CATHETER DIRECTED THROMBOLYSIS FOLLOWED BY PTA OF SUPERIOR VENA CAVA IN A PATIENT WITH SEVERE SVC SYNDROME 3 YEARS POST PPM

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Disclosure

Speaker name:

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I have the following potential conflicts of interest to report:

- ☐ Consulting
- ☐ Employment in industry
- ☐ Stockholder of a healthcare company
- ☐ Owner of a healthcare company
- ☐ Other(s)

- ☒ I do not have any potential conflict of interest

80 years old male hypertensive.

Permanent pacemaker implanted 3 years back.

Presented with:

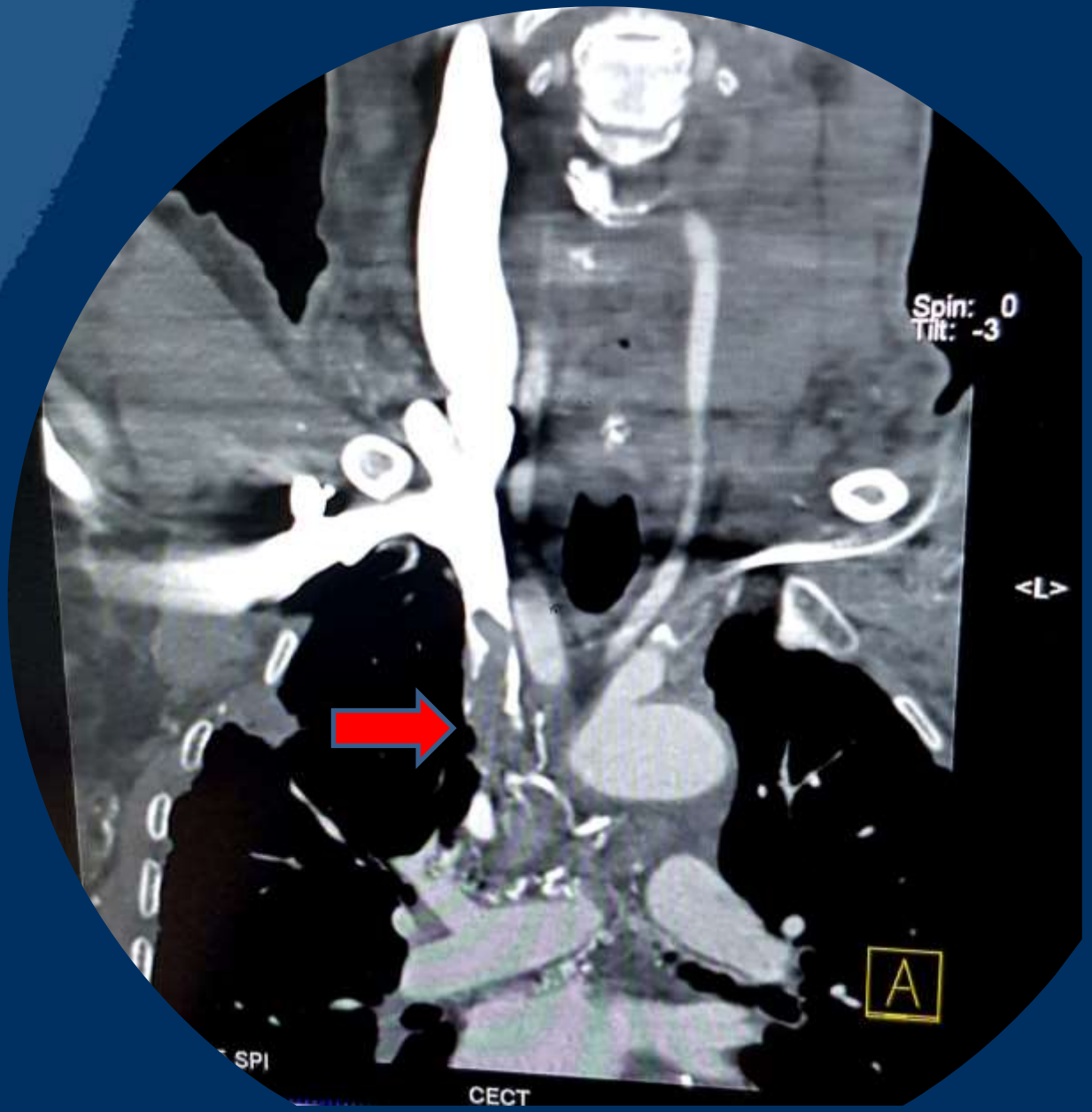
History of progressive swelling of face, neck, arms and recurrent pre syncope for two months.

Clinical impression was severe SVC syndrome.

There were no chest symptoms and X Ray chest was unremarkable for a mediastinal or lung mass.

CECT chest showed complete occlusion of SVC with a large intraluminal thrombus.

CT angio showing SVC occlusion with large intraluminal thrombus.

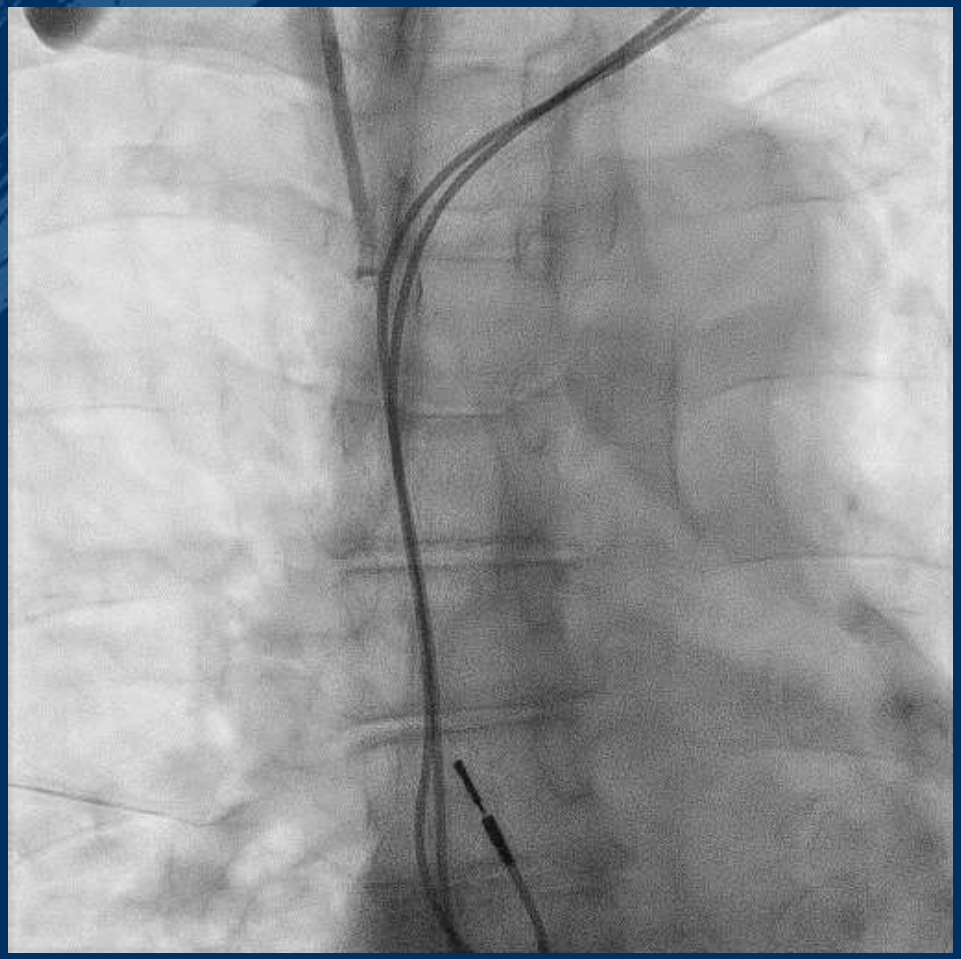


PERPLEXED

- This was my first encounter with SVC syndrome in a post pacemaker patient and honestly did not know what exactly to do.
- The condition is rare and literature is so varied about management of this condition.

- Decided to do a conventional angio through right internal jugular vein.

CONTRAST ANGIO THROUGH RT IJV SHOWING COMPLETE OCCLUSION OF SVC



ISSUES

Unknown duration of thrombus.

Large thrombus → Pulmonary embolism.

Pacemaker dependant patient.

STRATEGY

Catheter directed thrombolysis followed by assessment of the residual thrombus and underlying stenosis.

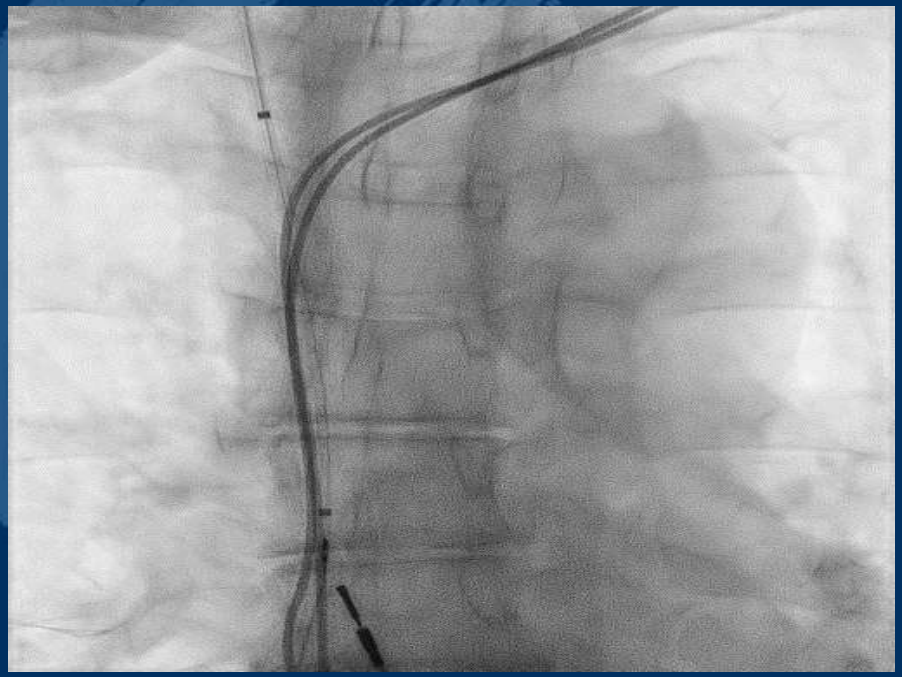
followed by

Balloon dilatation of the underlying stenosis with high pressure non compliant (conquest) balloons.

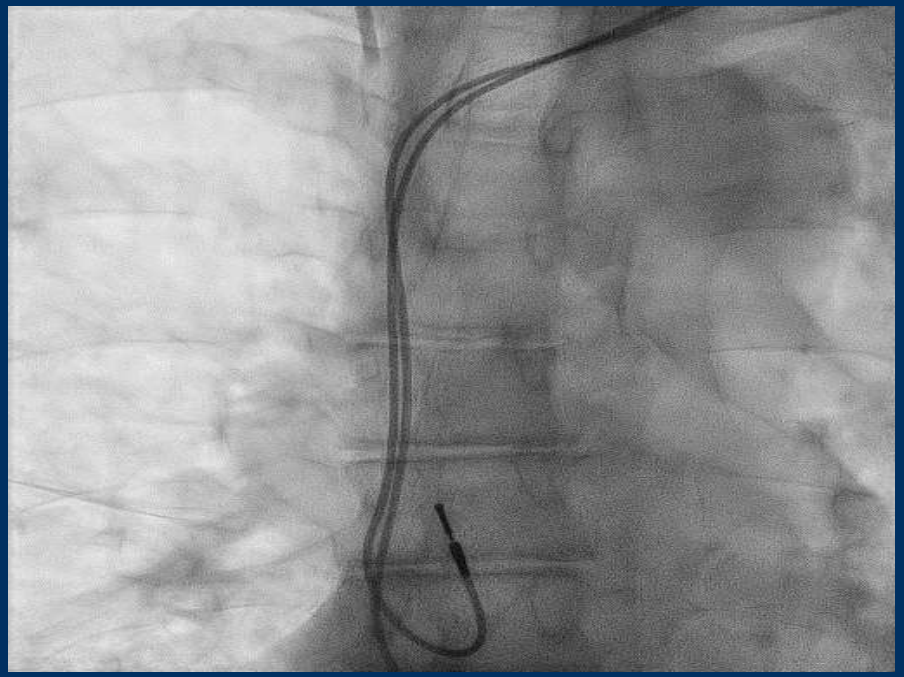
PROCEDURE

- Route → Right internal jugular vein.
- Lesion crossed with an 0.35 terumo wire easily.
- A 5f 7cm Long multi side hole catheter (cook) was passed over the wire and placed across the lesion.
- Tenectaplase infusion at the rate of 0.25mg/hour was given for 24 hours.

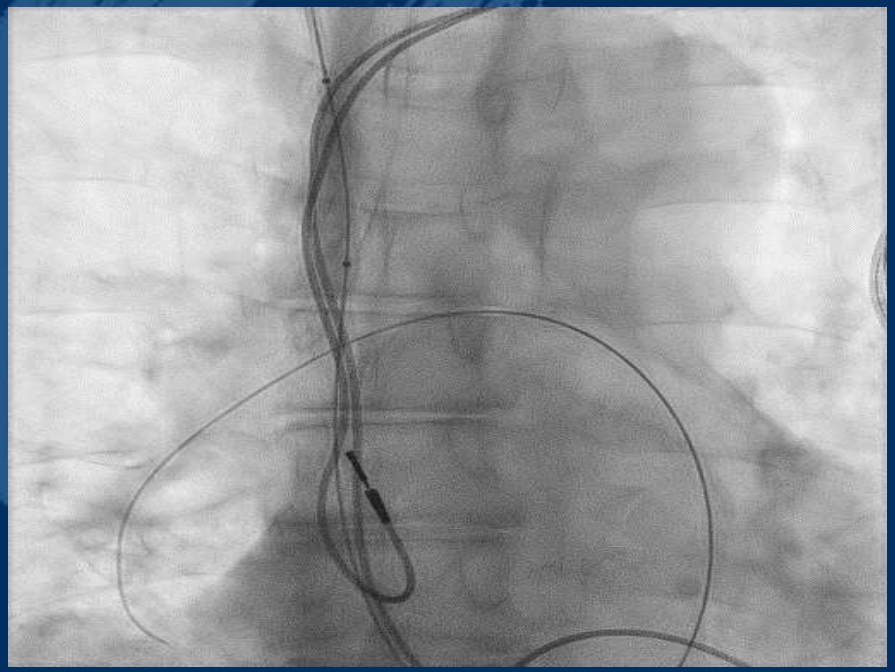
CDT WITH TNK FOR 24 HOURS

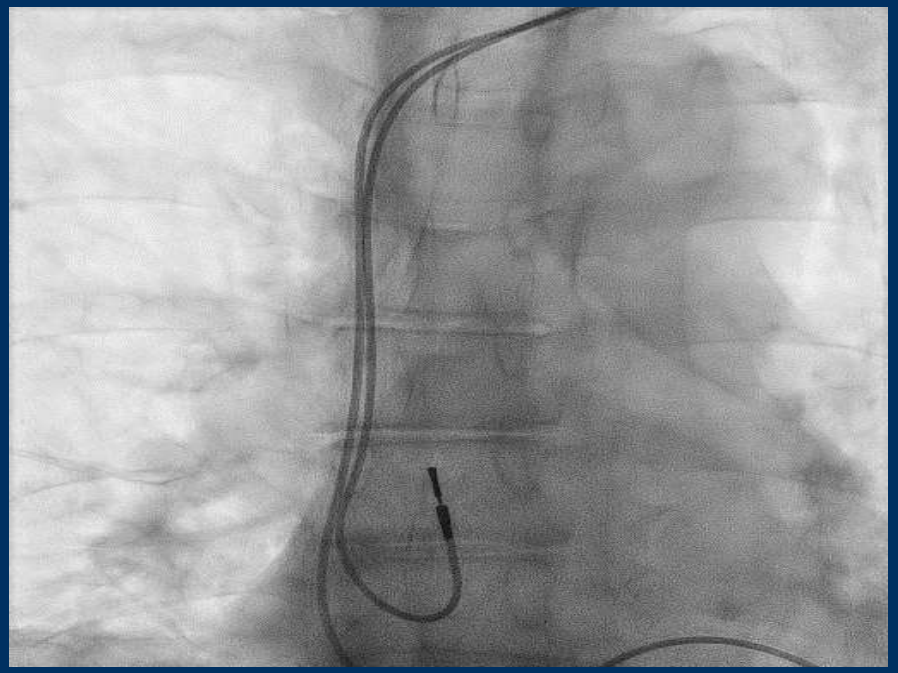


POST 24 HOUR TNK IFUSION

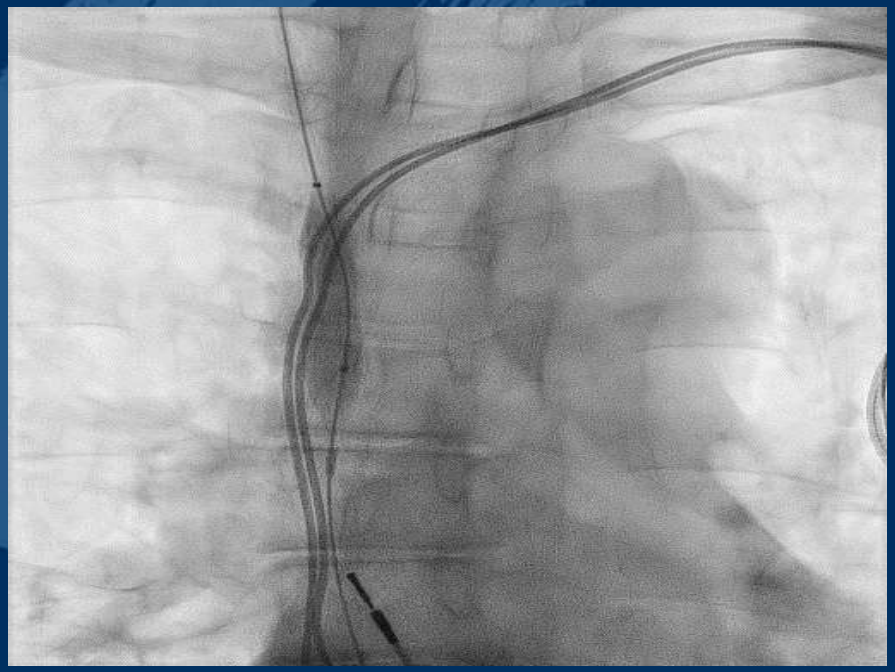


FIRST DILATATION BY 8mm X 4cm (conquest BALLOON by BARD) AT 30 atm

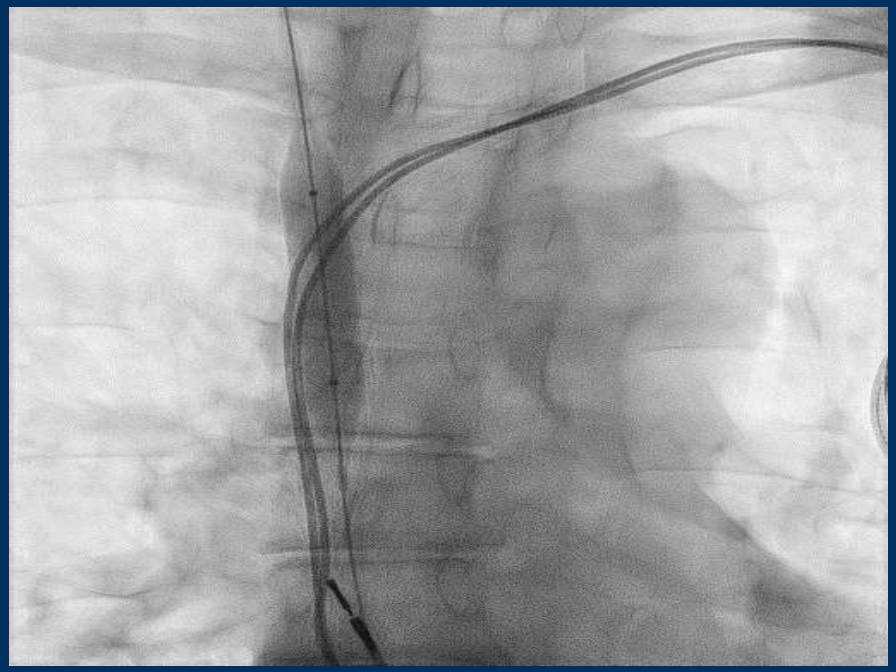




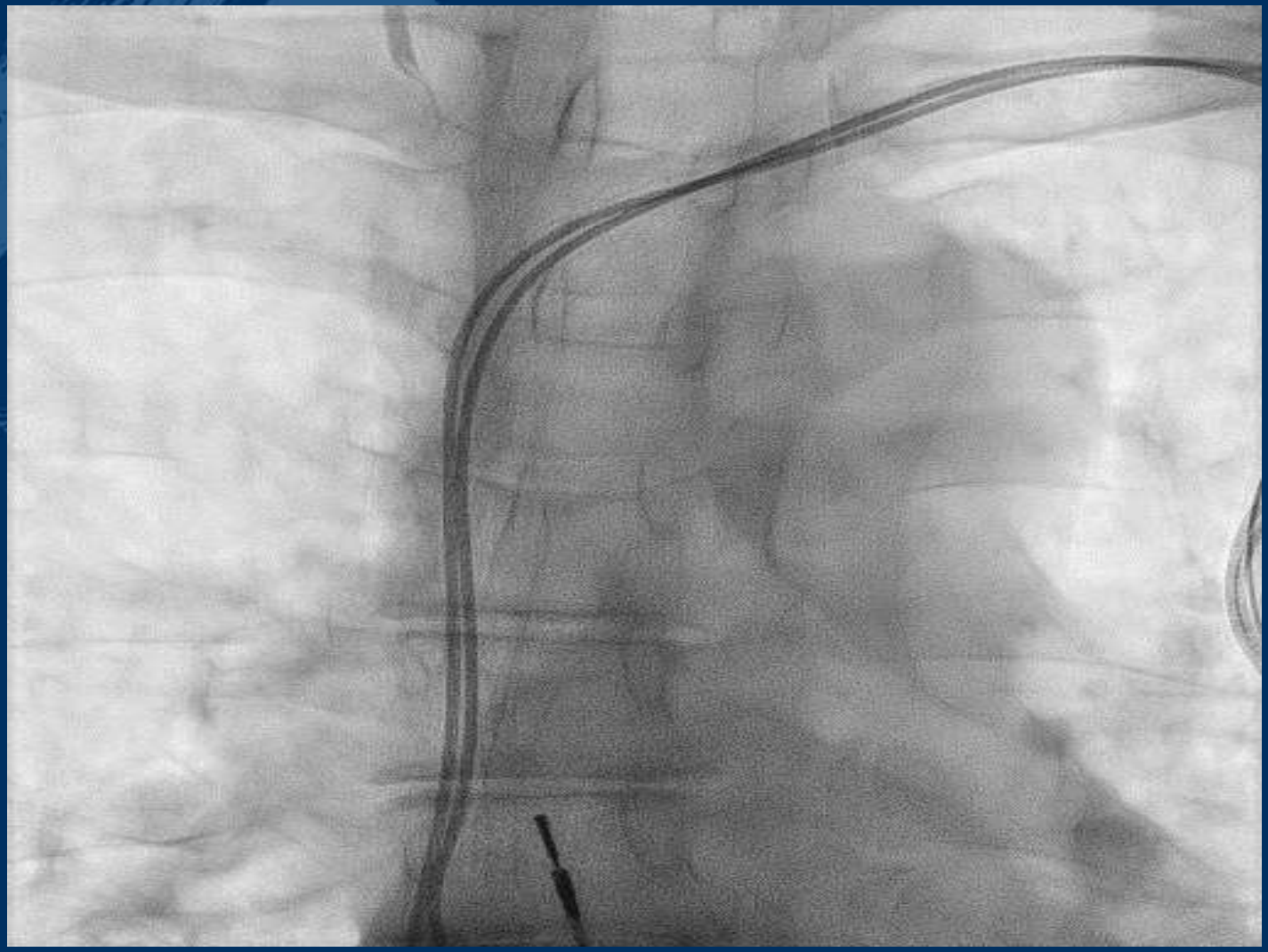
10mm X 4cm AT (40 ATM)



12mm X 4cm AT (40 ATM)



FINAL RESULT



The symptom of SVC syndrome began to improve soon after the angioplasty and in a couple of days his face, neck and arms returned to normal.

He continues to be free of symptoms for 18 months after the procedure.

He is on Rivaroxaban 20mg daily.

- Pacemaker induced severe SVC syndrome is a rare entity with an incidence about 1 in 1000 to 1 in 40,000 .
- The pathogenesis is endothelial disruption caused by repeated trauma from the leads and usually occurs above the right atrium.
- Deposition of fibrin on the surface of the leads results in vessel wall inflammation, fibrosis, thrombus formation and eventually to venous stenosis and occlusion.
- SVC syndrome varies from mild to severe depending upon the severity of stenosis and amount of collateralisation.

PROPOSED PREDISPOSING FACTOR'S ARE ;

- LEAD INFECTION.
- MULTIPLE LEADS.
- INDIVUDUAL REACTION TO ENDITHELIAL IRRITATION.
- HISTORY OF VENOUS THROMBOSIS.
- PRESENCE OF TEMPORARY WIRE THROUGH IJV/SCV BEFORE IMPLANTATION.
- USE OF HORMONE THERAPY.

MESSAGE

- SVC Stenosis (lead induced) is best treated by high pressure balloon angioplasty with excellent medium term results. Balloon angioplasty is simple, inexpensive and does not hamper lead integrity.

- Restenosis may occur (rarely) and be severe enough to require a repeat ballooning preferably by a drug coated balloon (lutinox).

- Superimposed thrombus formation if present, can be pre-treated by catheter directed thrombolysis.

Stent implantation should be done only if balloon angioplasty fails because;

- It is cumbersome, expansive and may hamper lead integrity and thereby require implantation of fresh system.

- In addition the leads get jailed and render lead extraction impossible, if required in future.

THANKYOU