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**Title:** Long-term improvement in swallowing following Expiratory Muscle Strength Training in a patient with chronic radiotherapy-associated dysphagia

**Body:** Background

Oropharyngeal dysphagia with aspiration is a recognised consequence of head and neck radiotherapy. Expiratory Muscle Strength Training (EMST) has been shown to improve swallowing in patients with chronic radiotherapy-associated dysphagia (RAD), although the evidence is currently limited to a small number of studies. It is unclear whether improvements are maintained over time.

Methods

We completed a case study comparing videofluoroscopic swallow evaluation in a patient with chronic RAD at baseline (3 years following radical chemoradiotherapy for oropharyngeal SCC) and again at 6 months after commencing EMST (5 weeks of intensive training followed by a maintenance regime). The outcomes of interest are the Penetration-Aspiration Scale and Dynamic Imaging Grade of Swallowing Toxicity.

Results

Swallow safety and efficiency scores, as measured using the validated tools above, were superior in the second videofluoroscopy. The difference in Penetration-Aspiration score for thin liquids was well above the threshold for clinically significant change.

Conclusions

The durability of gains in swallowing function from EMST in chronic RAD are unknown. This case study suggests that improvements in swallowing may last beyond the immediate post-training time point and into the maintenance phase. Further research on long-term benefits of EMST for head and neck cancer survivors is needed.

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