

A Rare Presentation of the Most Rare Entity

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Abstract: We report a case of a 24-year-old male who presented with tropical eosinophilia with a pedunculated left ventricular mass, which on excision was diagnosed to be invasive aspergillosis. There were no predisposing conditions or an underlying cardiac disease that could have resulted in the cardiac mural infection. Post cardiac surgery the patient had a good recovery with normalisation of eosinophil count. **Aim:** The aim of presenting this paper was that, this would be the index case of invasive cardiac aspergillosis presenting as a mass lesion in an immune competent host.

Keywords: Aspergilloma, Aspergillosis, Tropical Eosinophilia

1. Introduction

Cardiac fungal infections, although rare, are being seen more often because of the rise in placement of central venous lines and indwelling catheters, implantation of prosthetic heart valves, organ transplants and the use of anti-neoplastic agents and antibiotics, among other reasons but it is still very rare in the absence of other predisposing conditions.^{1,2,3,4} We describe a rare case of a pedunculated left ventricular mass straddling the aortic valve which on excision was confirmed to be invasive aspergillosis.⁵

2. Case Report

A 24 year old male was admitted with a history of intermittent high grade fever of 2 months duration. Clinically, he had stable hemodynamics, and the systemic examination was unremarkable with a total leukocyte count of 4100 with a eosinophil count of 32%, chest X-Ray showing a non homogenous opacity right upper zone with right hilar opacity (Fig 1). CECT chest was suggestive of homogenous opacity right upper lobe (Fig 2) and the sputum examination was smear negative for acid fast bacilli. He was empirically started on ATT (anti tubercular treatment) with effect 04 March 2015



Figure 1

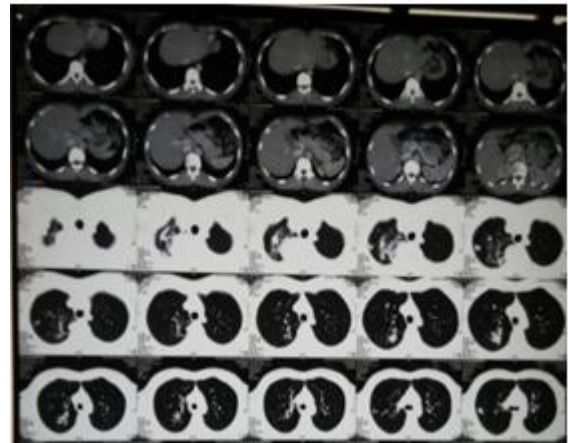


Figure 2

Bone Marrow aspirate showed eosinophilia, Bone Marrow biopsy was suggestive of normal cellular marrow, BAL (broncho alveolar lavage) showed acellular smear with no eosinophils, TBLB (trans bronchial lung biopsy) showed presence of necrotic tissue with focally intense inflammatory infiltrate comprised of lymphocytes and occasional eosinophils, Blood cultures were negative, 2D Echo revealed large mass causing LVOTO (3.4 sq cm, mass attached to AML by a small stem, protruding into the LVOT and Aorta) (Fig 3) with gradients across LVOT being . Cardiac MRI showed a focal lesion in the LVOT straddling the aortic valve favouring a mass lesion with a thrombus being less likely (Fig 4). FIP1L1-PDGFR Gene rearrangement was not detected (ruled out chronic eosinophilic leukemia). HIV test was negative.

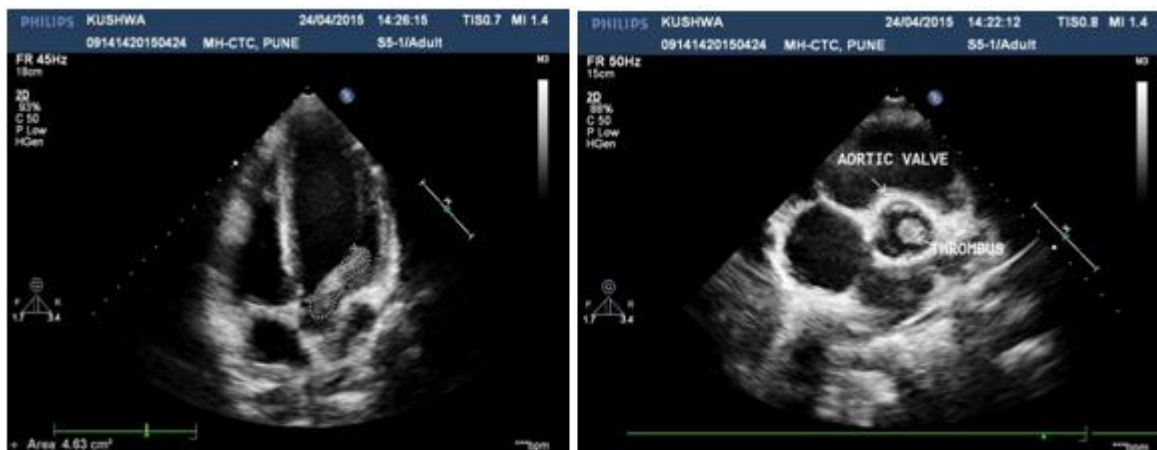


Figure 3

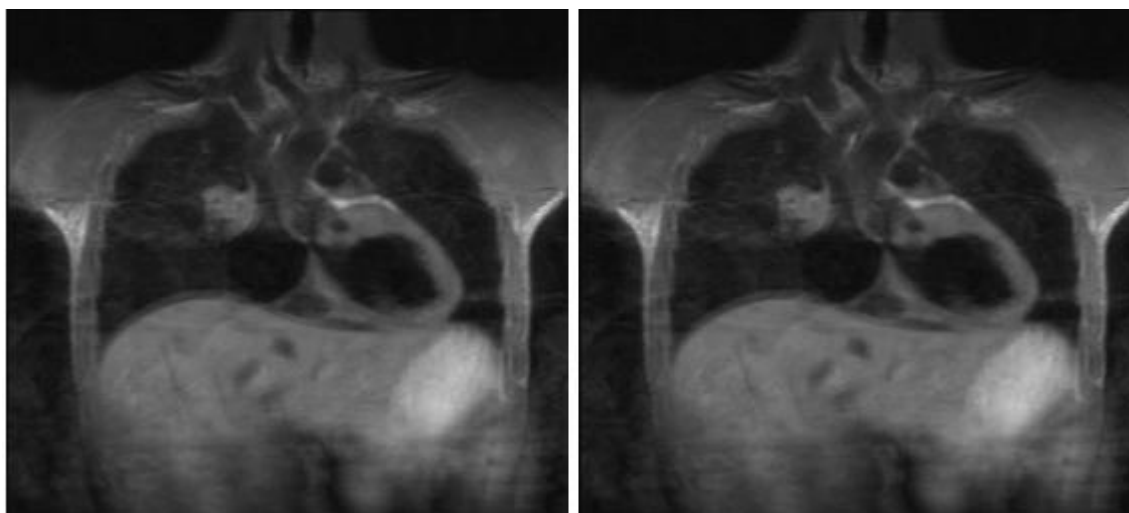
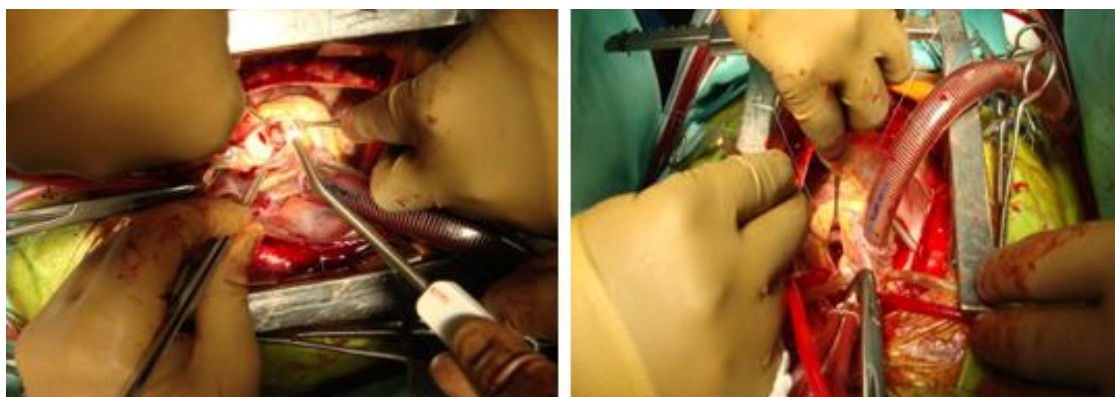


Figure 4

In view of the LV mass causing LVOTO and also the possibility of embolisation, the patient was taken up for urgent surgery. In view of his high eosinophil count leading to complications on CPB⁶, the patient was administered steroids (methyl prednisolone 60mg/day for 02 weeks).^{7,8} He underwent removal of LV thrombus and excision of LV mass from IVS with CPB (cardio pulmonary bypass) on 27 April 2015. (Fig 5)

The chest was opened by means of a median sternotomy. The pericardium did not appear to be affected by the mass. Aortotomy revealed a large friable, pedunculated, lobulated mass in LVOT under LCC (left coronary cusp) and RCC (right coronary cusp), in addition a 2cm x 2cm firm mass in IVS (inter ventricular septum) and a thrombus was present on the tip of anterior papillary muscle. The aortic and the mitral valve were normal. The patient had an uneventful post op recovery.



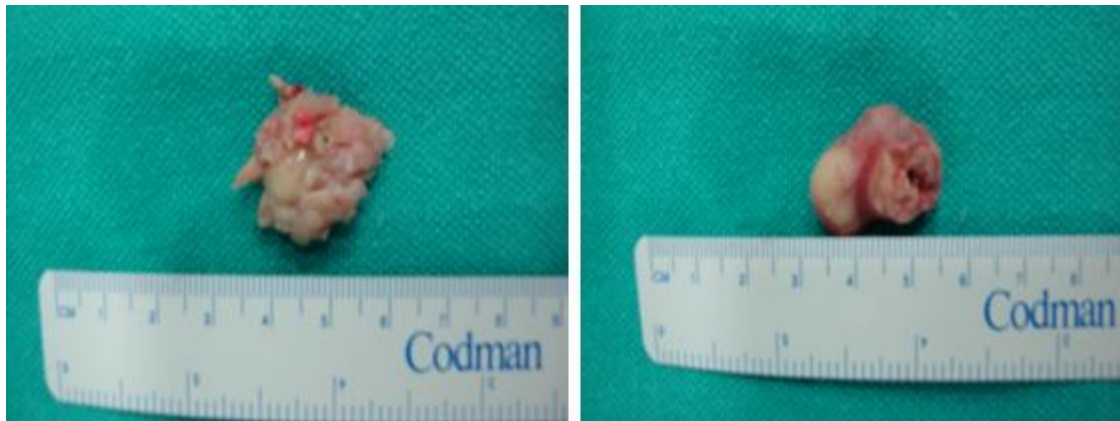


Figure 5

Histopathological examination: of LV, IVS mass and papillary muscle biopsy revealed numerous fungal hyphae, septate and showing acute angle branching with dense infiltration by lymphonuclear inflammatory infiltrate along

with numerous scattered foreign body giant cells (Fig 6) consistent with invasive aspergillosis.

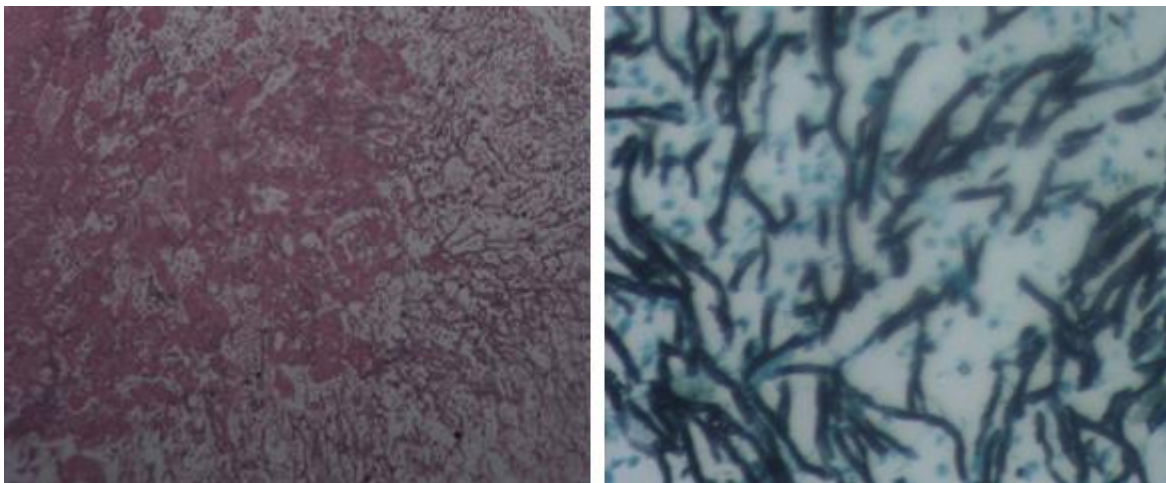


Figure 6

During his post op convalescence he was administered Voriconazole for 03 weeks. His investigations revealed Hb-12.6g/dl, PCV- 39.6%, TLC- 23,800, DLC- N- 83%, L-12%, M-02%, E-03%, Platelets-7,00,000/ul, AEC- 150/mm³

Follow up 2D echo showed no evidence of any intracavitary mass lesion or any gradients across LVOT. The patient has space occupying lesion in the dorsal spine which most likely is Aspergilloma caused due to embolisation without any neurological deficits, being managed conservatively.

3. Discussion

Eosinophils are primary mediators of inflammatory activity in ABPA.^{9,10} The most characteristic cardiovascular abnormality in HES is endomyocardial fibrosis, initially described in 1936 by Loeffler, who called it “fibroplastic parietal endocarditis with blood eosinophilia.” Patients with HES may also develop thrombosis, particularly in the cardiac ventricles, but also occasionally in deep veins. The differential diagnosis of cardiac disease with peripheral eosinophilia includes HES, Churg-Strauss syndrome (CSS), early giant-cell myocarditis, hypersensitivity reactions (usually medication induced), parasitic infection, Loeffler’s

or tropical endomyocardial fibrosis (TEF), and malignancy.¹¹ Fungal mural endocarditis is rarely diagnosed antemortem¹² and that to when a cardiac mass is involved.¹³ Acute invasive *Aspergillus* infection mainly affects patients who are immunocompromised, and are extremely rare in immunocompetent individuals.¹⁴ *Aspergillus* species frequently form large fungal masses,¹⁵ which can then embolize.¹⁶ In such cases, 2-dimensional echocardiography and cardiac MRI are valuable for early diagnosis.^{13,17} Because a pedunculated mass in the LVOT causing LVOTO presents a clinical problem and raises the possibility of thromboembolism¹⁶ with potentially catastrophic consequences, prompt surgical intervention is necessary. In our patient, TTE showed a pedunculated mass in the left ventricle and we suspected the diagnosis of thrombus. Once the diagnosis of an intracavitary mass was established, we initiated prompt surgical intervention.

Walsh and Hutchins found a 40% prevalence of aspergillus mural endocarditis in patients who had aspergillosis with cardiac involvement.¹⁸ Invasive fungal infections are important causes of morbidity and mortality in patients who have received solid organ or bone marrow transplants.^{1,2,3,4} Infection with *Aspergillus* species can result in a variety of clinical syndromes, including sinusitis, tracheobronchitis,

pneumonia, necrotizing cellulitis, brain abscess, and disseminated disease.¹⁹ Aspergilloma in the heart is rare.¹⁸ Aspergillus endocarditis tends to occur in patients who have undergone open heart surgery. It has also been described as a complication of parenteral nutrition and drug addiction. Most frequently, the aortic and mitral valves are the sites of infection.¹⁵ Aspergillosis presenting as mass lesions involving the chamber of heart has a few mentions in literature.^{5,15,17,18} To the best of our knowledge this would be the first case of invasive cardiac aspergillosis presenting as a mass lesion in an immunocompetent host. The only other case reported in an immunocompetent host is that of a cardiac aspergilloma in a HBsAG positive patient.¹⁹

The aim of presenting this case was to emphasize the rarity of this entity and the catastrophic sequelae it may have if not diagnosed timely. We conclude that, given the progressive increase in the number of organ transplants and immunosuppressed patients, as well as the increasing prevalence of cardiac fungal infections, clinicians should be aware of all possible presentations of invasive or noninvasive aspergillosis.

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