When you expect doing everything right ! and the patient goes wrong

Dr.Alaa Etman, MD.
National Heart Institute
Egypt

Clinical History:

A 80-year-old Female with multiple risk factors for CAD(HTN, DM),

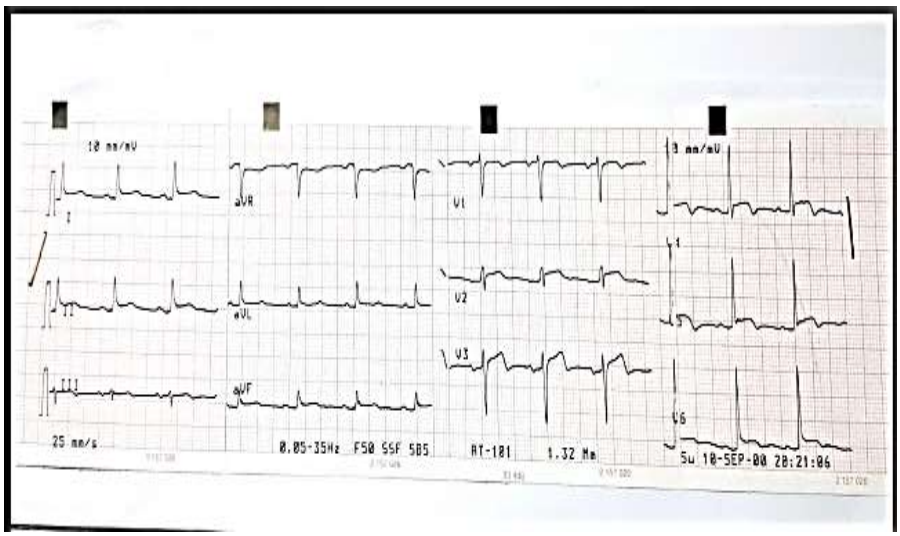
Presented on **AUG 28, 2017** with new-onset Crescendo over last two days, CCS class III angina ?! **Patient experience attacks of Dizziness and 2 attacks of presyncope?!.**

ECG: Ant.ST elevation with biphasic T wave changes with dynamic ST T waves in inferopost.leads.

Bedside Echo: Normal apart from SWMA in the form of hypokinesia matching with LAD territory,? Inferoposterior hypokinesia with diastolic impaitment and 50% EF.

Coronary Angio; revealed Multi-vessel CAD and normal LV function; Syntax score was **>32**

PCI Decision taken and for Culprit vessels and intensive treatment -(with respecting patient well of refusing CABG and her family)



On Physical Examination

ABP 155/85 mmhg
Pulse 90 Bpm regular equal on both arms
Chest ex:Harsh vesicular breathing
Normal S1 & S2
RBS 140 mg per deciliter
Hg 14.5 g per deciliter WBC 6000/ml
INR: 1.1
S.Creatinine level : 1.0 mg per deciliter
GFRc 86 ml/min/1.73m**2**
Troponin I –ve
Low Frailty Score(looking younger and serving herself and her grandsons)

Procedure Step

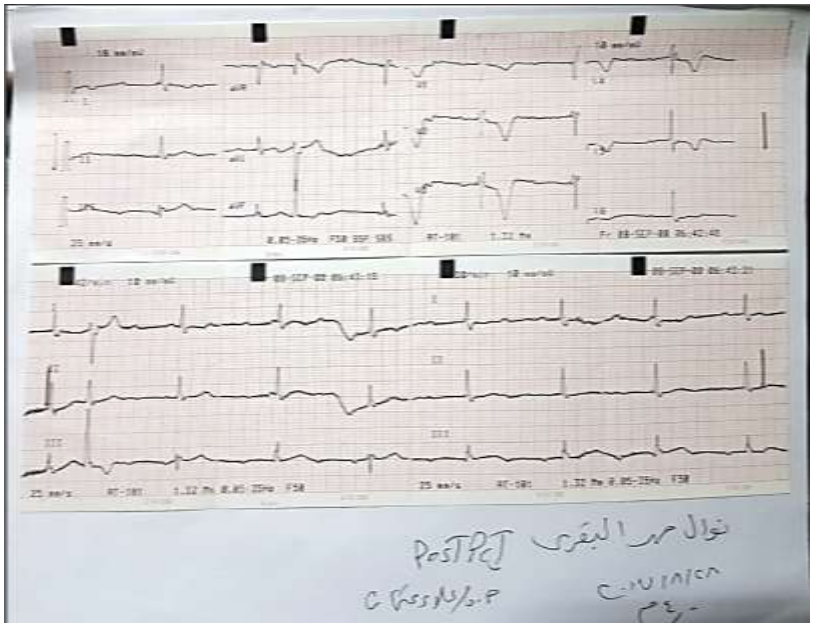
- A radial approach using a left J 3.5 ,6f guiding catheter used to cannulate left coronary artery.
- Starting with pre-dilated Subtotal cretical LAD with secured wire in D1 with succissiful Xience Xpedition(3.0x38)with prox.optemised post dilated by 3.5 NC balloon with no compromised D1 with timiIII flow.
- Then attacking LCX (Xience Xpedition (2.75x23) succissfully done.

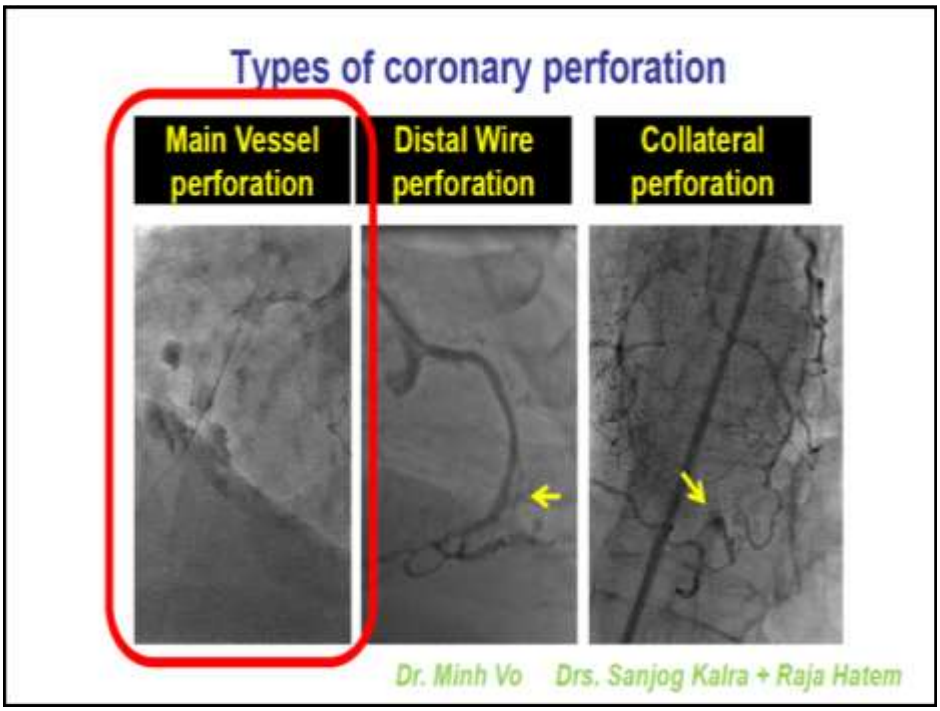
Thriller movie start to begine

- **At that moment,completely satisfied as procedure finished in minutes tackling culprit coronary artery,leaving that nasty calcific criticai lesion in distal RCA non dominant artery,with ugly calcific prox.1/3**
- **!!!!! The unexpected happened??**
- **Patient start to collaps on table and CHB experienced?!!! WHY?**
- **Told to myself;it's ok lets to start to struggle with heavy calcific RCA including change to femoral with the 2nd pox.stent and temporary pacemaker fixed,with final two stent deployement with accepted result!!?**
- **!? With under estimated localised perforation(from balloon or unintended libraly escape PDA wiring?**
- **Unfortunately,pateint start to deterirate to shock,loss conscousness,,,especially after transefered to CCU not in Cath.table**

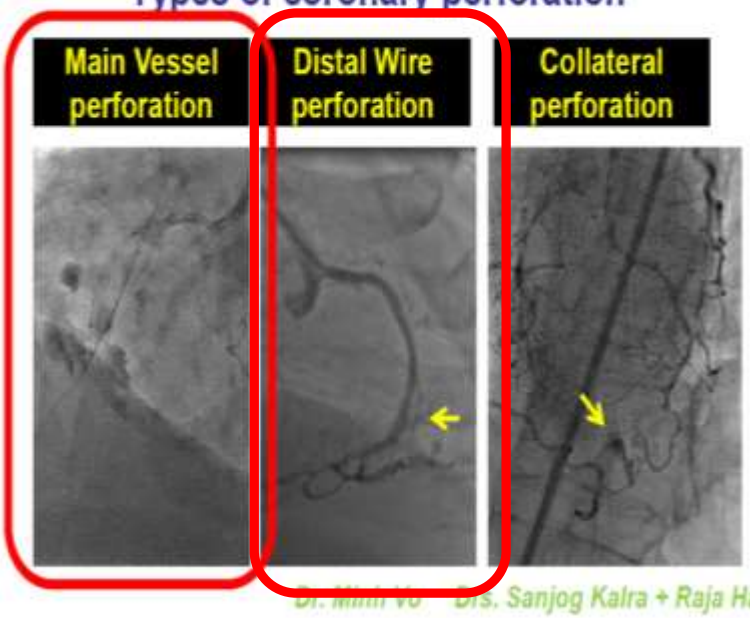
Forunatly enough bedside echo.document cardic tamponade with RV collapse,Pericardiocentecis started even before repositioning big tail under flouroscopy to proper position for adequate drainage

6 unites washed packed RBCs needed with half correction dose of protamine sulfate(found by luck in CCU stock)


Post PCI

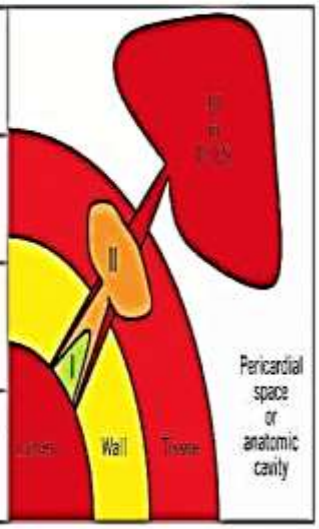

Types of coronary perforation
Main Vessel perforation
Distal Wire perforation
Collateral perforation
Dr. Minh Vo
Drs. Sanjog Kalra + Raja Hatem

Types of coronary perforation

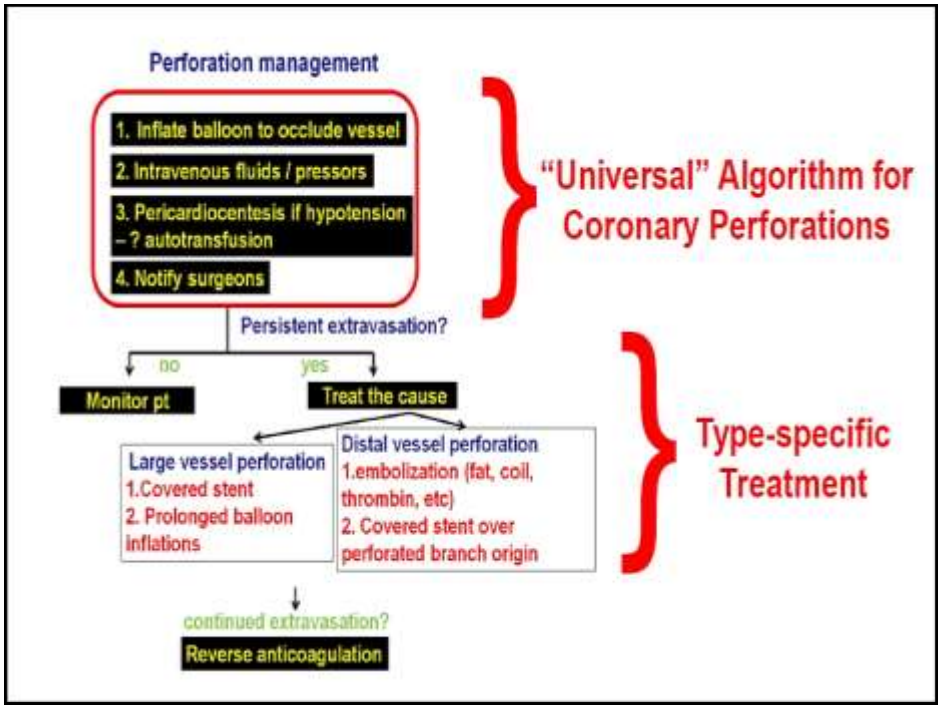


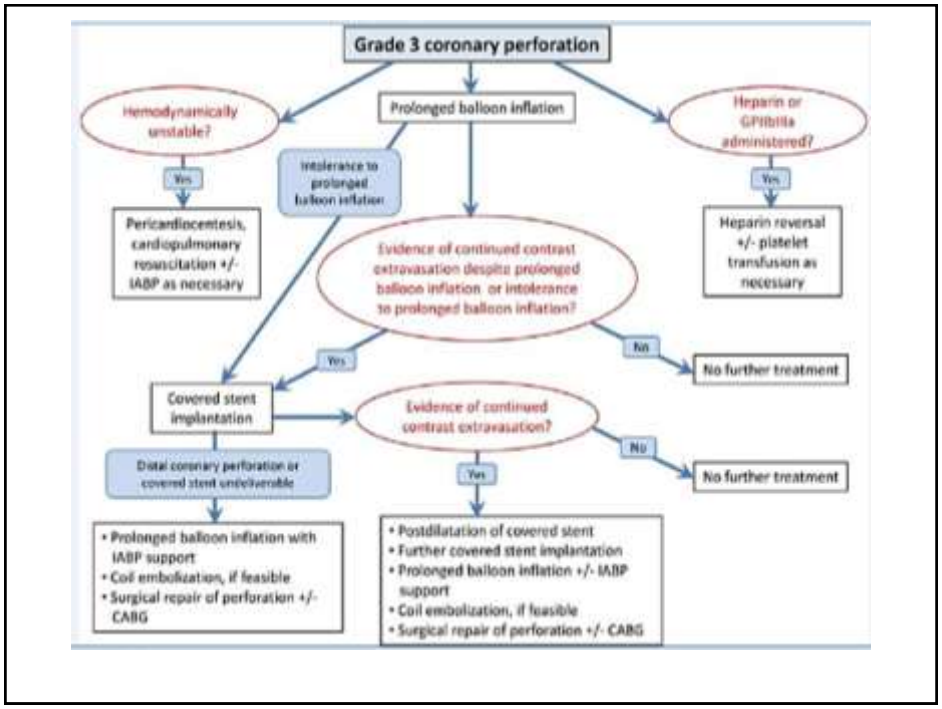
Dr. Minh Vo — Drs. Sanjog Kalra + Raja Hatem

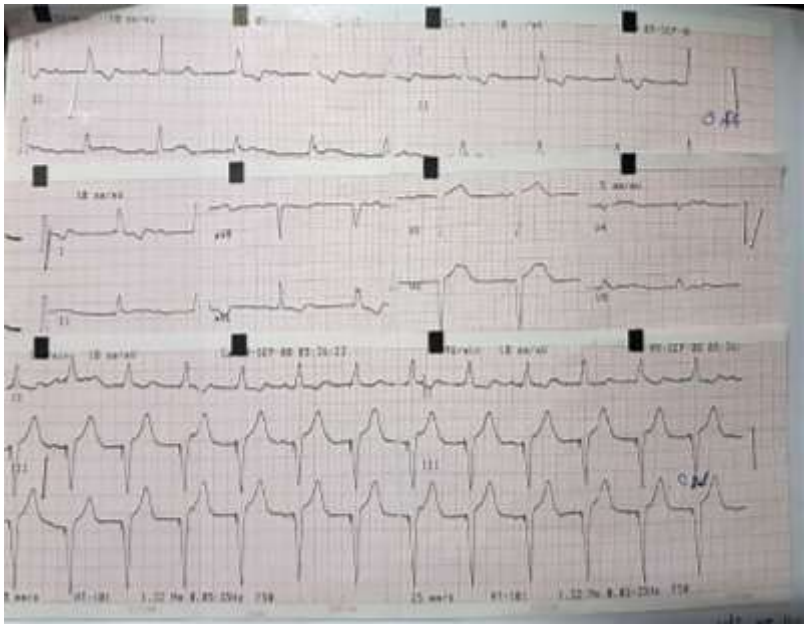
Type I	Extraluminal crater without extravasation
Type II	Pericardial or myocardial blush without contrast jet extravasation
Type III	Extravasation through frank (>1 mm) perforation
*Type III cavity spilling (CS)	Perforation into an anatomic cavity, chamber, coronary sinus, etc.

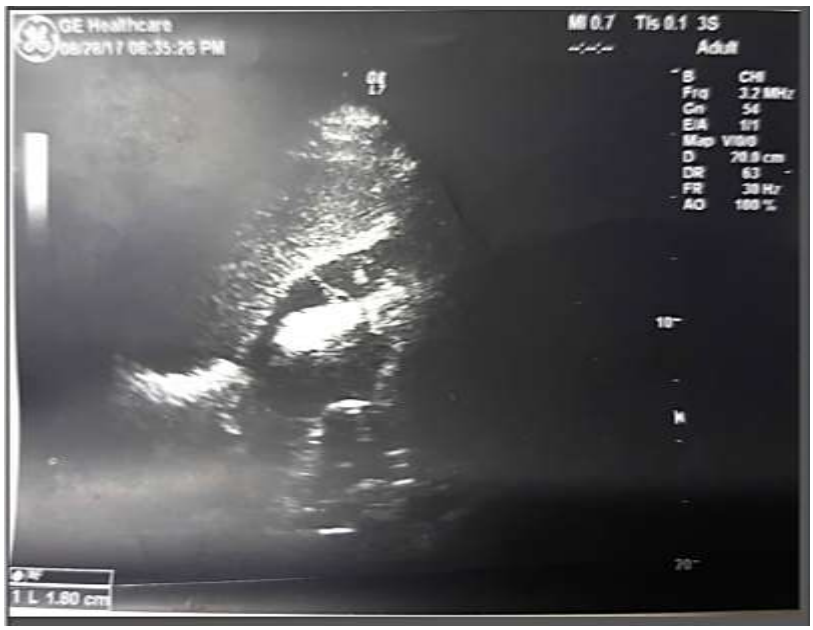


*Sometimes referred to as Type IV


Perforation management
1. Inflate balloon to occlude vessel
2. Intravenous fluids / pressors
3. Pericardiocentesis if hypotension – ? autotransfusion
4. Notify surgeons
"Universal" Algorithm for Coronary Perforations
Persistent extravasation?
no
yes
Monitor pt
Treat the cause
Large vessel perforation
1.Covered stent
2. Prolonged balloon inflations
Distal vessel perforation
1.embolization (fat, coil, thrombin, etc)
2. Covered stent over perforated branch origin
Type-specific Treatment
continued extravasation?
Reverse anticoagulation


Grade 3 coronary perforation
Hemodynamically unstable?
Prolonged balloon inflation
Heparin or GPIIbIIIa administered?
Yes
Intolerance to prolonged balloon inflation
Pericardiocentesis, cardiopulmonary resuscitation +/- IABP as necessary
Heparin reversal +/- platelet transfusion as necessary
Evidence of continued contrast extravasation despite prolonged balloon inflation or intolerance to prolonged balloon inflation?
No
No further treatment
Covered stent implantation
Evidence of continued contrast extravasation?
Distal coronary perforation or covered stent undeliverable
No further treatment
• Prolonged balloon inflation with IABP support
• Coil embolization, if feasible
• Surgical repair of perforation +/- CABG
• Postdilatation of covered stent
• Further covered stent implantation
• Prolonged balloon inflation +/- IABP support
• Coil embolization, if feasible
• Surgical repair of perforation +/- CABG

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Adult
B CHI
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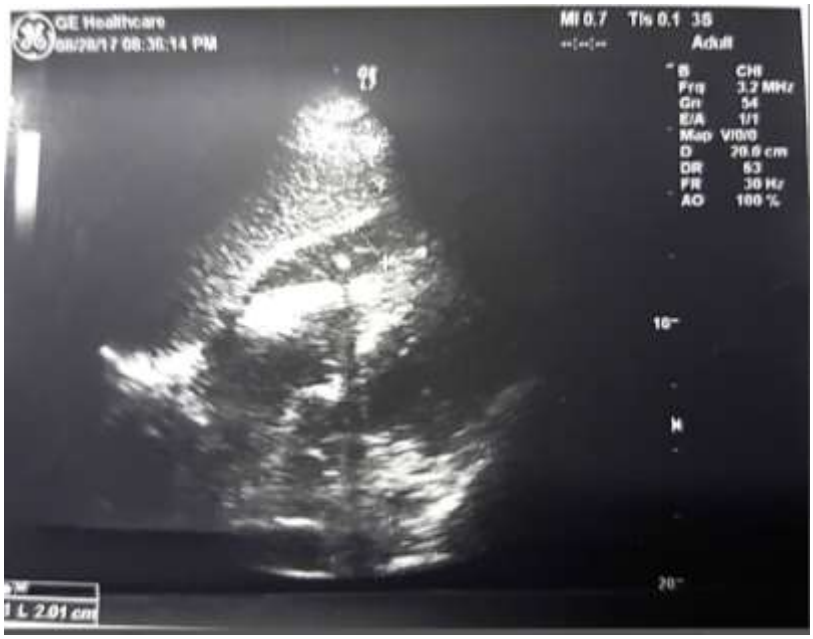
Gn 54
EIA 1/1
Map V1B/B
D 20.8 cm
DR 63
FR 38 Hz
AO 100 %
1 L 1.80 cm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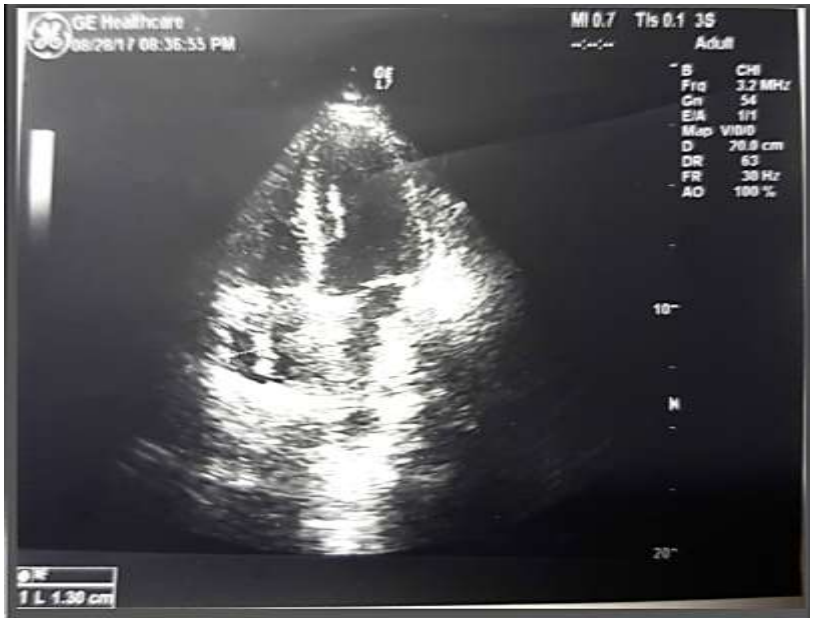
AO 100 %
16
M
20
L 2.01 cm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B CHI
Frq 3.2 MHz
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E/A 1/1
Map V10/0
D 20.0 cm
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FR 30 Hz
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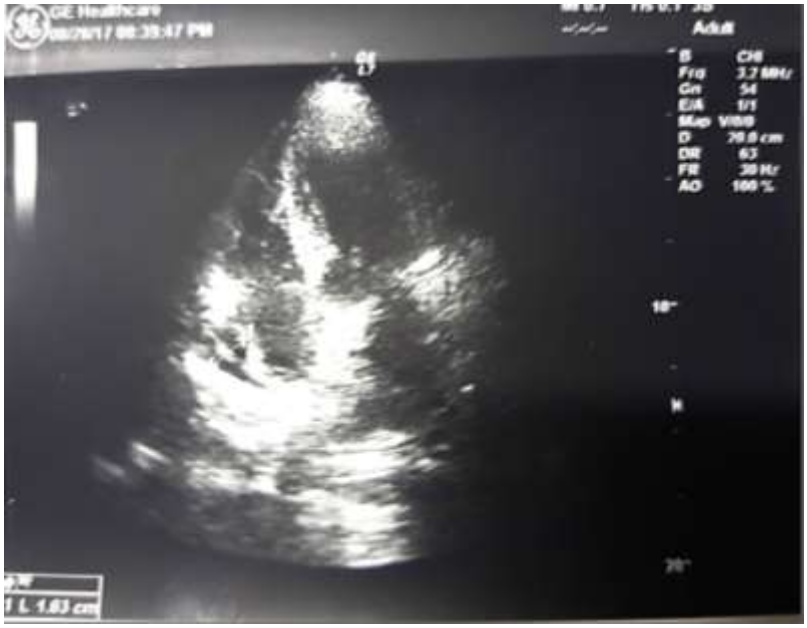
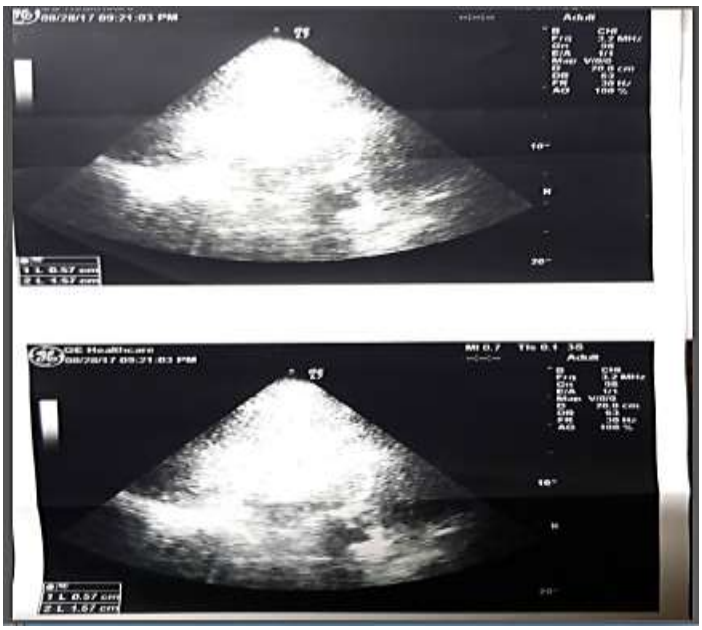
M
20
1 L 1.30 cm





Name : NAWAL M

Date : 02/10/2017

Five weeks later

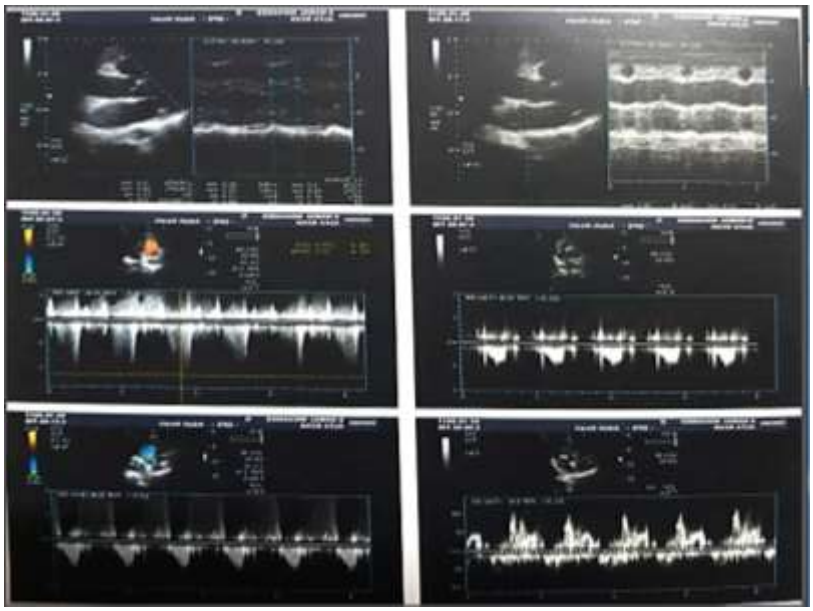
Transthoracic Echocardiography

LVED	4.6	(3.5 – 5.7 cm)	Ao	3.3	(1.9 – 3.7 cm)
LVES	2.6	(2.2 – 4.0 cm)	LA	3.8	(2.0 – 4.0 cm)
SWT	0.9	(0.7 – 1.1 cm)	RV	2.2	(1.6 – 2.6 cm)
PWT	0.9	(0.7 – 1.1 cm)	MVA		(2.0 – 4.0 cm²)
FS	44%	(25 – 45 %)	EF	76%	

Comment:

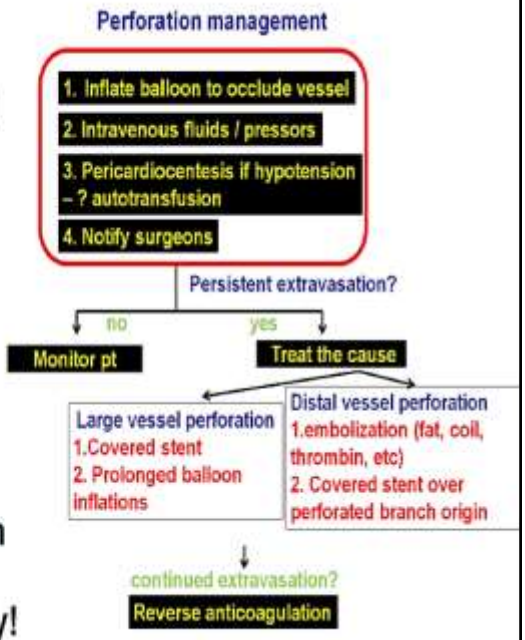
- Normal left ventricular internal dimensions with normal overall systolic function.
- Type I antegrade diastolic mitral flow denoting impaired LV relaxation.
- SWMAs: not detected at rest.
- Normal left atrium. Normal aortic root dimensions.
- Sclerotic aortic valve without significant gradient across. mild aortic regurge.
- Normal other valvular aspect, structure and functions.
- Mild tricuspid regurge. Estimated PASP=20+CVP. No indirect signs suggestive of pulmonary hypertension with normal right sided chambers dimensions and contractility.
- No intracardiac masses or thrombi.
- Normal pericardium.

THANKS GOD; **With completely normal ECG ,and Doing whatever she used to do before,never touched again!**



Lessons

1. Perforation: Universal algorithm
2. Know your covered stents
3. Prolonged balloon inflations
4. Do not reverse heparin
5. Prior CABG: treat early!



Thank You