

Pulmonary fat embolism incidentally confirmed throughout VATS biopsy after mitral valve replacement

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Introduction: Fat embolism is known to occur secondary to disruption of the bloodstream upon fat entry, and is most commonly associated with bone fracture, being relatively rare in trauma, burns, tumors, and cosmetic surgery. Herein, we report our experience of initial misdiagnosis with septic pneumonia originated from acute bacterial endocarditis, with a finally confirmed diagnosis of fat embolism after mitral valve replacement (MVR) with sternotomy by performing video-associated thoracoscopic surgery (VATS) biopsy.

Case: A 78-year-old male with diabetes mellitus, hypertension, and atrial fibrillation was referred to our hospital for fever (39.1°C) and confused mentality. Three weeks prior to referral, he was treated with 2nd generation cephalosporin for two weeks upon suspicion of GI tract infection. Chest CT revealed left lower lobe (LLL) consolidation with bilateral pleural effusion. Brain MRI revealed probable acute embolic infarction (Figure 1). TTE and TEE revealed MV vegetation size of 1.58.x1.14 cm (Figure 2). IV Ceftriaxone plus gentamicin was initiated, and blood culture was negative. MVR was performed with coronary artery bypass grafting due to coronary artery occlusive disease (3 vessel). The culture of the valve tissue was negative for bacteria. After surgery, chest CT revealed new LLL consolidation and septic pneumonia was presumed from concurrent endocarditis. Regardless of antibiotics for over 1 month, cefepime for *K. pneumoniae*, cultured from the sputum, and changing to meropenem afterward, the follow up Chest CT revealed aggravating consolidation (Figure 3). To confirm pathology, VATS biopsy with surgical resection was performed and a final diagnosis of focal intra-alveolar organizing fibrosis with bone marrow embolus was made (Figure 4).

Conclusion: We experienced a case of rare pulmonary fat embolism after MVR with sternotomy. Initially, we misdiagnosed the septic pneumonia caused by endocarditis and administered proper antibiotic treatment for over 1 month. If clinicians confront this case someday, rapid pathologic examination would be helpful in diagnosis and prevention of unnecessary antibiotics treatment.

