

Case report : Decannulation in minimally conscious state due to brain hemorrhage patient

Jung Hyun Cha^{1*}, Yun Jung Lee^{1†}, Yong Kyun Kim¹, Kyun Yeon Lee¹

Myongji Hospital, Department of Rehabilitation Medicine¹

Introduction

For patients with a minimally conscious state (MCS) due to severe brain damage with an endotracheal tube, the timing of decannulation of the endotracheal tube is often delayed because of poor communication and self expectoration. This case is the successful decannulation of the endotracheal tube which has been inserted for 8 months through a respiratory rehabilitation program in MCS patients due to severe brain injury.

Case presentation

A 60-year-old male patient who had Lt. hemiplegia d/t Rt. parieto-temporal lobe ICH & IVH occurred on February 13, 2016, was hospitalized from October 25 to December 9, 2016 for comprehensive rehabilitation treatment. Other than diabetes, he had no history of hypertension, tuberculosis, hepatitis, and recurrent pneumonia. At the time of admission to our hospital, the patient was in MCS, so MMSE evaluation was not possible and CRS-R was 11 point : Auditory 2, Visual 4, Motor 2, Oromotor 1, Communication 0, Arousal 2. He had difficulty in self expectoration, but the peak cough flow was measured to be 230 L/min when coughing was induced using citric acid. On the 2nd day of hospitalization, we consulted otorhinolaryngology and started corking training after confirming that there was no finding of causing obstruction of the upper airway including Vocal cord palsy and Subglottic obstruction. After that, we continued corking training until corking was successful for 72 hours and, on November 4, 2016, decannulation was performed in cooperation with otolaryngology. During the following hospitalization period, decannulation was maintained well without complications. There was no respiratory complications such as pneumonia until he was re-hospitalized 3 months later.

Conclusion

This patient had endotracheal tube for more than 8 months and never attempted decannulation. After administration to our hospital, decannulation was performed and we educated caregiver to prevent complications. Oral suction was carried out 2 ~ 3 times a day to manage the airway secretion of the patient. When he was coughing, assist cough was performed to induce smooth sputum expectoration. In addition, we performed lung capacity training 3 times a day through a cough machine to help with sputum expectoration. Oral hygiene management for infection prevention was conducted more than 4 times a day with hexamedine. These training made it possible for the patient to remain well without pneumonia and O2 saturation decline. Generally, in case of severe brain damage with low consciousness level or severe cognitive decline, the decannulation time of the endotracheal tube is often delayed. This is because many clinicians are worried that the airway management can be difficult after decannulation. Even in this

case, however, active respiratory rehabilitation with caregiver education and training for the management of airway secretions can move up the decannulation time and therefore, the quality of life is expected to be improved.