

## The Use of Expiratory Muscle Strength Training to Rehabilitate Dysphagia Following Prolonged Intubation Post Cardiac Surgery: A Case Study

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### Abstract

**Introduction:** Following cardiovascular surgery, prolonged intubation of >48hours increases risk of dysphagia. Evidence of dysphagia treatment within this population is limited. This case study describes treatment of a 45 year old female with Shone's complex, presenting with severe pharyngeal dysphagia following re-do sternotomy and AVR requiring mechanical ventilation for 50 days.

**Methods:** Patient presented with respiratory compromise following trial of oral intake and severe dysphonia. Fiber Endoscopic Evaluation of Swallowing (FEES) assessment was conducted revealing reduced right vocal cord movement and silent aspiration of secretions. Treatment involving expiratory muscle strength training (EMST) was commenced. EMST is a device driven therapy where patients forcefully expire into a one way spring loaded valve, strengthening expiratory and submental musculature. Evidence shows effects of this treatment increase strength of respiratory muscles for improving cough, voice and swallow function. Daily treatment was completed by trained SLT assistant and nursing staff.

**Results:** Outcome was measured using GRBAS, Penetration Aspiration Scale and Functional oral intake scale (FOIS) pre and post treatment. Following a 3 month treatment period the patient progressed from level 1 (non oral intake; tube dependent) on the FOIS to level 7 (total oral intake without restrictions).

**Conclusion:** This case study highlights speech and language therapy's key role within this setting and the importance in early use of instrumental FEES assessment in cardiac ICU to diagnose oropharyngeal dysphagia and inform a specified treatment plan. Use of EMST within this environment is possible and ease of use by others following SLT led training aided treatment intensity.

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