

0802**CENTRAL SLEEP APNEA AS A RESULT OF CEREBRAL CAVERNOUS MALFORMATION HEMORRHAGE IN THE PEDIATRIC POPULATION***Joshua Bowling¹, Fauziya Hassan²*

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Introduction: Cerebral cavernous malformations (CCMs) consist of a collection of capillaries in the central nervous system (CNS) that are enlarged and irregular in structure. Patients with CCMs are at increased risk of hemorrhage into the brain or spinal cord, resulting in seizures, focal neurologic deficits, hydrocephalus, and death. Given the importance of the brainstem and central chemoreceptors in regulating respiratory function, rupture of CCMs can also lead to dysregulation of breathing. We present a series of 3 pediatric patients who have a diagnosis of central sleep apnea (CSA) due to rupture of CCMs managed with home ventilators with significant differences in clinical presentation from mild CSA to night time respiratory support for severe CSA and chronic respiratory failure requiring continuous mechanical ventilation.

Report of Cases: Subject 1 is a 13 yo M with a history of ruptured posterior fossa arteriovenous malformation (AVM) complicated by post-hemorrhagic hydrocephalus, right hemiparesis and severe central apnea requiring nighttime mechanical ventilation via tracheostomy. Subject 2 is a 19 yo M with a history of mid-pontine cavernoma with multiple episodes of hemorrhage failing surgical resection resulting in right hemiparesis, severe central apnea and hypoventilation requiring continuous mechanical ventilator support via tracheostomy. Subject 3 is a 6 yo F with a history of thoracic cavernous hemangioma resulting in spinal cord injury and mild central sleep apnea requiring mask ventilation via home ventilator during sleep. All of these patients experienced loss of respiratory drive as a result of complications from brainstem or spinal cord lesions with varying degrees of ventilator support requirement and clinical presentation.

Conclusion: Due to the propensity for CNS bleeds among patients with CCM they are at increased risk of respiratory compromise. Home ventilator support can be used effectively to treat central apneas and chronic respiratory failure but this is a moving paradigm as subsequent bleeds worsen respiratory compromise.

Support (If Any): Support (if any):

0803**EXTREME UPPER EXTREMITY MOVEMENTS IN PATIENT WITH NARCOLEPSY TYPE 1 AND REM SLEEP BEHAVIOR DISORDER AFFECTING ACTIGRAPHY RESULTS.***Jack Galagan¹, Carla York¹, Rodolfo Soca¹*

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Introduction: Narcolepsy with Cataplexy is a central disorder of hypersomnia that is characterized by excessive daytime sleepiness and Rapid eye movement (REM) dissociation phenomena. A common manifestation of narcolepsy is REM behavioral disorder (RBD), a parasomnia characterized by loss of muscle atonia during REM sleep (RSWA). While RBD is relatively common in patients with narcolepsy, very extreme movements are considered rare.

Report of Cases: A 20-year-old male with no significant past medical history presented with 8 months of new onset daytime sleepiness, sleep paralysis, and auditory hallucinations at sleep onset. After initial evaluation at our sleep center, he was scheduled for actigraphy testing and sleep logs, followed by video polysomnogram and mean sleep latency testing (MSLT). Initial PSG results were notable for a total sleep time of 498 minutes, a normal apnea-hypopnea index of 0.7/hr., sleep onset latency of 0 minutes, and REM latency of 0 minutes. Based upon military medical standards, the MSLT scheduled for the following morning was cancelled due to limited sleep during the preceding 2 weeks as measured via actigraphy. However, the patient's sleep logs reported over 7.5 hours of sleep per night. The patient's video PSG was reviewed, which showed evidence of frank RSWA, as well as episodes of dream enactment behavior during REM sleep, all including very violent movement in his upper extremities. Repeat trial of MSLT 2 weeks later showed mean sleep latency of 1.7 minutes, with 5 sleep onset REM periods (SOREMPS), and evidence of dream enactment involving the upper extremities during 3 of these SOREMPS.

Conclusion: We present the case of a patient with narcolepsy and RBD with significant upper extremity movements to the point of affecting the actigraphy sleep/wake detection algorithm. Actigraphy has been validated as a diagnostic tool in assessing sleep and wake patterns in individuals without significant REM sleep dissociation phenomena; however, our case highlights the necessity of further research of the validity of actigraphy in patients with Narcolepsy and/or REM behavioral disorder.

Support (If Any):

0804**ENHANCED DRUG-INDUCED SLEEP ENDOSCOPY: DISTINGUISHING CENTRAL FROM OBSTRUCTIVE APNEAS***Crystal Cheong¹, Alan Schwartz², Everett Seay², Jorge Mora¹, Erica Thaler², Raj Dedhia²*

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Introduction: Drug-induced sleep endoscopy (DISE) is a useful tool for assessing upper airway collapse in patients with obstructive sleep apnea (OSA) and frequently influences surgical plans. The standard DISE setup of an endoscopic tower with flexible bronchoscope is adequate for visualizing collapse configurations, but endoscopic findings do not always correlate with actual respiratory physiology. We describe our enhanced clinical DISE setup incorporating nasal flow and respiratory effort measurements, which facilitates differentiation between central and obstructive events. Central sleep apnea was detected in two patients who were originally diagnosed with OSA and underwent DISE during hypoglossal nerve stimulation candidacy workup.

Report of Cases: Case 1 is a 58-year-old male with cardiomyopathy, atrial fibrillation and congestive heart failure who was diagnosed with moderate OSA on a home sleep apnea test. He was PAP intolerant due to claustrophobia. DISE during baseline breathing revealed complete anteroposterior collapse at the palate, tongue base and epiglottis. However, central apneas with Cheyne-Stokes breathing were noticed when positive airway pressure (PAP) was applied. A subsequent polysomnogram revealed severe sleep apnea which was primarily central in nature with Cheyne-Stokes breathing and OSA. He declined retrying PAP and opted