Preface

Overview of Central Sleep Apnea

The condition of central sleep apnea (CSA) was first noted by two physicians in the 1800s. John Cheyne, from Great Britain, and William Stokes, who was schooled in Ireland, first described what later came to be known as Cheyne-Stokes Respiration. They were more interested in heart disease and simply observed the phenomena as a cardiac problem. We have come a long way since and there are eleven articles herein that focus in some detail on a particularly pertinent set of issues regarding CSA, beginning with this overview. The reader will notice some redundancy in the articles, which were retained for emphasis and further clarity. It is hoped that a better insight into many aspects of CSA will be appreciated and new questions might be generated by our efforts.

We begin with the article, “International Classification of Sleep Disorders-2 (ICSD-2) and American Academy of Sleep Medicine (AASM) Practice Parameters,” which is a summary of the main aspects of the different central sleep apnea syndromes (CSAS) as organized in the ICSD-2. This is further enhanced with a discussion of the general management of the different CSAS in adults as presented in the current recommendations from the AASM Practice Parameters.

The next article, “Cheyne-Stokes Respiration,” describes CSA due to Cheyne-Stokes respiration in detail. There is thoughtful commentary on the pathophysiology and mechanisms that generate and perpetuate CSAS. A focus on the optimal treatment of the underlying heart failure is emphasized. The article, “Central Sleep Apnea and Cardiovascular Disease” that follows extends this further to give insight into the associated CSA and cardiovascular disease, again focusing on the treatment of the underlying disorder.

We continue with reports of other forms of CSA with the now more widely recognized and accepted complex sleep apnea syndrome (CompSAS). The article entitled, “Complex Sleep Apnea (CompSAS),” reveals the controversy and the data supporting this disorder, why it should be considered a unique clinical problem, and how it is best treated.

With the urge to relieve pain and suffering in the medical community, there has been a surge in the use of opioids resulting in the well-known associated central apnea condition that often results. The article that investigates this disorder, “Opioids-induced Central Sleep Apnea: Mechanisms and Therapies,” gives a discerning review of the sleep-disordered breathing problem that develops in these patients, which is a variant of the CompSAS pattern described in the previous article.

For comprehensive purposes, we added an additional article, “Central Sleep Apnea Due To Other Medical Disorders,” discussing the other miscellaneous types of CSA addressing the medical disorders that provoke this, such as brain tumors, Chiari type I malformation, stroke, and a range of endocrine, hormonal, neurodegenerative, and neuromuscular diseases.

We move next to treatment methods with the mainstay treatment now being the adaptive servo-ventilator and the article, “Adaptive
Servo-Ventilation,” defines the rationale and function of this device and the evidence supporting its application in these disorders. The following article, “Alternative Approaches to Treatment of Central Sleep Apnea,” gives discourse regarding innovative alternatives to the treatment of resistant or intolerant patients to adaptive servo-ventilation with CSA syndromes, which also conveys a better understanding of the condition and its need for further study.

We finish with an unfamiliar topic to most clinicians caring for adult patients. They should still be aware of childhood and younger related sleep-disordered breathing problems, especially as some may grow into adulthood. The final articles, “Central Hypoventilation Syndromes in Children” and “Central Sleep Apnea in Infants,” should be of particular interest for those unfamiliar with this topic or inquisitive for board review purposes.

All articles contain keyword search phrases and a synopsis for easy reading. The references are extensive and up–to-date. We accept that many busy clinicians are in need of state-of-the-art knowledge and treatment recommendations in an easily accessible way, which was the primary goal of our efforts. Enjoy.

Peter C. Gay, MD
Mayo Clinic Rochester
Mayo Center for Sleep Medicine
Rochester, MN 55905, USA
E-mail address: pgay@mayo.edu

REFERENCES

1. Cheyne J. A case of apoplexy in which the fleshy part of the heart was converted into fat. Dublin Hospital Reports 1818:2:216–23 [Reprinted in Willius FA, Keys TE. Cardiac Classics. 1941. p. 317–320.].