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Advanced Scoliosis Impact on COPD: Worsened Outcomes Due to Lack of Motivational Interviewing and Shared Decision Making - A Case Report

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Advanced Scoliosis Impact on COPD: Worsened Outcomes Due to Lack of Motivational Interviewing and Shared Decision Making. A Case Report.

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Background

- Scoliosis is a common musculoskeletal deformity typically caused by lateral displacement and rotation of the vertebrae.[1] Depending on the degree of lateral displacement, respiratory function can be affected due to a combination of impedance in the movement of ribs, mechanical disadvantages in respiratory muscle and decreased chest wall and lung compliance. See Figure 1.
- Chronic obstructive pulmonary disease (COPD) is one of the common respiratory diseases that could be affected by scoliosis.
- Generalized anxiety disorder has been found to affect roughly 20% of adults and can overlap with chronic diseases, such as COPD.[2]

Purpose

The case presented describes an advanced COPD patient with a history of progressive scoliotic curvature who presented multiple times with complaints of worsening respiratory symptoms. Thus, it is important to emphasize how the lack of meaningful patient communication and patient participation in the plan of care can lead to increased symptoms of anxiety, declining quality of life, and unnecessary medical testing. In addition, the case explores how applying a holistic combination of strategies including motivational interviewing, shared-decision making and proper communication can improve the level of patient care.

Scoliosis and Cobb Angle

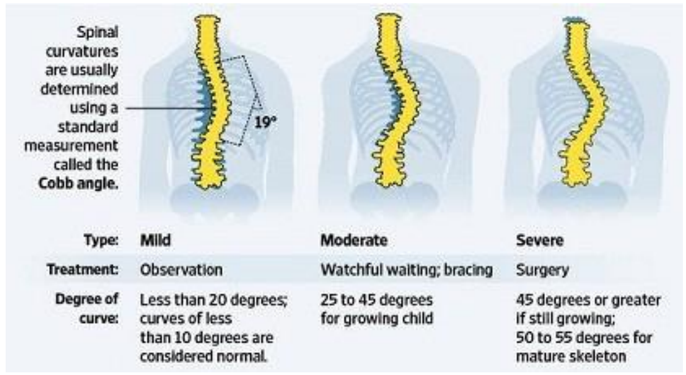

Figure 1. Varying degrees of scoliosis and its severity

Case Description

HPI: The patient is a 62-year-old male who presented to the outpatient clinic of Rowan Medicine's Neuromusculoskeletal Institute (NMI) in 2017 for complaints of DOE, low back pain (LBP) and left lower extremity (LLE) pain. His LLE pain was caused by CRPS, for which he had been on long-term opioid therapy for symptom management. He was subsequently diagnosed with COPD in 2015 following hip replacement surgery. Chest x-rays in 2015 and 2017 ruled out any consolidation or active disease processes, but noted bilateral chronic interstitial markings. His cardiac stress testing was negative.

PMH: COPD, use of CPAP for obstructive sleep apnea, thoracolumbar dextroscoliosis, chronic lumbar back pain with radiculopathy, osteoarthritis, chronic regional pain syndrome (CRPS) and anxiety.

Medications: Quetiapine 300 mg daily, oxycodone 15 mg TID, diclofenac 75mg BID, albuterol sulfate inhalation aerosol q6h PRN, nebulizer albuterol INH BID, fluticasone/umeclidinium/vilanterol inhaler100/62.5/25mcg once daily, and theophylline 300mg daily.

Social History: Exercise includes walking for 30 minutes or biking 45 minutes 2 to 5 days per week. No current alcohol, tobacco, or illicit drug use. Former smoker who quit 10 years ago and has a 5 pack-years smoking history. He stated he has a healthy diet and consumes 2 caffeinated drinks daily.

ROS: Denied any fevers, chills, chest pain, dizziness, gastrointestinal or genitourinary issues.

Physical Examination: Vitals: BP: 140/80 mmHg, Pulse oximetry: 97% on RA and ambulatory pulse ox dropping to mid-80s. BMI was 41 at date of visit.
Lungs: No wheezing, rales, rhonchi, or signs of coughing
Neuro: diminished patellar deep tendon reflexes and paresthesia that worsened with movement in the left L5 dermatome.

Follow ups: On 12/17/21 during a regular follow-up visit, the patient reported increased anxiety caused by his declining endurance, which was severely affecting his quality of life. Furthermore, the patient reported of a new onset of deep, achy, non-radiating pain that spread further down his left leg with associated paresthesia. At follow-up visits to the NMI in January and February of 2022, the patient reported no improvement in his symptoms. He stated that he is "in the process" of scheduling an appointment with his pulmonologist. The scoliosis x-ray series is also currently pending.

Discussion

- Although this patient had concerns for his worsening SOB and DOE, he had inconsistent follow up with his pulmonologist and failed to complete ordered imaging in a timely manner, which could have been averted through proper communication.
- Proper communication follows the 6-function model of de Haes and Bensing, which consists of skills in the following: fostering the relationship, gathering information, providing information, decision making, enabling disease- and treatment-related behavior, and responding to emotions.[3]
- Two promising techniques that offer sustainable methods in improving communication include shared-decision making (SDM) and motivational interviewing (MI), which have shown to increase COPD knowledge, treatment adherence and general function in patients at 3-month follow ups when compared to a control group.[4]

Conclusion

- MI and SDM are easy and accessible strategies for patient counseling that have been proven to foster medication compliance, promote adherence to weight-control programs for better treatment outcomes and address anxiety by providing hope and empowerment.[5,6]
- SDM can help guide the patient to a better understanding of his amalgam of disease processes that are exacerbating his DOE, eventually leading to better treatment outcomes. Subsequently, MI can help motivate him to follow up with his pulmonologist and complete the tests necessary to his current treatment plan.

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