NIGHTMARE IN CATH LAB - TRANSCATHETER CLOSURE OF APICAL VENTRICULAR SEPTAL RUPTURE

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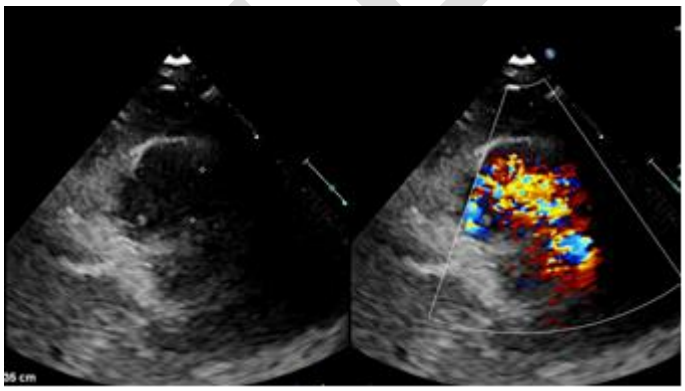
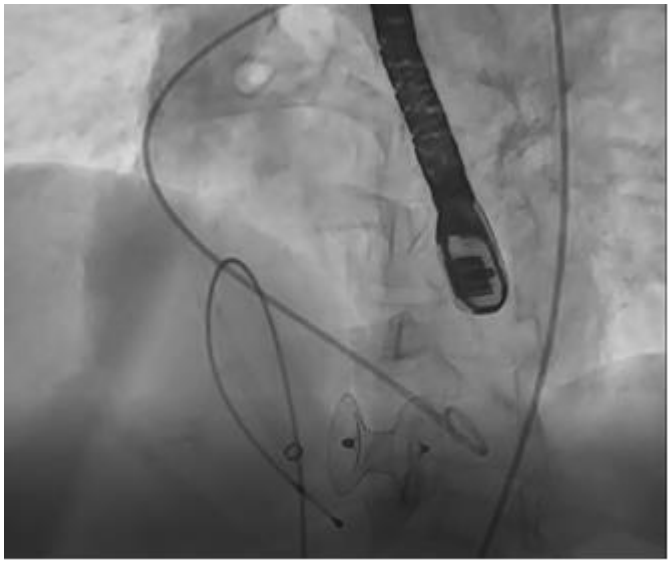
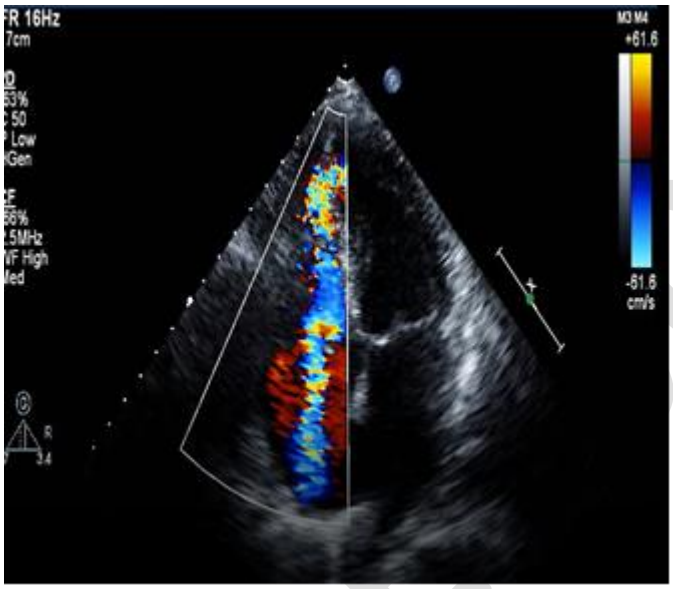
History and physical:

68-year-old female diabetic patient was referred to our center from a peripheral center with acute pulmonary edema for further management. She had presented to that center with sudden onset chest pain in less than 3 hours, was diagnosed to have STEMI. She was thrombolysed with inj Tenecteplase 50mg intravenous 3 days back after which she developed sudden onset breathlessness with hypoxia. On examination she had SBP of 90mmhg with pulse rate of 110 bpm. On cardiac auscultation she had a loud grade 4/6 pansystolic murmur at the left sternal border. She was stabilized medically. She underwent 2D transthoracic echo which showed hypokinesia of anterior wall and dyskinetic apex with apical VSR of 15mm on LV side with left to right shunt. Her LVEF was 35% and moderate pulmonary artery hypertension. She underwent coronary angiogram which showed ectatic recanalized Left anterior descending artery and right heart catheterization showed PA pressure of 48 mmhg and Qp: Qs of 3:1.

Imaging:







Indication for intervention:

Recurrent Heart failure due to post MI apical VSR with left to right shunt and Qp: Qs 3: 1

Intervention:

Following discharge from hospital, patient complained of fatiguability and breathlessness on mild exertion and developed a recurrence of cardiac failure. In view of her age and comorbidities as well as a reluctance to undergo open repair, the decision was made to perform percutaneous closure of the VSD. This was performed in delayed fashion 2 weeks after the patient's initial presentation, the rationale being that this would allow the edges of the defect to fibrose to optimise the landing zone and to let the patient stabilise from her recent hospital admissions. LV angiogram showed a moderate sized apical VSR. The VSR was crossed from

right internal jugular access snaring a 032" Terumo wire from left pulmonary artery which was crossed from LV side and 12 F Amplatzer sheath was advanced over Amplatzer super stiff wire. During this process patient developed complete heart block and asystole possibly due to the iatrogenic injury caused by the 12 F sheath as patient had pre-existing LBBB on 12 lead ECG. Immediately ACLS protocol was followed and 6F balloon tipped temporary pacing wire was placed at the RV apex and 22 mm Amplatzer VSD duct occlude was deployed and VSR sealed completely. The patients baseline rhythm recovered after 24 hours and temporary pacing wire removed and discharged on day 5 in sinus rhythm

Learning points of the procedure:

1) Delayed closure of post infarct VSR is safe and feasible but longer delay to be avoided as the mortality rate of untreated postMI VSD is very high
2) During right heart catheter manipulation temporary pacemaker is a must if patient is having pre-existing LBBB as RBB may be injured leading to complete heart block
3) Internal jugular vein access is the go to access for Transcatheter device closure of apical VSR .