Marathwada Medical & Research Institute
Kamalnayan Bajaj Hospital
The Complete Hospital
(NABH ACCREDITED HOSPITAL)

CARDIOLOGY CHRONICLES

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A RARE CASE OF ORTHOPNEA MIMIC

A 69 y male was referred for CABGS. He presented with marked breathlessness, "suffocation" and headache in supine position since a few months. His symptoms were progressive and of late he was sleeping in sitting position at night. His physical activity was limited due to fatigue. ECG, chest X-ray and echo were unremarkable. LVEF was 0.6. His coronary angiography was performed at an outside hospital and it revealed presence of three vessels disease. Our cardiac surgeon noticed that his degree of orthopnea was difficult to explain based on his reports and there were extensive coronary-venous collaterals on his coronary angiogram (Video 1). Hence he was referred to us. His physical examination was unremarkable with normal vital parameters and SPO2 of 96% on room air. HRCT of chest was normal. A pulmonary CT angiogram revealed presence of a critical stenosis of superior vena cava (SVC) with extensive venous collaterals (Fig 3,4 arrows). The stenosis measured 18 mm in length with good landing zones at both ends. The size of SVC below and above the stenosis was 16 mm. There was evidence of fibrosis around the stenotic part of SVC (Fig 1,2 arrows). There was no evidence of pulmonary thromboembolism. *Right heart catheterisation was performed and the findings were as follows *

1. SVCgram done from right femoral vein: It revealed significant SVC stenosis with extensive collaterals (Fig 5, Video 2)

2. RA, RV and pulmonary artery pressures were normal

3. Peripheral venogram from the left arm revealed direct filling of left pulmonary artery from veno-venous collaterals and absence of forward flow into SVC (Fig 6)

4. Peripheral venogram from right arm revealed filling of SVC from collaterals (Fig 7)His SVC was stented with a 16 mm x 60 mm Optimed Sinus XL self expanding stent followed by dilatation by a 16 mm balloon (Tyshak) (Video 3, Fig 8). The result was dramatic with immediate disappearance of collaterals (Video 4). There was marked symptomatic improvement with disappearance of orthopnea over next 4-5 days.

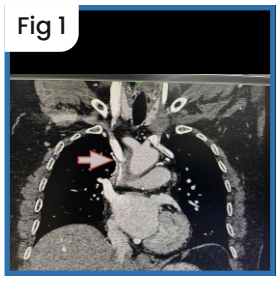


Fig 1


Fig 2

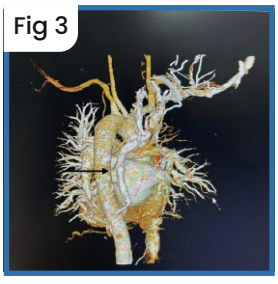


Fig 3

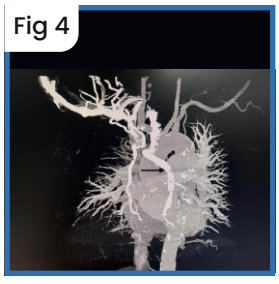


Fig 4

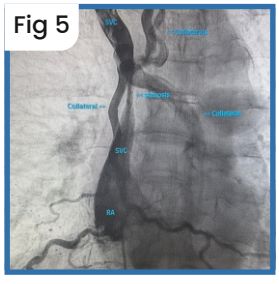


Fig 5

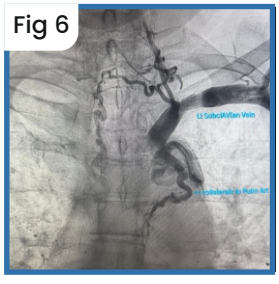


Fig 6


Fig 7

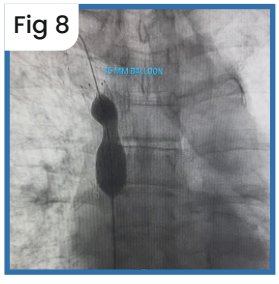


Fig 8

This case had the following unusual features

1. Accidental detection while looking for cause of orthopnea and reasons for extensive coronary-venous collaterals.

2. Complete absence of typical features of SVC obstruction viz facial and arm swelling, prominent collaterals on chest wall, fullness of neck veins etc. This was possibly secondary to decompression due to large multiple intrathoracic collaterals.

3. No history of any central venous catheterisation or cannulation in the past.

Etiology

SVC obstruction could be because of

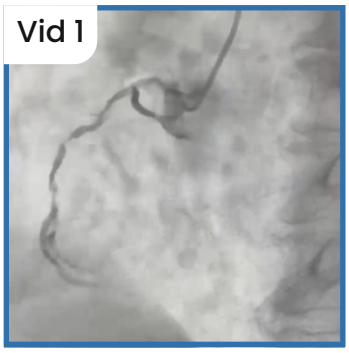
1. Malignant causes (most common overall): Lung cancer, Lymphoma
2. Benign (non-malignant) causes (increasing in modern practice)
    - After central venous Catheterisation
    - SVC thrombosis
    - Fibrosing mediastenitis
    - Post radiation
    - Post infection (TB, Fungal)
    - Congenital (webs, stenosis)

Given evidence of some fibrosis around the stenotic segment of SVC on CT, **mediastinal fibrosis **remains a possible etiology in this case.

Mechanism of Orthopnea

In SVC obstruction, venous return from the head, neck, and upper chest is impaired. When the patient lies down, gravity no longer helps venous drainage. Venous pressure in the upper body rises further leading to facial/neck swelling, laryngeal edema, and airway narrowing. This can produce symptoms suggestive of orthopnea.

Vid 1



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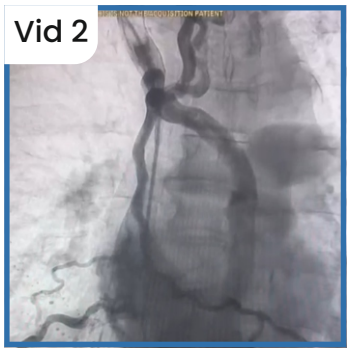

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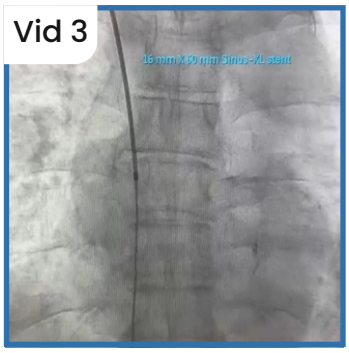

Vid 4