International Journal of Advances in Medicine
Verma L et al. Int J Adv Med. 2019 Jun;6(3):989-990
http://www.ijmedicine.com
pISSN 2349-3925 | eISSN 2349-3933
DOI: http://dx.doi.org/10.18203/2349-3933.ijam20192278

Letter to the Editor

Saber sheath trachea in chronic obstructive pulmonary disease patients

Sir,

The shape of the human trachea is observed to be having a high anatomical variabilities along its whole length, In a study by Gamsu and Webb, looking at different tracheal shapes by computed tomography, it was documented that the most common configuration was round or oval.[1] One of which is a "saber sheath trachea".

Saber sheath trachea is defined as an anteroposterior (sagittal) diameter of intrathoracic trachea exceeding to lateral (coronal) by a ratio of 2:1 as measured at the site 1 cm above the aortic arch and the extra thoracic trachea being normal. It is most commonly seen in males and is considered to be a diagnostic sign of Chronic obstructive pulmonary disease.[2]

The mechanism by which a saber sheath trachea is so common in chronic obstructive pulmonary disease (COPD) patients is due to excessive coughing leading to recurrent damage to the trachea predominantly in the anterior part of trachea further causing remodelling process wherein the cartilage is ossified to form a 'U' Shaped trachea hence also called as a Horseshoe shaped trachea.[3]

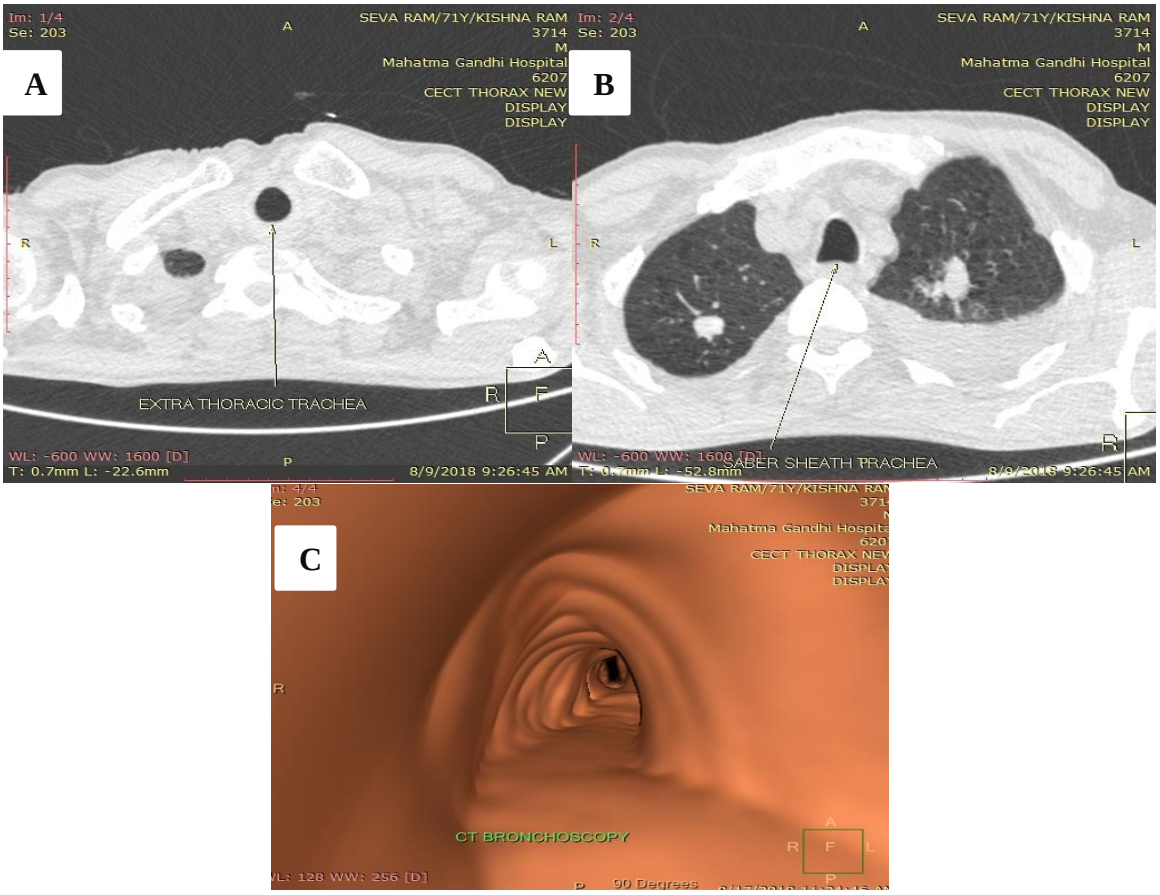

Figure 1: Axial CT-Thorax (A) demonstrate a normal extrathoracic trachea, (B) Another slides of the chest CT shows a saber- sheath intrathoracic trachea, (C) CT bronchoscopic view demonstrates Saber sheath trachea.

On X-ray we can observe intrathoracic narrowing with hyperinflated lungs (Figure 1). And on CT Thorax we see there is inward displacement of the lateral portions of the tracheal wall and tracheal cartilage with side-to-side

narrowing of the tracheal lumen. Though the tracheal wall thickness remains the same. During forced expiration, CT demonstrates further inward bowing of the tracheal walls in many patients (Figure 2).[4]

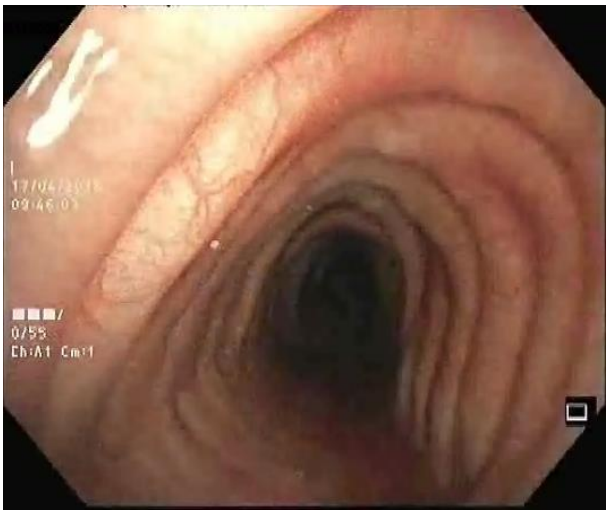

Figure 2: Bronchoscopic examination shows that Saber sheath trachea in severe COPD patient. Elevated intrathoracic pressure leads to degeneration and ossifications of the cartilage that indirectly promotes chronic remodelling, calcification and bending of tracheal cartilage.

The importance of diagnosing saber sheath trachea is that it is a fixed deformity of the trachea and remains same throughout the life and associated with Global initiative for chronic obstructive lung disease (GOLD) stages III and IV.[5]

Lokesh Verma*, Hemant Borana, Govind Desai, Sanidhaya Tak

Department of Pulmonary Medicine Dr. S.N. Medical College, Jodhpur, Rajasthan, India

***Correspondence to**
Dr. Lokesh Verma,
Email: lokeshverma213@gmail.com

REFERENCES

1. Gamsu G, Webb WR. Computed tomography of the trachea: normal and abnormal. AJR Am J Roentgenol. 1982 Aug;139(2):321-6.
2. Green R. Saber-sheath trachea: Relation to chronic obstructive pulmonary disease. AJR Am J Roentgenol. 1978;130:441-5.
3. Greene R, Lechner GL. Saber-sheath trachea: a clinical and functional study of marked coronal narrowing of the introthoracic trachea. Radiology. 1975 May;115(2):265-8.
4. Webb EM, Elicker BM, Webb WR. Using CT to diagnose nonneoplastic tracheal abnormalities: Appearance of the tracheal wall. AJR Am J Roentgenol. 2000 May;174(5):1315-21.
5. Ciccarese F, Poerio A, Stagni S, Attinà D, Fasano L, Carbonara P, et al. Saber-sheath trachea as a marker of severe airflow obstruction in chronic obstructive pulmonary disease. Radiol Med. 2014 Feb;119(2):90-6.

Cite this article as: Verma L, Borana H, Desai G, Tak S. Saber sheath trachea in chronic obstructive pulmonary disease patients. Int J Adv Med 2019;6:989-90.