Case of the Month

All that wheezes is not Asthma

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With worsening air quality, rise in environmental allergens etc. combined with increasing awareness of respiratory diseases, a surge in the incidence of OADs is being witnessed globally. To combat this increasing trend, a number of initiatives to standardise the management of OADs have been taken. Adding to the complexities in the management of OADs are asthma 'mimics' of which tracheobronchial tumours form a significant chunk. Central airway tumours are usually misdiagnosed as asthma due to the similarity in presenting symptoms1. A wide spectrum of tumours can occur in the tracheobronchial tree. Below is a case which highlights the importance of evaluating for asthma mimics.

A 44 year old, non-smoker, male with a previous diagnosis of severe asthma was transferred to our facility from another hospital with increased shortness of breath, cough and wheezing, which was not responding to standard treatment (iv steroids/bronchodilators/antibiotics). The patient had a history of 2 admissions in the past 3 months for similar episodes. On detailed history taking it was revealed that his complaints of dry cough and shortness of breath on exertion were associated with wheezing and nocturnal awakening started 6 months ago. He denied chest pain, weight loss, fever, chills, night sweats or haemoptysis. In his past medical history he had no pulmonary or other type of disease. There was no history of allergies, nasal discharge, and skin disorders. The patient admitted multiple unscheduled visits to the pulmonary clinic in the past 6 months for his uncontrolled asthma but treatment with bronchodilators did not alleviate symptoms.

On physical examination patient was a febrile, hemodynamically stable but tachypneic with a respiratory rate of 26/min and saturation of 95%. A fixed monophonic wheeze could be heard in all lung fields especially over the trachea. His previous pulmonary function studies demonstrated a moderate obstructive pattern without any significant bronchodilator response. Chest Radiography did not reveal any significant changes. The finding of a fixed monophonic wheeze prompted us to do a CT scan thorax to rule out any endo-bronchial pathology. CT scan demonstrated a polypoid intra-tracheal lesion occupying a 2 cm length of trachea. Flexible fibre-potic Bronchoscopy was done which revealed a polypoid intra-tracheal mass occluding approximately 80% of the lumen. Cardiothoracic and ENT surgeons were consulted and surgical debulking of the tumour was done first by rigid bronchoscopy. The residual tumour was removed gradually in three sessions by Flexible Bronchoscopy with Cryo-debulking and Argon Photocoagulation. The resected tumour specimen were sent for histopathological analysis; which revealed stratified squamous epithelium and well circumscribed, partially encapsulated tumour comprising of short fascicles and loose sheets of pleomorphic and hyperchromatic spindle cells. Prominent nuclear palisading with focal Verocay body like differentiation, stromal oedema were seen. Immunohisto-chemistry was positive for S 100 confirming a diagnosis of a Schwanomma. Post debulking the patient was put on bronchoscopic surveillance for a period of one year with no evidence of recurrence at the end of 1 year. He is currently asymptomatic.

Discussion :

Intra Tracheal Schwannomas are typically single, circumscribed, encapsulated tumours of the lung arising from intra-luminal, neurogenic tissue (Schwann cells of the nerve sheath). Many patients are initially misdiagnosed with asthma, especially with more indolent tumours. The tumour must generally become large enough to obstruct more than half the diameter of the airway before symptoms manifest. They are often found incidentally when a patient is being evaluated for haemoptysis or pneumonia[2,3]. When tracheal tumour is suspected, the most important and preferred test for diagnosis is rigid bronchoscopy. Compared to flexible bronschoscopy, rigid bronschoscopy provides more secure control of the obstructed airway and control of any potential bleeding. The standard treatment for these tumours is circumferential resection with tracheal reconstruction[4,5].

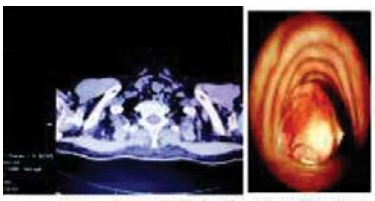

Fig 1 — (a) CT thorax showing an intra-tracheal lesion; (b)Bronchoscopic image showing the intratracheal lesion.

Fig 2 — A, B & C Showing removal of the intra-tracheal tumour using argon plasma coagulation with cryotherapy

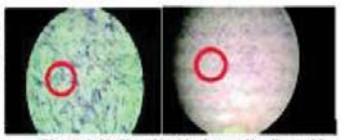

Fig a) & b) Showing Nuclear palisading with Verocay bodies

Take Home Messages-

Uncontrolled asthma with clinical features of stridor or a fixed monophonic wheeze should prompt a thorough evaluation for an endobronchial/ tracheal lesion.

If the CT scan is suggestive of something suspicious, the threshold to perform diagnostic bronchoscopy should be low.

Computed tomography (CT) will multiplanar reconstructions is the best method o imaging and detecting tracheal or major bronchi lesions.

This case reinforces the common adage that "all that wheezes is not asthma". Apart from unravelling a rare diagnosis (intra-tracheal) schwannoma) the bronchoscopic ablative procedure spared the patient a major cardiothoracic intervention.

References

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Mediquiz : Answer

Left Col. :

1.(c); 2. (a); 3. (b); 4(b); 5. (c); 6.(b); 7.(c); 8.(c); 9.(c); 10.(d)

Right Col. :

1(B), 2(A), 3(B), 4(B), 5(D), 6(C), 7 (D)