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Case Report

A Single Case Study on Palatal Palsy

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ABSTRACT

Idiopathic soft palate paralysis is a rare disorder that affects children and occasionally in adults. Typical clinical features are sudden onset, rhinolalia, and nasal escape of fluids from the ipsilateral nostril. This paper focuses on a 48-year-old male who reported with the complaint of sudden change in voice quality for the past 1 month.VLS revealed Left Vocal Cord Palsy and detailed speech language evaluation revealed Hoarse voice secondary to Left Vocal Cord Palsy with observed deviation of the soft palate resulting in suspicion of a condition called isolated palatal palsy.

Key words: Isolated paralysis, vocal cord palsy, palatal palsy, idiopathic

INTRODUCTION

Idiopathic paralysis of the soft palate is usually observed in children; however, the cause of this condition in children has not been explained. [1,2] The etiology of the disorder is not known. The clinical features of three cases reported by Edin et al. [3] suggested an infectious etiology, but their attempts to ascertain this in their cases were unsuccessful. The authors concluded that a viral etiology seemed unlikely in the majority of cases. [1,4]

CASE REPORT

A 48- year old client came to the department with the complaint of change in voice for the past 1month and also reported of discomfort in swallowing solid foods. The clients concern of voice dominates swallowing difficulties. The client owns a medical shop and has a fair amount of voice usage per day (2 to 3 hours per day). Video laryngoscopic findings revealed that the client had Left Vocal Cord Palsy.

Detailed history on vocal and non-vocal habits were taken and it reveals, 2-3 hours of voice usage per day, intake of water is about 2 liter per day, frequent intake of coffee (3 cups per day), no intake of spicy and oily foods and no other significant vocal or non-vocal habits were reported.

Oral peripheral mechanism examination was done and articulators like jaw, tongue, teeth, lip, soft and hard palate were assessed based on the range of motion, symmetry, movement, seal, retraction, protrusion, color of the articulators and size. The results revealed normal structural and functional capability of jaw, teeth, lip and hard palate. Abnormal results were obtained in terms of soft palate, uvula and tongue. Symmetry at rest and movement of the soft palate was affected; uvula was deviated towards left; tremors were visualized on the tongue and slow movements were noticed when the client was given a task of lateral repetitive movements for tongue.

Vegetative skills like blowing, chewing, biting and swallowing were adequate. Inadequate Respiratory support for both speech and non-speech activities were observed and he was unable to co-ordinate between respiration and speech. Maximum phonation duration was reduced (/a/: 9 seconds; /i/:4 seconds; /u/: 3 seconds). The client was not able to perform the task for calculating s/z ratio.

Informal assessment of swallowing abilities revealed no difficulty in consuming semi- solids or liquids. But the client experience discomfort towards certain solid foods. Mild cough was reported to be present occasionally while swallowing.

Voice assessment was carried out both perceptually and acoustically. Results of these has been tabulated in table 1.Cranial nerve examination was administered and the observations were tabulated in Table 2.

Self-rating scales such as Voice Handicap Index (VHI) and Reflux Symptom Index (RSI) was administered. The domains in Voice Handicap Index includes Functional (26/40), physical (32/40) and emotional (07/40). The total score of 65/120 indicated severe handicap which is often seen in patients with vocal fold paralysis or severe vocal fold scarring. The score of RSI was 15 which was greater than 13 thus indicating significant reflux disease. Based on the following informal and formal assessments the client was diagnosed to have hoarse voice secondary to Left Vocal Cord Palsy.

Table 1. representing the perceptual and acoustic voice profile

Perceptual voice profile		**Acoustic voice profile**
Pitch	: Inappropriate	Acoustic analysis was done using Praat software which revealed type III signal due to high breathy component. Thus, the sample could not beassessed further.
Pitch variability	: Absent	
Pitch breaks	: Absent	
Pitch range	: Inadequate	
Loudness	: Inadequate	
Loudness variability	: Restricted	
Loudness range	: Restricted	
Voice breaks	: Present	
Endurance	: Poor	
Nasality	: Hyponasal	

Table 2. representing the results of cranial nerve examination

Cranial Nerve	**Findings**
Trigeminal nerve	**Motor**: clenching of jaws was present; side to side movement of jaws was present. **Sensory**: The client was able to feel different textures when presented with eyes closed.
Facial nerve	**Motor**: The client was able to wrinkle forehead. He was able to close eyes tightly against resistance and was able to puff cheeks adequately. **Sensory**: No facial deviations were noted.
Vagus nerve	The client has restricted elevation of soft palate. The uvula was deviated towards left.
Accessory nerve	The client was able to shrug shoulders and turn head against resistance
Hypoglossal nerve	**Motor**:The client has adequate movement of the tongue **Sensory**: Gag reflex was absent.
Impression	**Function deviation of vagus nerve is observed**

DISCUSSION

We consider that vagus is the most probable nerve affected in isolated palatal palsy conditions. The actual mode of involvement of vagus is not known but two mechanisms have been hypothesized: the viral mechanism and the vascular mechanism. [5] A post diphtheritic complication that is well documented is an infectious / post infectious cranial neuropathy seems likely as isolated palatopharyngeal palsy. The clinical features of diphtheria were not present in our patient and also. There have been sporadic reports of palatopharyngeal palsy in children following infection with herpes, varicella and hepatitis. [6] The second hypothesis has been proposed by Lapresle et al. [7] They demonstrated the existence of ischemia in the roots of the glosso-pharyngeal and vagus nerves. The cause of this ischemia is not known and viral infection induced vasculitis cannot be ruled out. Either of the fore mentioned scenarios would lead to lower motor neuron neuropathy manifesting as palatopharyngeal

incompetence. The higher incidence of the condition in childhood is possibly due to immature neural tissue that is rendered more susceptible than in adults. Other possibilities considered were Guillain-Barre syndrome, vascular insults, posterior fossa tumors, syringobulbia and inflammatory diseases affecting brainstem nuclei. Detailed pharyngeal and neurologic examination, MRI of the brain and upper cervical region were unremarkable. [1] The client aged 48 was diagnosed to have Left Vocal Cord Palsy with significant observations of palatal palsy. Also, the client reported to have swallowing issues in solid foods, but not in liquids or in semi-solids. Cranial nerve examination which was assessed informally showed absence of gag reflex and restricted movement of soft palate. This gives us an idea about involvement of vagus nerve in this condition. Informal and formal evaluation of voice (including acoustical evaluation) shows hoarse voice quality with increased breathy component. Though Isolated palatal paralysis is a rare condition in adults, this case co-exists with left vocal cord paralysis. Furthermore, neurological assessment is required as an evidence to support this condition.

CONCLUSION

A rare reported condition of isolated palatal paralysis is observed in patient with left vocal fold palsy which highlights the importance of oral peripheral mechanism examination and cranial nerve assessment even in cases of vocal fold paralysis. And on requirement can be referred for a detailed neurological examination but since the prognosis in the disorder is excellent with a high percentage of complete recovery, and reduced rate of recurrences [6] it is better for the physicians to avoid invasive tests. There is no specific treatment (oral glycerol and steroids) have been used in these cases and complete recovery has been reported even without any treatment. [8,9] Several other research reports suggest that initiation of recovery happens by 10th day and pharyngeal weakness reversals happens by 4-7 weeks without the use of steroids. [5,9] Future studies focusing on the therapeutic aspect of such conditions are desired, before a recommendation is made.

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