Question 16
A 66-year-old man presents with progressive exertional dyspnoea. His anthropometric indices are:
- height 175 cm
- weight 98 kg
- body mass index (BMI) \( 32 \text{ kg/m}^2 \) [18-25]
His lung function test results are:
- forced expiratory volume in one second (FEV\(_1\)) 1.72 L (56% predicted)
- forced vital capacity (FVC) 2.14 L (54% predicted)
- FEV\(_1\)/FVC 80%
- total lung capacity (TLC) 4.12 L (64% predicted)
- residual volume (RV) 1.98 L (84% predicted)
- diffusing capacity for carbon monoxide corrected for volume (KCO) 4.9 mL/min/mmHg/L (110% predicted)
What is the most likely cause of this man’s dyspnoea and lung function abnormalities?
A. Obesity.
B. Pulmonary fibrosis.
C. Chronic obstructive pulmonary disease.
D. Cardiac failure.
E. Bilateral diaphragm paralysis.
Answer:

Issues
He is obese

Obstructive abnormalities — An obstructive ventilatory defect is a disproportionate reduction of maximal airflow from the lung in relation to the maximal volume (ie, VC) that can be displaced from the lung [45-47]. It implies airway narrowing during exhalation and is defined by a reduced FEV\(_1)/VC\) ratio below the 5th percentile of the predicted value.

Restrictive abnormalities — A restrictive ventilatory defect is characterised by a reduction in TLC below the 5th percentile of the predicted value, and a normal FEV\(_1)/VC\).

Mixed abnormalities — A mixed ventilatory defect is characterised by the coexistence of obstruction and restriction, and is defined physiologically when both FEV\(_1)/VC\) and TLC are below the 5th percentiles of their relevant predicted values. S
A simplified algorithm that may be used to assess lung function in clinical practice. It presents classic patterns for various pulmonary disorders. As in any such diagram, patients may or may not present with the classic patterns, depending on their illnesses, severity and lung function prior to the disease onset (e.g. did they start with a vital capacity (VC) close to the upper or lower limits of normal (LLN)). The decisions about how far to follow this diagram are clinical, and will vary depending on the questions being asked and the clinical information available at the time of testing. The forced expiratory volume in one second (FEV1)/VC ratio and VC should be considered first. Total lung capacity (TLC) is necessary to confirm or exclude the presence of a restrictive defect when VC is below the LLN. The algorithm also includes diffusing capacity for carbon monoxide (DL,CO) measurement with the predicted value adjusted for haemoglobin. In the mixed defect group, the DL,CO patterns are the same as those for restriction and obstruction. This flow chart is not suitable for assessing the severity of upper airway obstruction.

PV: pulmonary vascular; CW: chest wall; NM: neuromuscular; ILD: interstitial lung diseases; CB: chronic bronchitis.


If you go through the algorithm then the options are Chest wall or neuromuscular disorder

So answer is E bilateral diaphragm paralysis