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Tapia syndrome after resection of tumor in the foramen magnum

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Introduction

Tapia syndrome manifests neurologic deficit caused by vagus nerve(CN X) and hypoglossal nerve (XII) damages. Very little has been reported about Tapia syndrome but it gets worse the life of quality of patient in Tapia syndrome because of dysphagia, dysphonia, and paresthesia on tongue Previous studies reported that patients with Tapia syndrome have been observed during rhinoplasty, mandibular, or odontoid bone fracture. . The CN X injury in patients with Tapia syndrome resulted from mainly recurrent laryngeal branch and rarely from superior laryngeal or pharyngeal branch. In this study we present a case of patient with Tapia syndrome is caused by superior laryngeal and recurrent laryngeal braches, simultaneously.

Case represent

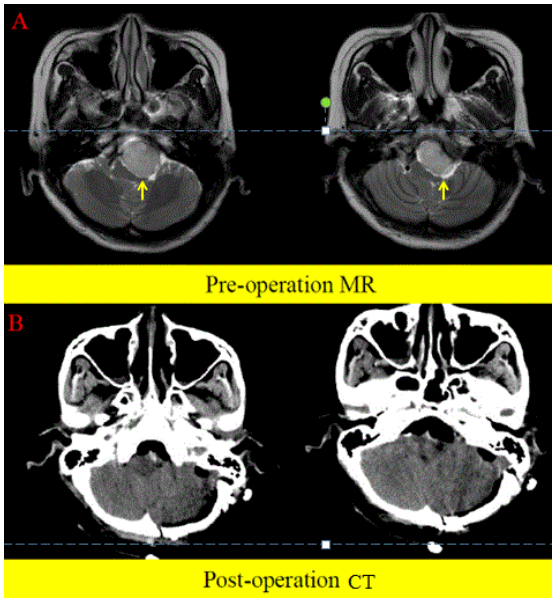
A 44 year old female without previous medical history except hypothyroidism visited a local hospital due to headache stated since early May 2018 and CT images of the brain showed mass like lesions. The patient was referred to the department of neurosurgery in our hospital. The brain MRI identified suspicious of meningioma in the foramen magnum and tumor resection operation was performed on late May 2018[Figure 1]. After an intubation was maintained for one day and the patient complained dysphagia and voice change. On neurological examination, we found atrophic change on right tongue but uvular deviation was not showed [Figure 2]. The laryngoscopic findings indicated that palsy of left vocal cord and hematoma on left arytenoid area. Approximately one month after the operation, the video-fluoroscopic swallowing study for the patient' dysphagia showed weakness on pharyngeal muscles and lowering laryngeal protection. She were not able to drink water and thin food. On electrophysiological finding identified showed abnormal spontaneous activities on right tongue. We gave him a diagnosis of superior laryngeal and recurrent laryngeal palsies of CN X on left side and CN XII on right side. Voice analysis of hoarseness has measured that habitual F0=291, jitter (%) = 0.48(<0.5), shimmer (%) = 4.96(<3.0), NNE=-5.60, HNR=14.78, hoarse voice=2, harsh voice=1, and breathy voice=3. One month after rehabilitation VFSS showed that there was reversal of pharyngeal muscle weakness and increased laryngeal protection. Additionally, voice analysis showed that habitual F0=297, jitter(%)=0.29, shimmer(%)=3.47, NNE(glottal noise energy)=-14.76(<-10.0), HNR(harmonics-to-noise ratio)=22.42, hoarse voice=1, harsh voice=1, and breathy voice=0. The reading prosody test showed 1 min 24 sec consumption and, although unstable voice quality change was observed, voice loudness has been improved to show possible smooth communication.

Conclusions

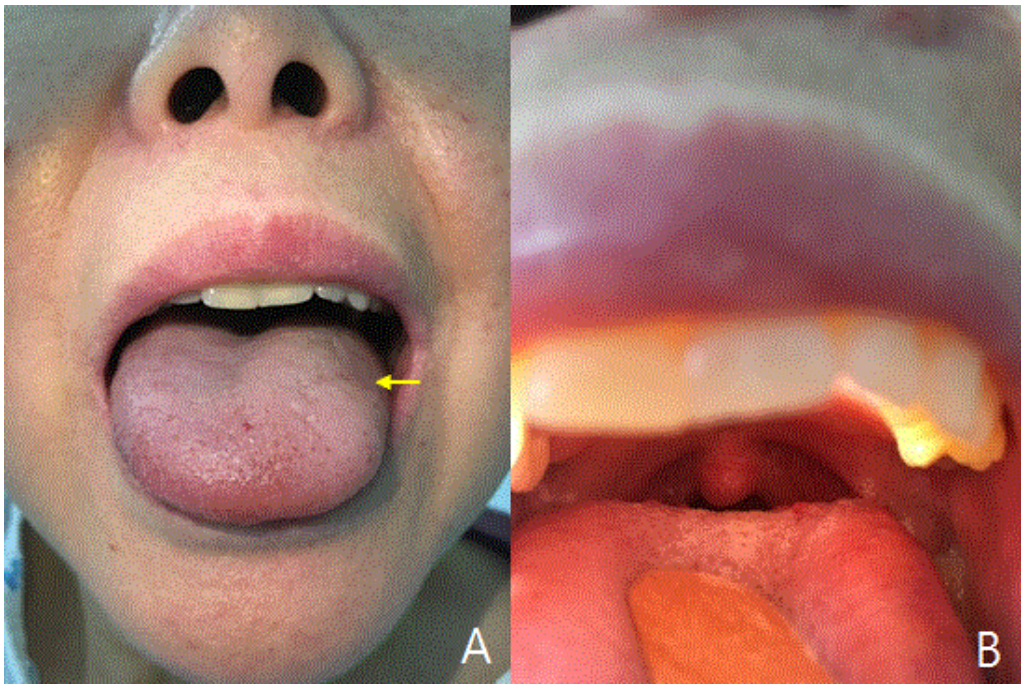
This case study was about the patient with Tapia syndrome after brain tumor resection on left medullary area. Distinguished from previous studies, we have been tracking the improvement of hoarseness and dysphagia serially using VFSS and, voice analysis.

Acknowledgment

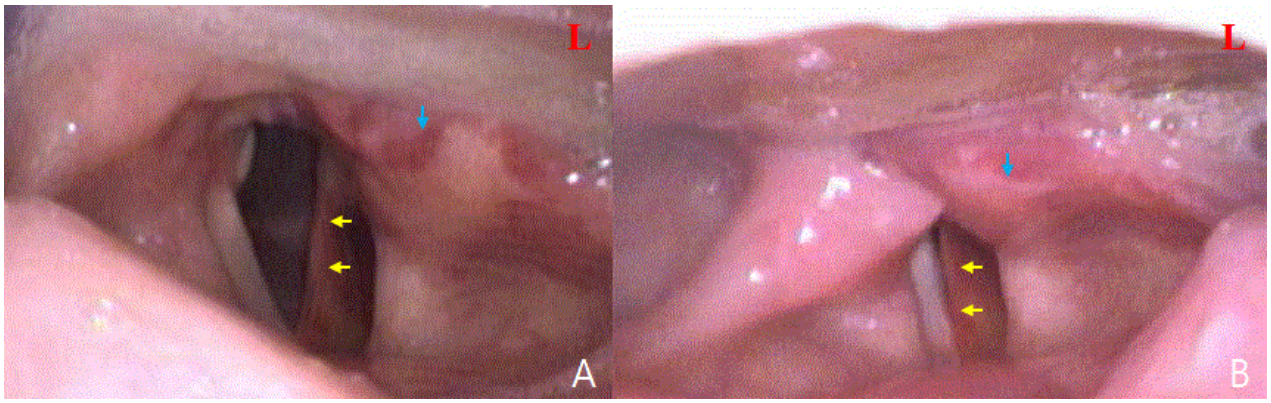
Supported by Basic Science Research Program through the National Research Foundation of Korea funded by the Ministry of Education (grant no. 2013R1A1A4A01013178)



Brain MRI showed suspicious of meningioma in the foramen magnum



. On neurologic examination, we found atrophic change (white arrow) on right tongue but uvular deviation was not showed



The laryngoscopic finding indicated that palsy of left vocal cord (yellow arrow) and hematoma on left arytenoid area (blue arrow).