

## OESOPHAGEAL CARCINOMA CAUSING VARIABLE INTRATHORACIC UPPER AIRWAY OBSTRUCTION

Deepthi Laldaya<sup>1</sup>, Unnati Desai<sup>2</sup>, Jyotsna Madanmohan Joshi<sup>3</sup>

<sup>1</sup>Ex-Resident, Department of Pulmonary Medicine, TNMC and BYL Nair Hospital, Mumbai.

<sup>2</sup>Associate Professor, Department of Pulmonary Medicine, TNMC and BYL Nair Hospital, Mumbai.

<sup>3</sup>Professor and HOD, Department of Pulmonary Medicine, TNMC and BYL Nair Hospital, Mumbai.

### ABSTRACT

#### BACKGROUND

A 62-year-old man hospitalised for evaluation of dysphagia was referred for respiratory complaints of recent onset breathlessness, cough and snoring since 5 months. He was hypertensive, ex-smoker (15 pack-years). Respiratory system examination revealed rhonchi. Blood investigations and chest x-ray were unremarkable.

#### KEYWORDS

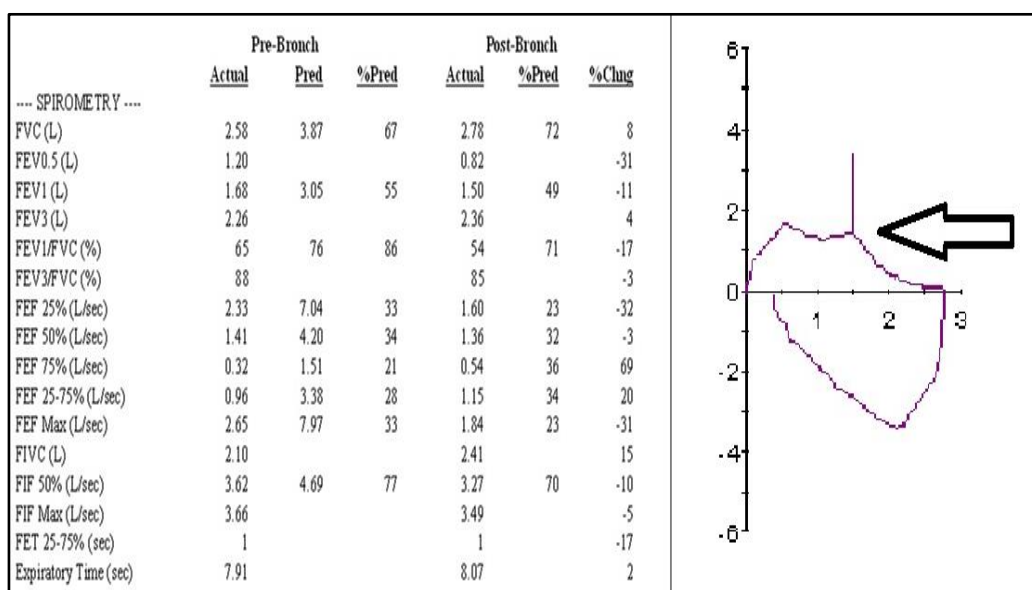
UAO, Spirometry.

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#### BACKGROUND



**Figure 1. Computed Tomography of Neck and Thorax Showed Circumferential Thickening of Mid Oesophagus Compressing on Trachea and Carina. The Red Arrow Points to the Compression in Sagittal Section. The Blue Arrow Points to the Compression in Coronal Section**



**Figure 2. Spirometry with Flow Volume Loop. The Black Arrow Points to Expiratory Loop Flattening**

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*Corresponding Author:*

*Dr. Jyotsna Madanmohan Joshi,  
Professor and HOD, Department of Pulmonary Medicine,  
TNMC and BYL Nair Hospital, Mumbai.*

*E-mail: drjoshijm@gmail.com*

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## DISCUSSION

Computed tomography of neck and thorax showed circumferential thickening of mid-oesophagus compressing trachea and carina with diffuse centrilobular emphysema (Figure 1). Upper gastrointestinal endoscopy showed near complete circumferential luminal thickening of oesophagus. Biopsy of the thickening confirmed squamous cell carcinoma of oesophagus. The fiberoptic bronchoscopy showed no endobronchial infiltration, tracheoesophageal fistula. Spirometry demonstrated an obstructive abnormality with a post bronchodilator FEV1/FVC ratio of 54% predicted, FEV1 of 1.50 L (49% predicted) and FVC of 2.78 L (72% predicted) consistent with the diagnosis of Chronic Obstructive Pulmonary Disease (COPD) with a characteristic Flow-Volume (FV) loop (Figure 2). The FV loop shows an expiratory curve flattening, Empey's index of 10.5 and FEF50/FIF50 ratio of 0.38. Hence, the spirometry reveals

obstructive abnormality with Variable Intrathoracic Upper Airway Obstruction (VIUAO).

## CONCLUSION

The final diagnosis was carcinoma oesophagus causing VIUAO with COPD. Upper airway obstruction (UAO) is diagnosed on the FV loop before manifestation of symptoms of respiratory distress.<sup>1</sup> The three patterns of FV loop in UAO depending on the location and type of obstruction are fixed, variable intrathoracic or variable extrathoracic.<sup>2</sup> Features of VIUAO on spirometry are- 1) Empey's index  $\geq 8$ ; 2) FEF50/FIF50  $< 0.3$ ; 3) Flattening of expiratory curve of FV loop.<sup>3</sup> Oesophageal cancers cause UAO by endobronchial infiltration, mediastinal lymphadenopathy and intra-oesophageal self-expandable metallic stents.<sup>4</sup> Our patient had none. Extrinsic compression of the trachea due to the oesophageal mass can be postulated as the reason for UAO in our case.

## REFERENCES

- [1] Karkhanis VS, Desai U, Joshi JM. Flow volume loop as a diagnostic marker. *Lung India* 2013;30(2):166-168.
- [2] Miller RD, Hyatt RE. Evaluation of obstructing lesions of the trachea and larynx by flow-volume loops. *Am Rev Respir Dis* 1973;108(3):475-481.
- [3] Empey DW. Assessment of upper airways obstruction. *Br Med J* 1972;3(5825):503-505.
- [4] Patil VP. Airway emergencies in cancer. *Indian J Critical Care Med* 2007;11(1):36-44.