

Case Report

A Common Complication in an Uncommon Circumstance

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Mitral Valve Stenosis is a prevalent healthcare problem in developing countries and affects the young population. Severe Mitral Stenosis which is calcific or with associated mitral regurgitation requires a mitral valve replacement. A Stuck mitral valve is a complication after the mitral valve replacement due to sub-therapeutic anti-coagulation. We present a case of a Stuck mitral valve with Ortner's Syndrome, resolved by managing the causative etiology. To conclude, maintaining adequate anti-coagulation levels after the postvalve replacement is of paramount importance and a Stuck valve is a dreadful complication that needs to be addressed immediately. [J Indian Med Assoc 2023; 121(7): 68-9]

Key words : Ortner's syndrome, Stuck mitral valve, Pulmonary artery dilatation, Hoarseness.

Ortner's Syndrome also known as a Cardio-vocal Syndrome, was first described in 1897 by Norbert Ortner,¹ is a clinical condition with hoarseness of voice attributable to left recurrent Laryngeal Nerve Palsy¹. In the latter phase of the Mitral Valve Replacement Surgery, a Stuck Mitral Valve is a common complication². In Mitral Stenosis, Ortner's Syndrome usually occurs due to enlargement of the left atrium causing compression on the recurrent Laryngeal Nerve^{3,4}. We report this as a case of a Stuck mitral valve with Ortner's Syndrome.

CASE REPORT

A 48-year-old lady, s/p mitral valve replacement (mechanical valve) 7 years ago on anticoagulant and diuretics presented to the Emergency Room with complaints of breathing difficulty for one week.

On a primary survey, she had an increased work of breathing, tachypnea with bilateral crepitation plus tachycardia of 125/min and Blood Pressure of 160/80 mmHg. Her GCS was 15/15 with a Random Blood Sugar of 135 mg/dl.

She was started on non-invasive ventilation with FiO₂ 50%. Furosemide bolus followed by an infusion dose was started. Electrocardiography showed the left bundle branch block. A screening bedside Echocardiography revealed a decreased mitral valve movement suggestive of a stuck mitral valve with the increased diastolic mitral gradient of 30mmhg (peak) and bilateral diffuse B profile suggestive of Acute pulmonary edema.

An expert opinion from the Cardiology team was sought and the patient was initiated on Thrombolysis with streptokinase after obtaining necessary consent (2.5 lakh unit bolus followed by 1 lakh unit per hour infusion for 24 hours). Furthermore, a bedside Chest X-ray showed an upper lobe consolidation for which intravenous antibiotics were given. The patient was

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- From the heart to the voice, unexpected links remind us to listen closely and consider the broader impact of cardiovascular conditions.

admitted to the emergency intensive care unit. She was weaned off non-invasive ventilation.

On day two, an echo-cardiogram showed a movement of the mitral valve with a gradient of 8 mm Hg (peak) and a freely mobile thrombus of 8x5 mm attached to the valve was noted. The patient was noted to have hoarseness of voice, when questioned retrospectively she said that it is a long-standing problem. A video laryngoscopy done by an Otolaryngologist revealed a left uncompensated vocal cord palsy. Computed Tomography of the Neck and Thorax revealed uncompensated left vocal cord palsy and cardiomegaly with dilated pulmonary artery, the size being 3.09cm (normal range 2.7cm in females). However, the size of the right and left atriums was within normal limits.

The diagnosis of Ortner's Syndrome was established, voice rehabilitation and speech therapy were initiated. Meanwhile, anticoagulant was continued and coagulation parameters were monitored. Target international normalized ratio was maintained. On day eight, the patient was discharged with advice to continue anticoagulant and speech therapy. On review after a month, the hoarseness of voice was completely resolved (Figs 1-4).

DISCUSSION

The complication of Prosthetic Valve Replacement is endocarditis, Thrombosis and Heart Failure. Thrombosis can occur at any phase of the postvalve Replacement Surgery. Trans-thoracic echocardiography, trans-esophageal Echocardiography, cine-fluoroscopy, or cardiac Computed Tomography should be done to confirm the diagnosis². Echocardiographic signs of obstructive Prosthetic Valve Thrombosis are reduced valve mobility, presence of thrombus, abnormal trans-prosthetic flow, central prosthetic regurgitation, elevated trans-prosthetic gradients and a reduced effective prosthetic area⁵. An emergency valve replacement is recommended for obstructive prosthetic valve thrombosis in critically ill patients without a contraindication to surgery. Management of non-obstructive thrombosis depends



Fig 1 — Pre-lysis TTE Showing Stuck Mitral Valve



Fig 2 — Post-lysis TTE Showing Mobile Thrombus on the Valve



Fig 3 — Left Vocal Cord Palsy with Right Vocal Cord Abducted



Fig 4 — CT Thorax Showing Pulmonary Artery Dilatation

mainly on the occurrence of a thromboembolic event and the size of the thrombus. Surgery should be considered for a large (>10 mm) non-obstructive prosthetic valve thrombus that is complicated by embolism or persists despite optimal anticoagulation².

A prospective observational study done by Bade, *et al* among 34 hemodynamically unstable patients with a bileaflet stuck mitral valve has concluded that Thrombolysis with streptokinase was safe and successful with low mortality⁶.

Hoarseness results from a wide range of causes, one is Vocal Cord Palsy. Neurologic causes of Laryngeal Paralysis can be supranuclear, nuclear, high vagal lesions, and low vagal or recurrent laryngeal lesions. Carcinoma cervical esophagus, Carcinoma Thoracic Esophagus, Aortic Aneurysm, Thyroid Surgery, Thyroid Cancers, Mediastinal Lymphadenopathy, Intrathoracic Surgery and Idiopathic are the causes of a low vagal or recurrent laryngeal nerve lesion⁸.

Literature have got a few case series in which Vocal Cord Paralysis was the initial presentation of life-threatening Cardiovascular Disorders^{9,10}. The diagnosis of Ortner's syndrome requires an indirect Laryngoscopy and Computed Tomography or Magnetic Resonance

imaging of the Neck and Thorax for confirmation and an etiological search. Expecting the spontaneous recovery of vocal cord mobility is the treatment of choice if there is no transection of the cord. However in Ortner's syndrome, complete resolution occurs if the primary causative etiology is treated^{11,12}.

CONCLUSION

A Stuck mitral valve is a rare complication of postmitral valve replacement and Ortner's syndrome initially diagnosed in the background of the same is even rarer. Hoarseness occurs both due to life-threatening and non-life-threatening etiologies. In the presence of underlying Cardiovascular Disease, the search for the etiology is not complicated. The importance of therapy for vocal cord palsy should be educated to the patient to prevent aspiration and the proper guidance should be given regarding strict compliance to anticoagulation therapy.

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