

Telemedicine Enabled Biofeedback Electropalatography Rehabilitation (TEBER): A pilot study for patients treated with surgery for oral cavity carcinoma

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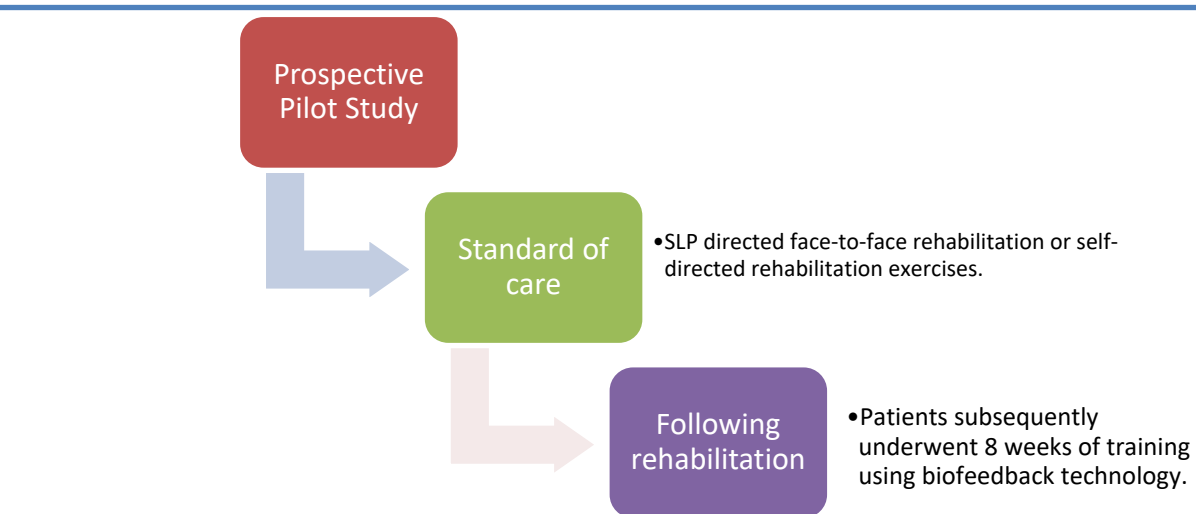
Introduction

- Survivors of oral cavity cancer can develop significant social barriers after treatment that adversely impacts quality of life with respect to **speaking and swallowing**.



- In our current study, we utilized the EPG device in tandem with video conferencing software to facilitate telemedicine rehabilitation – **allowing the patients to access care closer to home**.

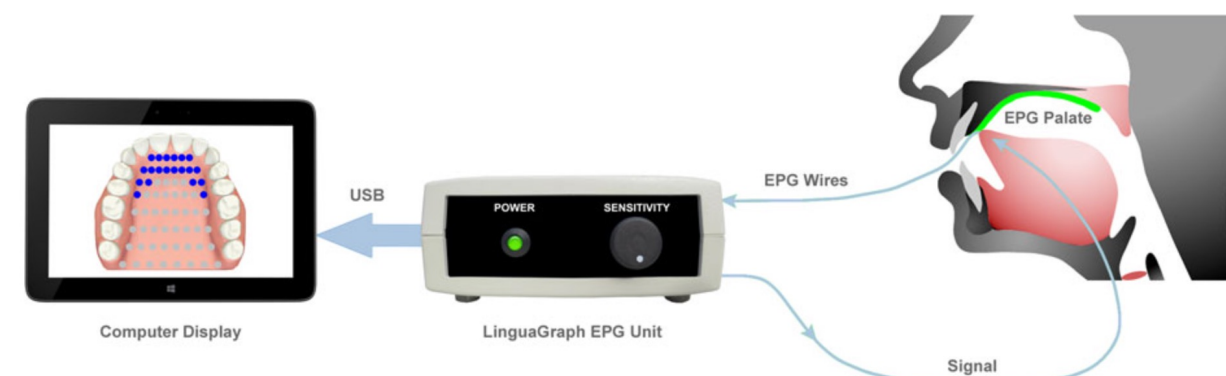
Methods



Mobility metrics:

- tongue protrusion
- tongue elevation
- open mouth premaxillary contact
- oral cavity obliteration (ml)
- Functional speech and swallowing questionnaires
- These were collected after the standard of care SLP rehabilitation, and again after the electropalatography.

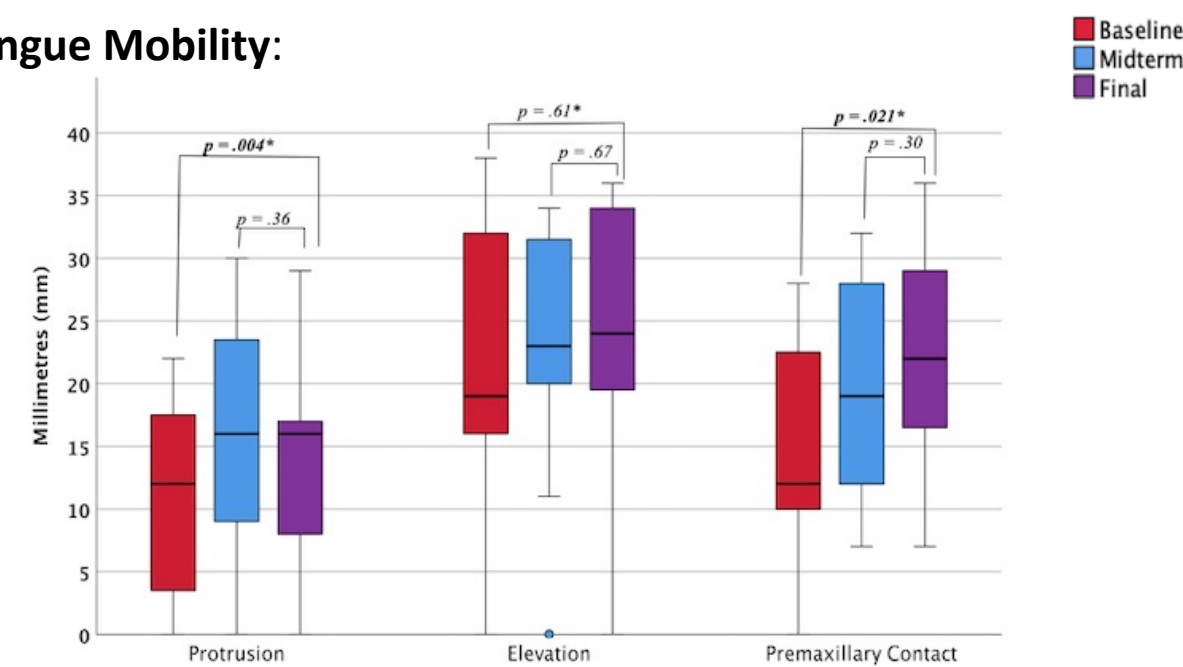
Methods



- Electropalatography was utilized in tandem with video conferencing to facilitate telemedicine rehabilitation

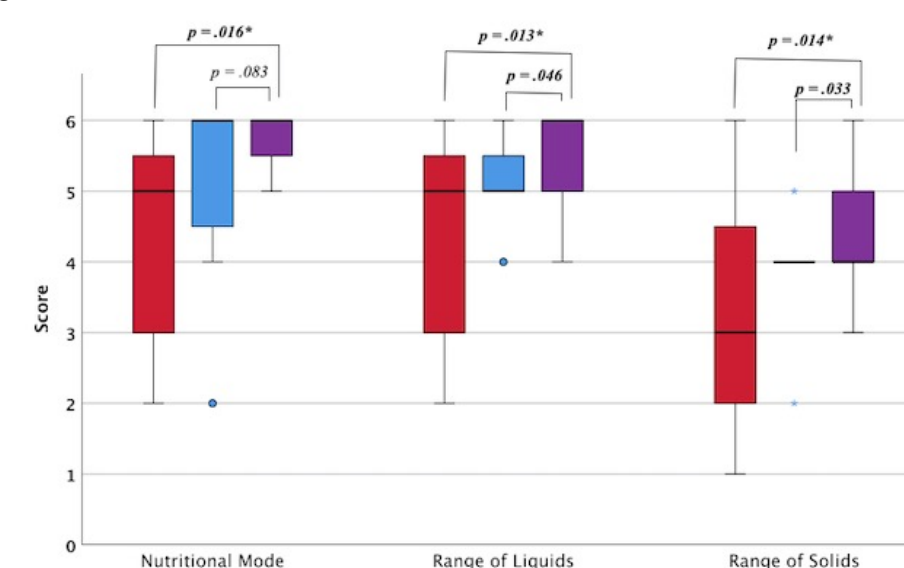
Results

Tongue Mobility:



- Mean tongue protrusion significantly improved across the rehabilitation program.
- Tongue elevation remained stable and there was no significant change across the rehabilitation program.
- Open mouth premaxillary contact significantly increased across the entire program

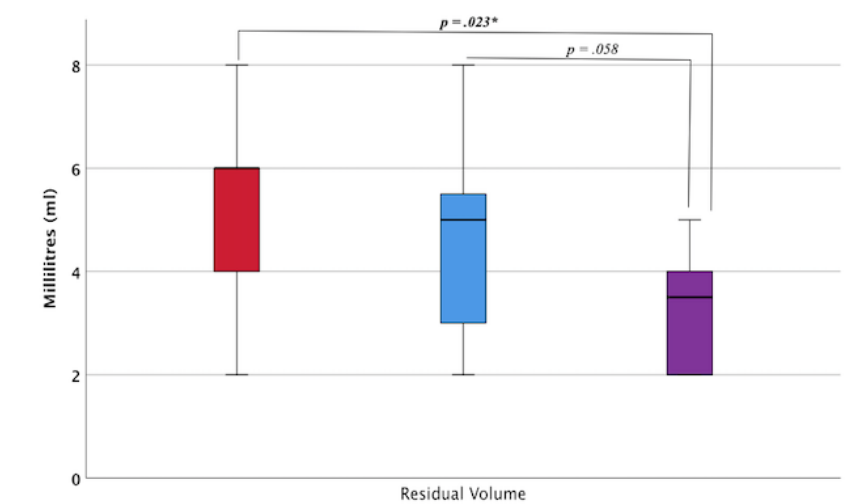
Diet:



- Nutritional mode significantly improved from baseline to final
- Range of liquids significantly improved between all 3 phases of the rehabilitation.
- Range of solids also significantly improved from baseline to final.

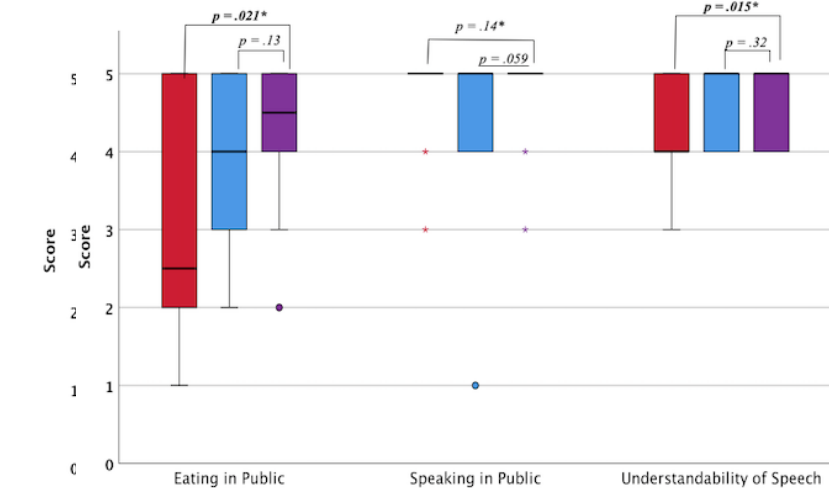
Results

Residual Volume:



- Oral cavity obliteration improved across the rehabilitation program.

Speech:

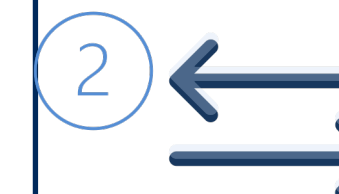


- Understandability of speech significantly improved across the rehabilitation program.
- Speaking in public scores did not improve across the rehabilitation program, but scores for eating in public did.

Discussion & Conclusion



1 This pilot data **suggests improvements** associated with TEBER related to lingual range of motion, speech, and swallowing.



2 Patient participation **was a barrier** that will require better patient selection and refinement of the device.



3 This pilot shows that the majority of the outcome data has a **positive trend with TEBER** and further study is warranted.

However TEBER is a complex intervention and that will require **improvements in patient selection and device design** before a **randomized phase II trial** should be undertaken.

For further questions please contact Dr. Douglas Chepeha at dchepeha@umich.edu and Dr. Justine Philteos at justine.philteos@mail.utoronto.ca



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