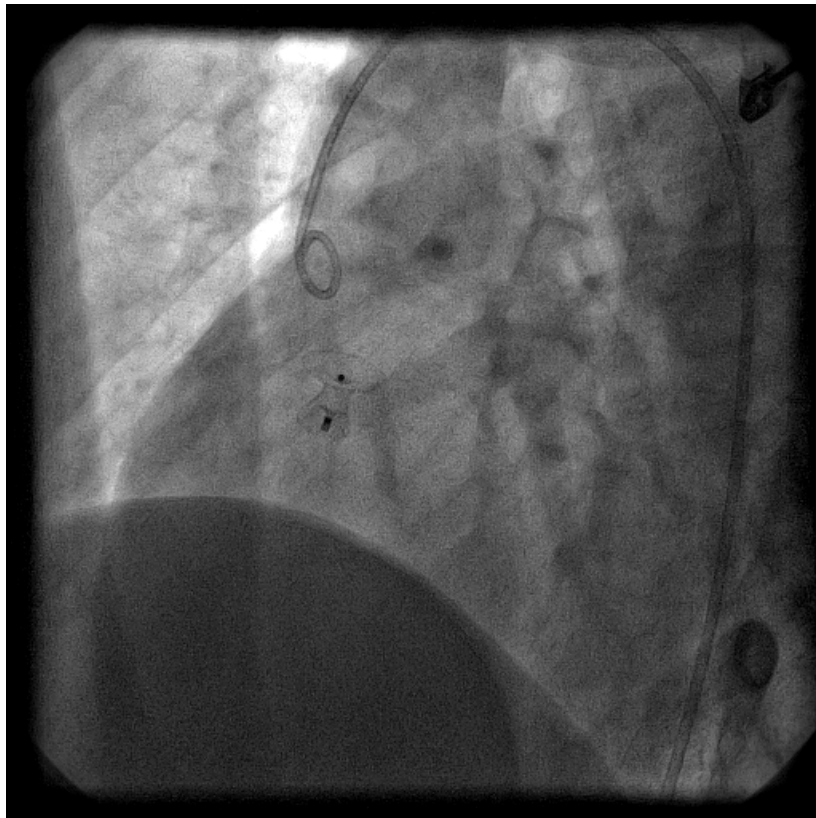
Exchanged with 0.035" Amplatzer Stiff wire
8Fr delivery sheath for device



10/12 PDA duct occluder device deployed Aorta retention disc first



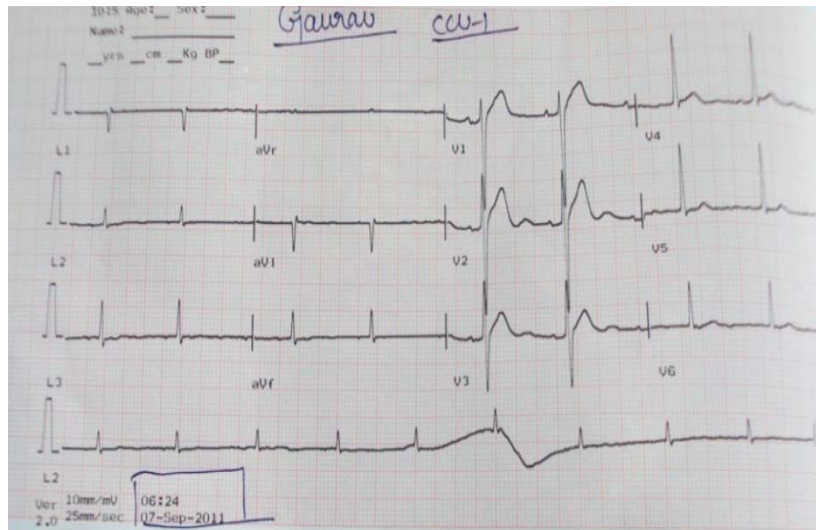
Check Aortic root angiogram after 10-15 min retention disc of the device released



Post-Operative Course- Uneventful

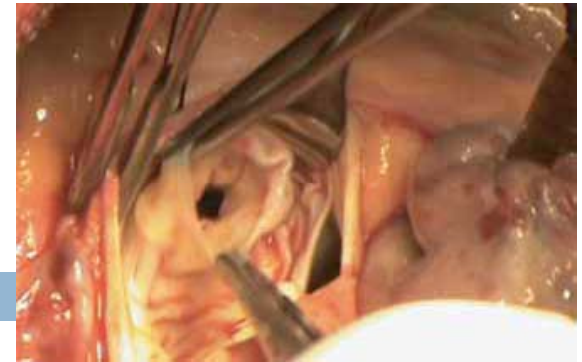
24 hrs ICU observation

ECG



- Antibiotic prophylaxis for 6 months
- Post-op on Ecospirin 75 mg OD

RSOV



- 0.15-1.5% of cardiac surgeries correspond to SVA repair
- five times higher in Asian countries
- Male predominance (4:1), Average age- 39 yrs
- Location: Right Coronary sinus (65-86%), Noncoronary sinus (10-30%), Left sinus (2-5%)
- Rupture of a SVA- RV (60%), RA (29%), LA (6%), LV (4%) or pericardium (1%)
- Untreated ruptured SVA, Average survival - 3.9 yrs after diagnosis


Sakakibara and Konno Classification

- Type I- Right SV & existing tract of RV below pulmonary valve
- Type II- Right SV into the supraventricularis crest
- Type IIIa- Right SV & RA
- Type IIIv- Posterior zone of right SV & RV
- Type IIIa+v- Right SV & both RA and RV
- Type IV- Noncoronary SV & RA

Stand-Out Points of this case



- Relatively rare, life threatening Congenital anomaly
- Emphasis on History & Clinical examination in Atypical Presentation of congenital RSOV
- Transcatheter closure of RSOV safe and feasible
- Keep a watch on the distance of coronary artery from the defect and Aortic regurgitation due to impingement on AV
- Non Coronary sinus defects easier for device closure

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- Percutaneous closure of ruptured sinus Valsalva aneurysm (RSVA) was first attempted by Cullen et al in 1994 using a Rashkind umbrella
 - Coils in small connectios
 - Limited to case reports and case series