

A case of tracheal stenosis with double aortic arch misdiagnosed as asthma in adult

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Double aortic arch is a congenital disease that connects the ascending and descending aorta. This is commonly diagnosed in infants and can lead to compression and stenosis of the airway and esophagus, causing dyspnea, wheezing, cough, dysphagia, and recurrent respiratory infections. A 19-year-old female patient visited with worsening respiratory distress after a respiratory tract infection. She had allergic rhinitis and a shellfish allergy but no other medical history. She has experienced exercise-induced respiratory distress for several years, but had been without medical care for it. No wheezing was heard and the Chest X-ray showed no significant changes of left hilar enlargement compared to five years ago (Figure 1), and PNS water's view revealed bilateral maxillary sinusitis. The PFT showed obstructive pulmonary dysfunction (FEV1 52%, FVC 77% and FEV1/FVC 64%) with a mild expiratory loop slope and a negative response to bronchodilator (Figure 2). Despite a month of treatment with oral and inhaled steroids based on acute exacerbation of asthma, there was no improvement in lung function and respiratory distress. To rule out other obstructive airway diseases, Chest CT was performed, we discovered a double aortic arch and tracheal narrowing (Figure 3). As the patient met the surgical indication, she was transferred to a hospital capable of thoracic surgery. Recurrent dyspnea, cough, and chest tightness are common symptoms of bronchial asthma. Diagnosis of asthma can be made only based on medical history, particularly when accompanied by seasonal variations, atopic disease, allergic rhinitis, and family history. However, other causes of respiratory distress should be ruled out. In this case, she has experienced progressive respiratory distress as the vascular diameter increased during her growth. We learned the importance of considering other obstructive airway diseases if there is no medical improvement despite of appropriate medication and the need for imaging studies in asthma.

Figure1

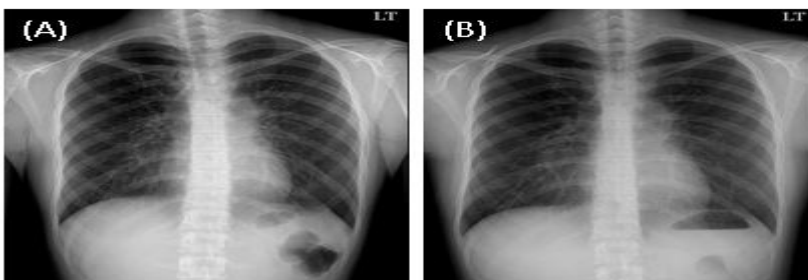


Figure 1A 2018.06.19 CXR shows Lt. hilar enlargement
Figure 1B 2023.05.01 CXR shows no change

Figure2

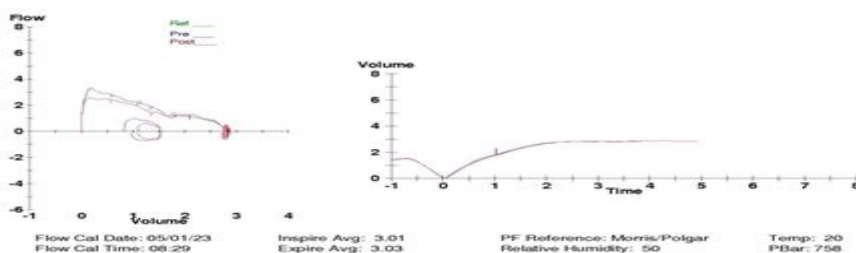


Figure3



Figure 3 A,B Chest CT (Mediastinal setting) Trachea that is located between double aortic arch
Figure 3 C,D Chest 3D CT Two aortic arches that connect the ascending and descending aorta