

Speech and Swallowing Profile in Lateral Medullary Syndrome (Wallenberg Syndrome) - A Single Case Study

Divya P.S¹, Yuva Yoga Shree. B², Sumantra. M³, Pratheeba S³

¹Clinical Supervisor, ²Undergraduate Student, ³Post Graduate Student,
Department of Speech and Hearing, MERF Institute of Speech and Hearing (P) Ltd, Chennai, India

Corresponding Author: Yuva Yoga Shree. B

ABSTRACT

Lateral Medullary Syndrome is a rare condition which is presence of occlusion of the intra cranial segment of vertebral artery. People with Wallenberg syndrome experience paralysis or numbness on one side of the body. This can occur in the limbs, in the face, or even in a small area like the tongue. The syndrome can also cause bradycardia, or a slow heart rate, and low or high blood pressure. Other symptoms such as hoarseness, nausea, vomiting, hiccups, rapid eye movements, or nystagmus, a decrease in sweating, problems with body temperature sensation, dizziness, difficulty in walking and difficulty in maintaining balance. The most common symptom people with Wallenberg syndrome have is difficulty in swallowing. Involvement of nucleus ambiguus causes Dysphagia and dysarthria. A 73 years, male came for detailed Speech and Swallowing evaluation and diagnosed to have stroke in left lateral medullary infarct due to thrombosis of bulbar palsy. Currently he is under NG tube for feeding. This case study highlights on Speech and Swallowing profile on Lateral Medullary Syndrome

Key words: Wallenberg syndrome, Lateral Medullary Syndrome, Dysphagia.

INTRODUCTION

Wallenberg syndrome (WS), which is also called as Lateral Medullary Syndrome, is a commonly occurring type of cerebrovascular accident which results from an acute infarct that involves the posterior and lateral region of medulla oblongata. [1] Clinical presentation may include dizziness, dysphagia, dysarthria, dysphonia, and ipsilateral face and contralateral body sensory deficits .WS is most commonly caused by atherothrombotic occlusion of the vertebral artery, followed most frequently by the posterior inferior cerebellar artery, and least often, the medullary arteries. [2] Usually, there is no weakness associated with this syndrome and so this condition is often misdiagnosed or missed. A careful neurological examination is key to the diagnosis. Dysphagia is the most prevailing

symptom of WS which accounts for about 51-94% of the patients experiencing varying degrees of difficulty in swallowing, which is accompanied by ipsilateral IX and X cranial nerve paralysis and diminished gag reflex resulted from nucleus ambiguus lesion. [3-4] In contrast, the recovery process from dysphagia in WS is rather slow and steady. Treatment focuses particularly on relieving symptoms and rehabilitation. The long-term outlook for Wallenberg syndrome depends on the size and location of the area of the brain that is damaged. Some people have improvement of symptoms within weeks or months, while others are left with significant neurological problems for years. [1] Here we present a WS patient who had moderate to severe dysphagia which has been treated with several swallowing maneuvers and postural adjustments for

enhancing effective swallow using swallowing therapy.

lateral medullary acute infarct). Currently he is under Nasogastric (NG) tube for swallowing. He was alert, his attention was observed to be good. Emotional status observed to be stable and he was able to discriminate different types of texture. Recall of past events and recall of current events are observed to be good.

CASE REPORT

A 73 year old, male came to the Department of Speech and Language for swallowing evaluation and therapy. He was diagnosed with Wallenberg syndrome (Left

Table 1:Radiological Findings

Tests	Findings
Computed Tomography scan	CT Scan was done on 18.08.2019 , which revealed B/L periventricular deep white mater small vessels ischaemia; B/L capsuloganglia small lacunar infarcts
Magnetic Resonance Imaging	Magnetic Resonance Imaging was done on 19.08.2019 which reveals Wallenberg syndrome (Left lateral medullary acute infarct).

Table 2:ENT Findings:

Tests	Pre therapy	Post therapy
JVideo Laryngoscopy	Video Laryngoscopy was done on 25.9.19 which reveals Left vocal cord palsy – oropharyngeal candidacy	Video Laryngoscopy was done on 25.11.19 which reveals left vocal cord palsy with fairly good compensation with right cord

Table : 3 Cranial Nerve Examination

Cranial Nerve	Findings
V Trigeminal	No weakness of jaw was observed or reported. Jaw movements Restricted.
VII Facial	Inadequate IOBP. Taste was reported to be Normal on the anterior 2/3 rd of the tongue.
IX Glossopharyngeal	Taste sensation was reduced at posterior 1/3 rd in the Right side.
X Vagus	Gag reflex – Absent Loudness range -Restricted
XII Hypoglossal	Reduced tongue strength Elevation, lateralization, retraction, protrusion – Inadequate

ORAL PERIPHERAL MECHANISAM EXAMINATION:

Table 4: Shows Oral Peripheral Mechanisam Examination.

Structure	Appearance	Function
Lips	Closed	Pursing and pressing Spreading – present Alternate motion – inadequate
Jaw	Symmetrical	Sufficient
Teeth	Normal	Biting and chewing – present
Tongue	Normal	Elevation, lateralization, retraction, protrusion – inadequate; licks lip with tongue; moves independently with jaw and sweeps palate; reduced tongue strength
Palate	Normal	Closure evidently complete
Uvula	Normal	-

SWALLOWING PROFILE PRE AND POST THERAPY :

Table : 5 shows the Subjective swallowing profile of Pre and Post therapy

	Pre therapy	Post therapy (after 10 therapy sessions)
Eating status scale:	Score 1 – Feeding tube only	Score 3 – oral >tube
Function severity score of Dysphagia using Dysphagia severity scale:	Score 4 – Occasional aspiration Possible aspiration/ aspiration is suspected due to much pharyngeal residue	Score 5 – oral problem Significant symptoms of oral preparatory or oral stage without aspiration
Food test:	Score 3 – Swallowed successfully with normal breathing but with cough and/or wet hoarse voice and/or moderate residue in oral cavity.	Score 5 – Swallowed successfully with normal breathing ,no cough ,no wet-hoarse voice , and almost no residue in oral cavity ,plus two or more additional dry swallows in 30s
Nair Hospital Swallowing Ability Scale:	Score-5 – Severe Dysphagia Severe difficulty in swallowing with weak audible and sometimes silent aspiration. Modification of consistency of food and use of manuevres required. Can tolerate 1/5 consistencies	Score-3 – Moderate dysphagia Moderate difficulty in swallowing with audible aspiration.if present Modification of consistency of food and use of manuevres required. Can tolerate 3/5 consistencies
Dry swallow test	-	He was able to swallow 3 to 4 times in 30 seconds
Repeated saliva swallow test	>3ml – in 30 seconds	>5ml –in 30 seconds
Modified water swallow test	Able to swallow but choking was present after few seconds	Swallowed successfully with no choking or wet hoarseness and 2 successful swallowing within 30 sec

Table : 6 shows the Objective swallowing profile of Pre and Post therapy

	Pre therapy	Post therapy
Barium swallow	Modified Barium Swallow was done on 04-10-2019 which revealed Aspiration into the trachea and left bronchus. So the procedure was abandoned	Modified Barium Swallow was done on 21-11-2019 which revealed food enters in to the stomach at the level of C ₃ , Pyriform fossa and vallecula structures was observed to be normal .

Goals worked on:

Appropriate breathing pattern for speech and swallowing was established, by using breathing exercises.

Active and passive muscle exercise were done to improve muscle strength

Chin-tuck, Masako manoeuvre and head position changing were given to improve the oral intake.

CONCLUSION

Wallenberg syndrome is a lifelong condition. Medical management is primary treatment for Wallenberg syndrome followed by Speech and Language Therapy. Rehabilitation goals will be varying based on the severity of Dysphagia. Swallowing Management helps to reorganize the impaired swallow.

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