



## Polyglot aphasia secondary to Left Fronto-Parietal Tumor: A case study on Tele-rehabilitation

---

Haripriya Telakkadan, Archana U and Jayashree C Shanbal

EasyChair preprints are intended for rapid dissemination of research results and are integrated with the rest of EasyChair.

August 31, 2021

# **Polyglot aphasia secondary to Left Fronto-Parietal Tumor: A case study on Tele-rehabilitation**

**Haripriya Telakkadan<sup>1\*</sup>, Archana U<sup>2</sup> & Jayashree C. Shanbal<sup>3</sup>**

<sup>1</sup>M.Sc (Speech-Language Pathology) student, All India Institute of Speech and Hearing, Mysuru, Karnataka, India

<sup>2</sup>Speech-Language Pathologist, Tele-Center for Persons with Communication Disorders, All India Institute of Speech and Hearing, Mysuru, Karnataka, India

<sup>3</sup>Associate Professor in Language Pathology, Tele-Center for Persons with Communication Disorders, All India Institute of Speech and Hearing, Mysuru, Karnataka, India

**\*Corresponding author: haripriyaharindran@gmail.com**

## **Introduction**

Aphasia is manifested post damage to the language areas of the brain in dominant hemisphere. The damages due to a stroke and tumor might differ in various aspects. Most often the severity of aphasia is mild in tumor excision cases during the acute phase and thus need more of a family-centered approach for the betterment of life (Davie et al., 2009). A detailed evaluation sheds light on the communication difficulties in tumor cases. Various comprehensive test batteries reveal that post tumor excision a significant decrease in communication abilities can be observed (Brownsett et al., 2019).

## **Method**

The case included a female NS who is 37 years old with Non-fluent Aphasia which was seen secondary to left fronto-parietal intradiploic tumor, and she underwent left parietal craniotomy and excision of bone tumor and cranioplasty. An associated right hemiplegia was reported. NS is a polyglot with a pre-morbid exposure to Kannada, Hindi, and English. She attended 40 tele-sessions over a span of four months (3 sessions/ week). The sessions included a systematic intervention through the virtual mode as part of tele-rehabilitation during COVID-19. Shape coding approach along with semantic feature analysis was used. Demonstration of oro-motor exercises was done to reduce her oro-motor weakness to work on her effortful dysarthric speech. Eight-step Continuum therapy technique (Rosenbek et al., 1973) for Apraxia of Speech was practiced along with the shape coding. Patient centered therapy plan was followed to improve the daily communication skills, thus, the quality of life.

## **Result**

The longitudinal case study pre and post therapy measurements have shown improvement in fluency, mean length of utterance, number of verb tokens, percent of verb types and percent of thematically complete sentences. A significant decrease in the frequency of phonemic paraphasias and groping behaviors are also observed. Overall, everyday communication skills as per the needs of the individual and the environment have remarkably improved. The recovery was observed to be better for Kannada followed by Hindi.

## **Conclusion**

Aphasia rehabilitation post fronto-parietal lobe tumor excision demands early intervention approach. Consistent speech-language therapy along with physiotherapy has contributed to the pronounced improvement in the quality of life of the person. Moreover, the tele-mode promises for the provision of consistent rehabilitation services.

## **References**

- Davie, G.L., Hutcheson, K. A., Barringer, D.A., Weinberg, J.S., & Lewin, J.S. (2009). Aphasia in patients after brain tumour resection, *Aphasiology*, 23(9), 1196-1206.
- Brownsett, S.L.E., Ramajoo, K., Copland, D., McMahon, K.L., Robinson, G., Drummond, K., Jeffree, R.L., Olson, S., Ong, B., & G De Zubicaray, G. (2019). Language deficits following dominant hemisphere tumour resection are significantly underestimated by syndrome-based aphasia assessments, *Aphasiology*, 33(10), 1163-1181.
- Rosenbek, J. C., Lemme, M. L., Ahern, M. B., Harris, E. H., & Wertz, R. T. (1973). A treatment for apraxia of speech in adults. *The Journal of speech and hearing disorders*, 38(4), 462–472.

## **Acknowledgments**

Director, All India Institute of Speech and Hearing, Mysuru, India for supporting us to conduct the study.