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Case report

Emphysema and COPD in a young woman

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A B S T R A C T

A 28-year old woman presented with a progressive cough and breathlessness. She had a family history of early onset COPD. Spirometry demonstrated airflow obstruction with no reversibility. An HRCT showed extensive centrolobular emphysema with an upper lobe predominance. Blood tests including an Alpha − 1 Antitrypsin level were normal.

A 28-year old woman presented to the respiratory clinic with a history of progressive cough and breathlessness over the preceding 2–3 years. Her exercise capacity on initial presentation was consistent with an MRC Dyspnoea score of 4. She also described associated wheeze, chest tightness and a nocturnal cough.

The patient smoked 20 cigarettes per day and had a twelve year pack history. She is a college student with three children and pet dog and no relevant employment. She denied any illicit drug use including cannabis. Her other past medical history was that of Hypothyroidism. She was a term delivery at birth.

There appeared to be a significant family history of early diagnosis COPD with her mother and maternal grandmother diagnosed with the condition in their thirties. Furthermore one of her sons is an asthmatic.

A Chest X-ray (Fig. 1) was reported as showing hyper inflated lungs and possible upper zone emphysema.

Spirometry (Fig. 2) demonstrated airflow obstruction with an FEV1 of 52% predicted and ratio of 49%. There was no significant FEV1 reversibility following a steroid trial. Lung volumes showed evidence of hyperinflation with a total lung capacity of 144% and RV 237%. Gas transfer showed a TLCO of 60% and KCO of 55% predicted. These results were consistent with COPD and emphysema. An HRCT (Fig. 3) showed extensive centrolobular emphysema with an upper lobe predominance. Blood tests including an Alpha − 1 Antitrypsin level were normal.

Her initial management consisted of Salbutamol 100 mcg QID and Fluticasone/Salmeterol 500 μg/50 μg BD. Smoking cessation was strongly encouraged.

Following subsequent reviews she had presented to A&E and her GP surgery with episodic periods of increased cough, wheeze and sputum production requiring treatment with enteral steroids and antibiotics. She was also commenced on Tiotropium 18 mcg OD. Unfortunately the patient has continued to smoke despite repeated discussions regarding the implications of this.

Chronic obstructive pulmonary disease is a rare condition in the young and is generally not diagnosed in the under 40s [1]. Despite the diurnal variation seen at presentation the spirometry and HRCT findings in this case point very clearly towards such a diagnosis.

Fig. 1. CXR 2013 – hyper inflated lung fields.

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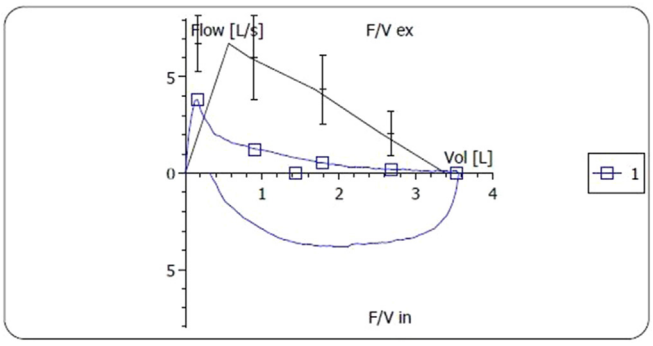

Fig. 2. Flow volume loop.

There is a dearth of contemporaneous literature available for non-Antitrypsin related COPD in a young person with the most relevant articles at least eighteen years old [2,3].

Critchley et al., [2] describe a new diagnosis of congenital lobar emphysema presenting in a pregnant young woman. However this was limited to the left upper lobe and thus surgically resectable, unlike the diffuse bilateral apical emphysema found in typical emphysema [4].

References

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Fig. 3. Bilateral emphysematous changes on HRCT.