



Long-term Patient Reported Symptom Improvement and Quality of Life Following Transthoracic Diaphragm Plication in Adults

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Background

Patient-reported outcomes (PROs), particularly quality of life (QOL) and patient satisfaction, remain paramount to patients and are of increasing importance as a hospital quality metric nationwide. For patients with diaphragmatic paralysis, surgical plication is the gold standard treatment. Many studies have reported objective outcomes, including pulmonary function tests (PFTs), post-op complications, and readmission rates. However, long-term subjective outcomes, patient satisfaction and QOL have yet to be fully examined. This study assesses these outcomes.

Methods

- A retrospective study of adult patients who underwent diaphragm plication across three institutions, May 2008 – Dec 2020, via open and RATS technique.
- A telephone survey was completed using previously validated questionnaires including the Medical Research Council (MRC) Dyspnea Scale, Cough Evaluation Test (CET), and further reported-symptoms and QOL questions.
- Additional retrospective objective data, chest radiographs (CXR) and PFTs were obtained via chart review.

Abbreviations:

ACCORDS = Adult and Child Center for Outcomes Research and Delivery Science
 CET = Cough Evaluation Test
 FEV1 = Forced expiratory volume in the first second
 FVC = Forced vital capacity
 MRC = Medical Research Council
 PFT = Pulmonary function testing
 PROs = Patient-reported outcomes
 QOL = Quality of life
 RATS = Robotic-assisted thoracic surgery
 VATS = Video-assisted thoracoscopic surgery

Figures

Figure 1: Patient reported symptoms pre and post diaphragm plication

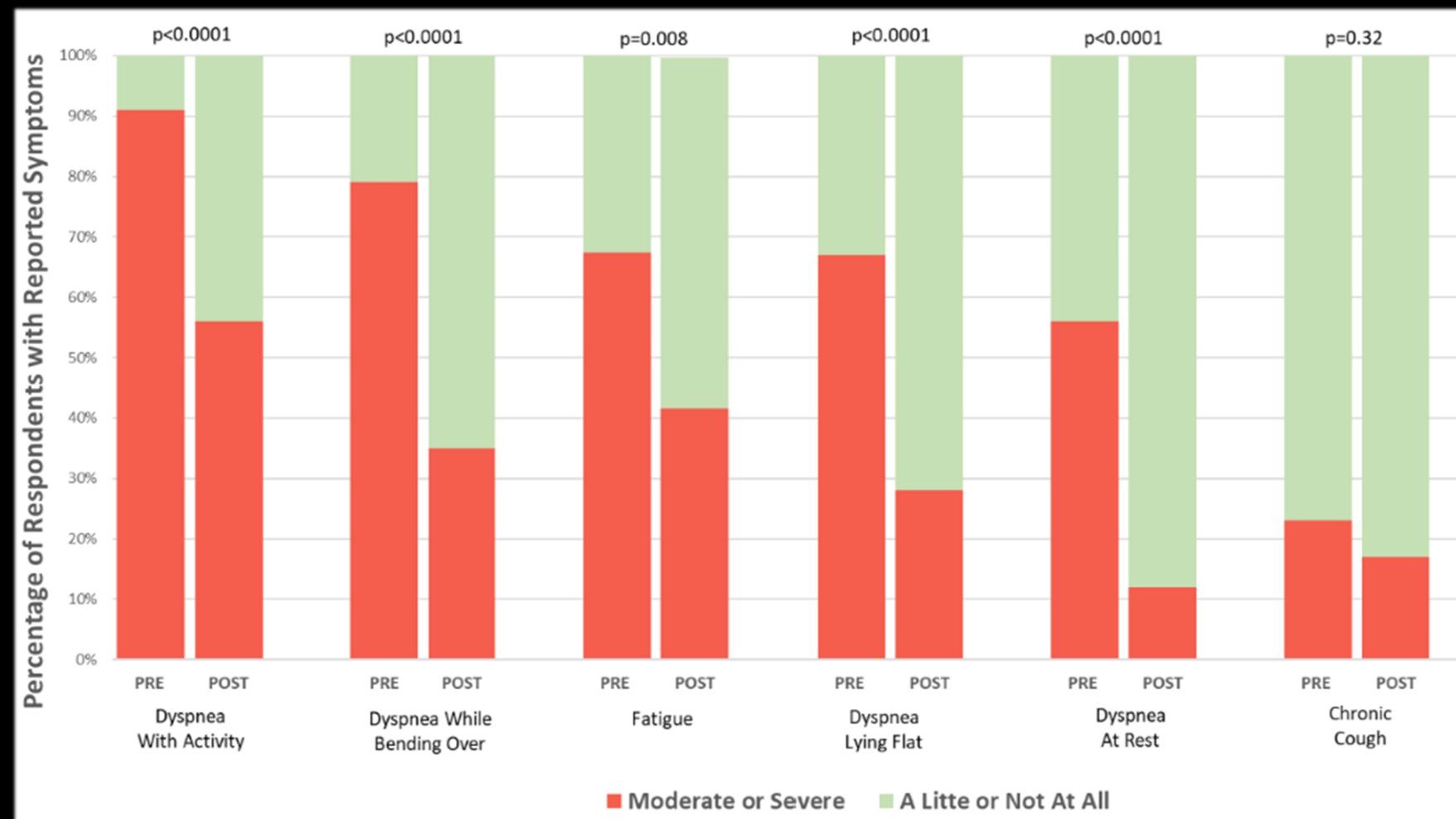
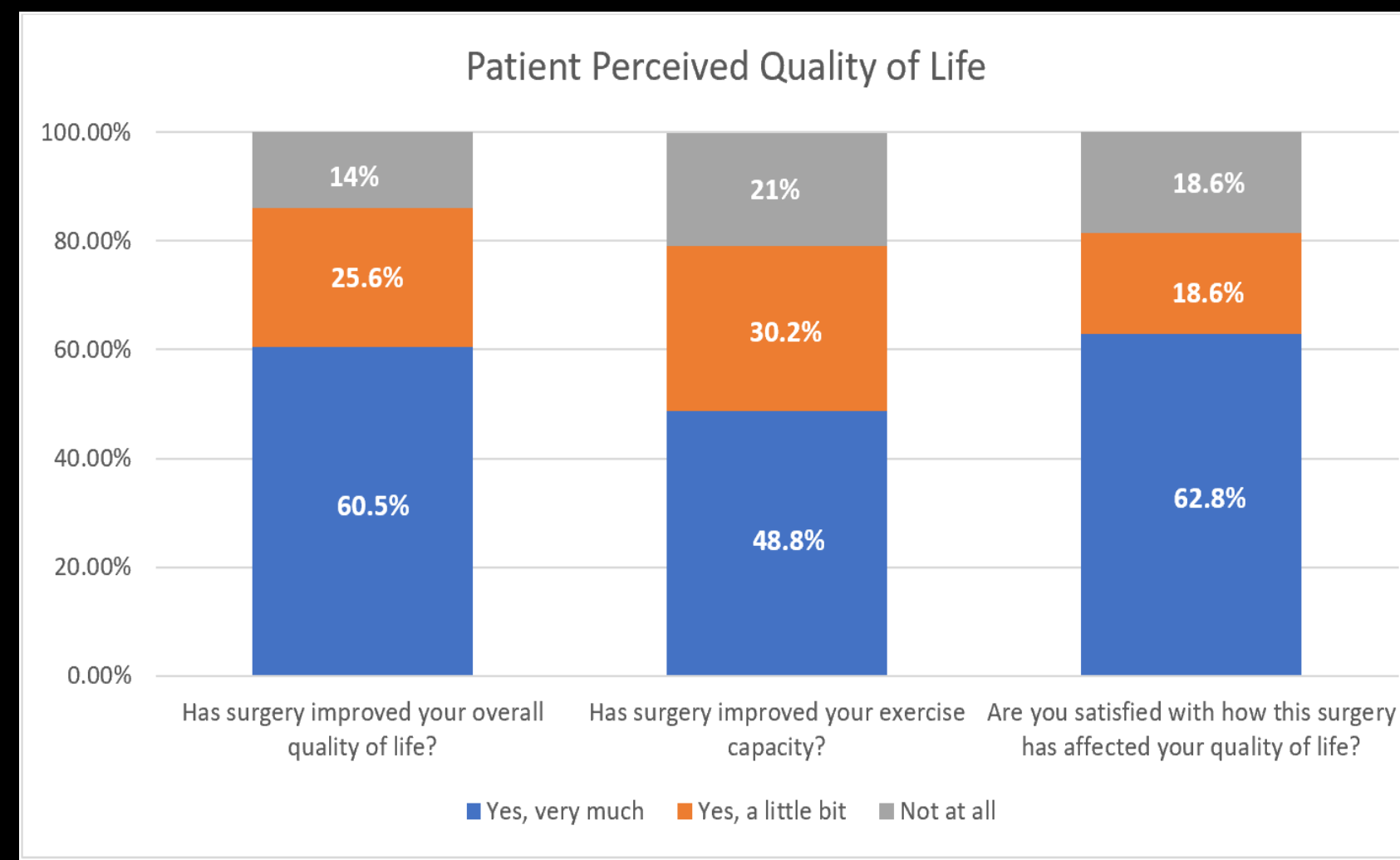


Figure 2: Patient perceived quality of life



Results

- Response rate = 41% (43/105)
- No statistical significance between response groups, data is presented as overall pre- and post-plication regardless of approach
- Significant improvement across all reported dyspneic symptoms as well as fatigue. No significant change in cough [Figure 1]
 - Supported by MRC Dyspnea Scale, (preop Grade 3, postop Grade 2, p<0.001)
 - Supported by CET, (preop and postop average score of 6, p=0.32)
- Significant improvement in reported QOL metrics [Figure 2]

Conclusions

Patients who underwent diaphragm plication (open and RATS) had statistically significant improvements in reported dyspneic and fatigue symptoms, as well as significant improvement in quality of life regardless of surgical approach.

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