Neuroleptic-Induced dyspnea: Respiratory Akathisia
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Case Presentation

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- 64 year-old male
- Dyspnea of 1 year duration
- Dyspnea was described as increased in respiratory rate and present “24/7”
- 7 pack years of tobacco abuse
- No cough, wheeze, chest pain or fever
- Medication haloperidol for his schizophrenia for one year

Physical Examination
- Restless
- Trachypnea, RR 24/min
- Involuntary orofacial muscle movement

Laboratory Data
- Normal CBC
- ABG
  - PH 7.59
  - PCO2 21mm Hg
  - PO2 126 mm Hg
- Spirometry
  - Mild obstruction (fig 1)
  - FEV1 83%pred, FVC 66%pred, FEV1/FVC = 0.60
- Chest CT scan: normal
- Normal echocardiogram
- Normal cardiac stress test
- Brain MRI: normal
- Cardiopulmonary Exercise Testing (Table 1)
  - Dyspnea as a limiting factor
  - Patient did not achieve his target heart rate
  - Anerobic threshold: normal
  - No evidence of ventilatory or circulatory limitation

Clinical Course
- Treated for COPD: tiotropium & fluticasone/salmeterol inhalers
- No significant improvement in dyspnea

Discussion

- Neuroleptics may cause extrapyramidal symptoms including akathisia and tardive dyskinesia (TD)
- TD is defined by repetitive purposeless movements typically involving the buccolingual masticatory areas and, occasionally, manifesting as choreoathetoid limb movements. TD is feared because it may be irreversible
- Akathisia is characterized by a need be in constant motion resulting in an inability to remain still
- Respiratory akathisia
  - is the respiratory equivalent of akathisia: subjective respiratory restlessness resulting in tachypnea and dyspnea
  - has been described in individuals with tachypnea and dyspnea

Cardiopulmonary Exercise Test

<table>
<thead>
<tr>
<th>VO2 max (L/min)</th>
<th>VO2 max (L/kg/min)</th>
<th>HR (beats/min)</th>
<th>VE max (% of predicted)</th>
<th>VO2/VT @rest (% of predicted)</th>
<th>VO2/VT @exercice (% of predicted)</th>
<th>VO2 sat @rest (%)</th>
<th>VO2 sat @exercice (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient</td>
<td>1.517</td>
<td>16.7</td>
<td>105</td>
<td>78.1</td>
<td>0.13</td>
<td>0.21</td>
<td>99</td>
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<tr>
<td>Predicted</td>
<td>2.589</td>
<td>20.1</td>
<td>156</td>
<td>107.0</td>
<td>0.30</td>
<td>0.18</td>
<td>99</td>
</tr>
<tr>
<td>% of predicted</td>
<td>59</td>
<td>105</td>
<td>78.1</td>
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</table>

Conclusion

- Respiratory akathisia is a rarely reported clinical entity
- Generalized body akathisia is a risk factor
- Respiratory akathisia should be considered in patients with a history of dyspnea and
  - are receiving neuroleptic medications
  - cardiopulmonary abnormalities have been excluded
- This is the first reported case where an extensive cardiopulmonary work-up conclusively excluded other potential causes of dyspnea, thus confirming the diagnosis of respiratory akathisia.

References


Diagnosis

Because this patient’s dyspnea was consistent with primary hyperventilation and no physiologic explanation despite an exhaustive evaluation, he was diagnosed with respiratory akathisia.