Medical Management of Laryngeal Myoclonus Following Anoxic Brain Injury: A Case Report

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CASE DESCRIPTION

A 35-year-old male no past medical history presented to the emergency department for syncope. CT angiogram revealed bilateral pulmonary emboli complicated by cardiac arrest with resuscitation after 8 minutes resulting in an anoxic brain injury. Upon admission to rehabilitation, he was dependent for functional mobility, ADLs, and management of secretions secondary to myoclonus of bilateral upper extremities and larynx. He demonstrated aspiration with MBS due to laryngeal myoclonus, confirmed by laryngoscopy. He was initially on Baclofen 15mg three times a day (TID), valproic acid 1500mg TID, clonazepam 2mg TID, and topiramate 25mg two times a day, with no improvement in laryngeal myoclonus. After increasing clonazepam to 3mg TID, the patient was able to cough pulmonary secretions, phonated with a passy-muir speech valve, and tolerated an oral diet. The patient did not show any side effects with titration of clonazepam.

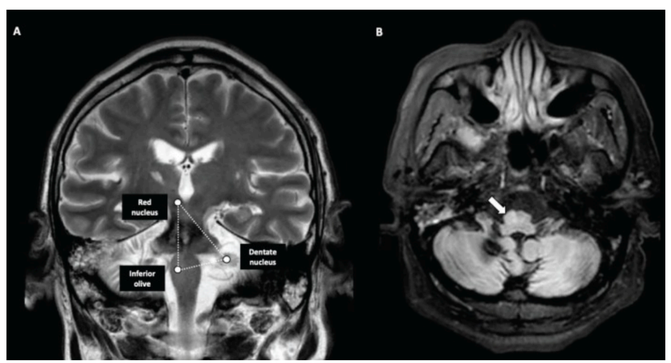

Figure 1. Example MRI of anoxic lesion within the guillain mollaret triangle causing laryngeal myoclonus[1]

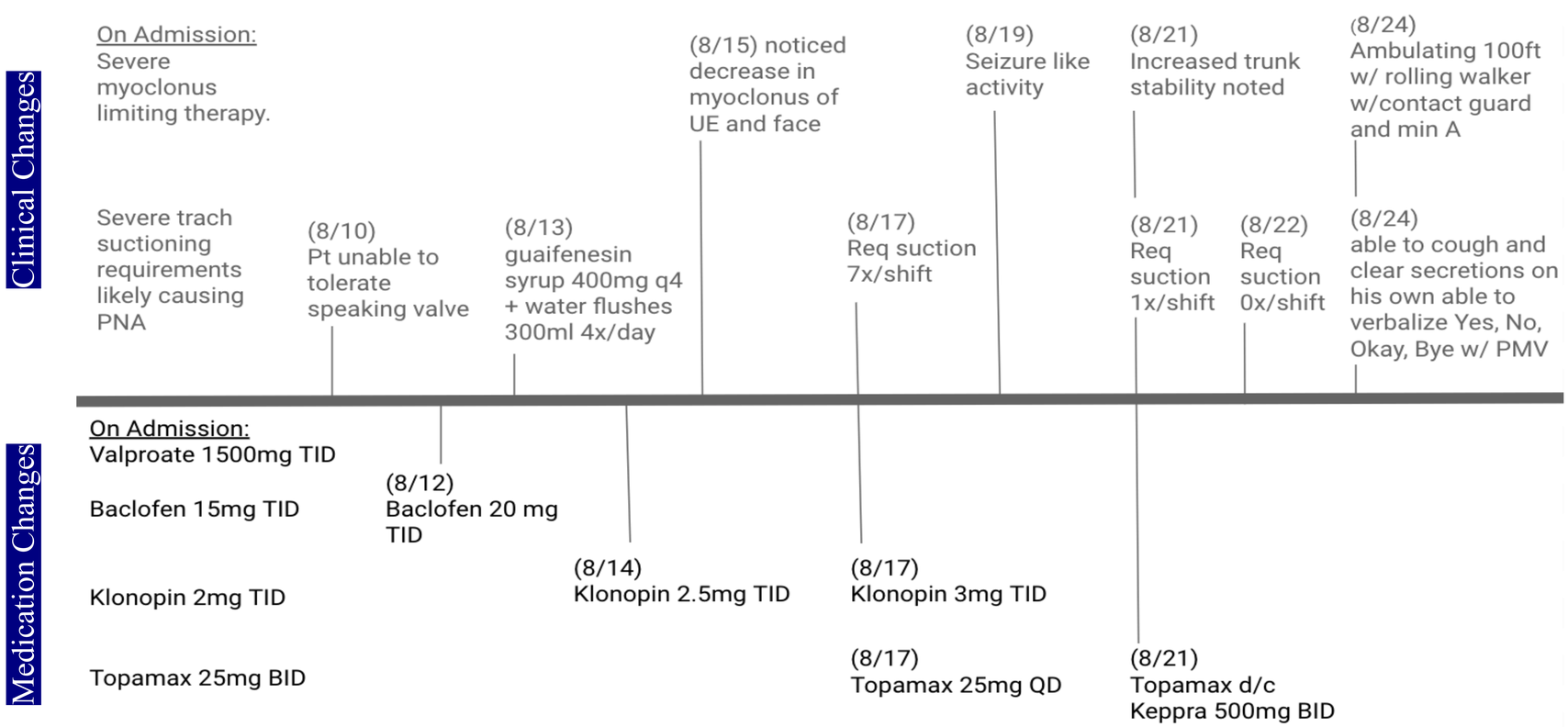

Figure 2. Clinical Timeline noting medication changes alongside patient's clinical response

DISCUSSION

Laryngeal myoclonus is a type of subsegmental brainstem myoclonus thought to be due to a lesion in the guillain mollaret triangle between the red nucleus, olivary nucleus and dentate nucleus including the central tegmental tract. This leads to dysfunction of the levator veli palatini and persists during sleep.[2] There is a paucity of literature describing the management of laryngeal myoclonus. Multiple case reports have demonstrated efficacy with valproic acid, keppra, and clonazepam for cortical myoclonus.[3] Specifically, for subcortical and segmental myoclonus, clonazepam has been used most widely with doses up to 15mg per day.[4] Clonazepam enhances GABAergic neurotransmission via benzodiazepine receptors. It is hypothesized that it may be a superior treatment option for non-cortical myoclonus since benzodiazepine receptors are present in both cortical and non-cortical regions.[5]

CONCLUSION

Clonazepam may be a good option for management of laryngeal myoclonus. Dose-dependent improvement in laryngeal myoclonus may be seen and high doses of clonazepam may be required. It is important for rehabilitation clinicians to be aware of this treatment option and to closely monitor these patients while at an inpatient rehabilitation facility. This case highlights the positive effects of high dose clonazepam use in the treatment of myoclonus. Despite possible side effects of decreased arousal, there should be a low threshold for utilizing higher doses in this patient population with careful monitoring.

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