Rasmussen's Aneurysm in a Child with Multidrug Resistant Pulmonary Tuberculosis

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To the Editor: We present a 7-and-a-half-year-old boy who was referred to us in May 2018 for management of his multidrug-resistant (MDR) pulmonary tuberculosis (PTB) with left sided pleural effusion. Sputum microscopy and GeneXpert were positive for acid fast bacilli (AFB) (2+) and rifampicin resistant *Mycobacterium tuberculosis* (MTB) respectively. He was started on kanamycin (Km), high dose moxifloxacin (Mfx), para-aminosalicylic acid (PAS), cycloserine (Cs) and clofazimine (Cfz) as second-line anti-tubercular treatment (ATT) regime. In June 2018, he had hemoptysis for 4 d. His hemoglobin dropped from 8.4 g/dl to 6.1 g/dl. He was immediately hospitalised, transfused with packed red blood cell (PRBC) transfusion and underwent an urgent contrast enhanced CT chest (CECT) with pulmonary angiography, which revealed destruction of entire left lung parenchyma with bronchiectasis, areas of necrotic breakdown in the left lower lobe with a large 1.9 × 2.0 cm sized Rasmussen's aneurysm. On the same day, he expectorated 120 ml of frank blood for which he received PRBC transfusion again. He underwent transcatheter intra-aneurysmal glue embolization of the Rasmussen's aneurysm under general anesthesia. He had no further episodes of hemoptysis. He was observed for one week and then discharged.

Hemoptysis is estimated to occur in fewer than 1% children with PTB [1]. Hemoptysis in TB could be due to various etiologies like aspergillomas, broncholiths, bronchiectasis, chronic bronchitis, TB reactivation, scar carcinoma, microbial colonization within a cavity and vascular abnormalities such

as pseudoaneurysms [2]. Rasmussen's aneurysm is an extremely rare entity with a prevalence of 4% in autopsy findings of chronic cavitary TB [3]. It results from the weakening of the pulmonary artery wall from an adjacent cavity, leading to pseudoaneurysm formation [4]. It may lead to rupture and life-threatening massive hemoptysis with a mortality rate ranging from 50 to 100% [5]. Our patient also had a large quantity of hemoptysis but timely intervention proved to be lifesaving. CT in a child with hemoptysis is diagnostic and should be done using an injector and bolus tracking technique with timing of contrast injection being crucial for opacification of either the pulmonary artery/bronchial circulation. Hemoptysis is now increasingly being managed through trans-arterial catheter embolization procedures, performed by interventional radiologists which is also the first-line of therapy.

Compliance with Ethical Standards

Conflict of Interest None.

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