



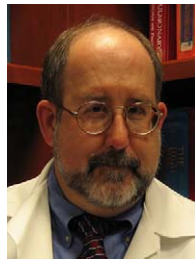
ELSEVIER
SAUNDERS

Anesthesiology Clin N Am
23 (2005) xiii–xv

ANESTHESIOLOGY
CLINICS OF
NORTH AMERICA

Preface

Obesity and Sleep Apnea



Peter Rock, MD, MBA, FCCP, FCCM
Guest Editor

Obesity in America has been referred to as a new epidemic. Its incidence is increasing, as are the number of patients that are morbidly obese. Obstructive sleep apnea (OSA) also is being recognized and diagnosed with increasing frequency. In some subsets of the population, OSA is as prevalent as a chronic disease such as asthma. Obesity is a risk factor for OSA. These two conditions, obesity and OSA, pose significant challenges for anesthesiologists and other health care providers engaged in the care of surgical patients. This issue of the *Anesthesiology Clinics of North America* is devoted to aspects of perioperative care of individuals with obesity and OSA.

In “Definitions and Demographics of Obesity: Diagnosis and Risk Factors,” Susan Polk discusses the epidemiology of obesity. She documents the alarming increase in obesity and morbid obesity as well as interesting geographic associations. There are important racial and ethnic differences in the prevalence of obesity in the United States. The number of children who have obesity is also increasing, and Dr. Polk covers issues related to this disturbing trend. Obesity has important economic and societal implications that are detailed in this article, especially those that impact public health. Drs. Stierer and Punjabi comprehensively review the “Demographics and Diagnosis of Obstructive Sleep Apnea.” This article saliently reviews terminology used in individuals with OSA as well as diagnostic tests and results that may be encountered when caring for patients

who have this disorder. The prevalence of OSA is described, including insight into how the definition of diagnostic abnormalities influences the incidence of disease. Risk factors for OSA are described which are important as the peri-operative caregiver may be the first to suspect or even diagnose the presence of OSA. Understanding risk factors for OSA is the first step in diagnosis.

Ken Kuchta reviews the “Pathophysiologic Changes of Obesity.” In this article, the effect of obesity on cardiovascular disease is documented. Kuchta carefully reviews the metabolic syndrome: an important new concept relating obesity, dyslipidemia, hypertension and impaired glucose regulation. The role of leptin in obesity and mediators linked to adipose tissue are also reviewed. Obesity can significantly impact the respiratory system, which is covered here as well. The “Pathophysiology of Obstructive Sleep Apnea” is covered by Pashayan, Passannante, and Rock. In this review, the authors describe the location and cause of airway obstruction. Important nonanatomic contributors to OSA are also reviewed. Signs and symptoms of OSA are categorized. There are other diseases associated with OSA, and their recognition is important, because they may be the first clue to the presence of OSA.

Avery Tung reviews the “Biology and Genetics of Obesity and Obstructive Sleep Apnea.” As might be expected, there is a wealth of emerging information about the biology of these disorders. Genetic variability appears to play a key role in the development of OSA. Understanding genetic factors might allow improved screening for the disease as well as identify factors that result in either worse or better outcomes after surgery. The genetic interaction between obesity and OSA is also reviewed with emphasis on craniofacial abnormalities, ventilatory control, and sleep regulation. The “Preoperative Evaluation of Patients with Obesity and Obstructive Sleep Apnea” is reviewed by Rafael Cartagena. Risk assessment in these populations is reviewed. Clearly, airway assessment is especially important in these populations and is covered in detail. Cardiopulmonary assessment is also reviewed in the setting of obesity and OSA. Identification of the patient at risk for OSA is reviewed, as are interventions and treatments that may reduce risk in these patients.

The “Anesthetic Management of Patients with Obesity and Sleep Apnea” is covered by Passannante and Rock. The authors review the pharmacokinetics of drugs in obese patients. Positioning obese patients may be problematic and may lead to complications, and this topic is reviewed in detail. Regional anesthesia and monitoring needs for obese patients are also covered. Patients with OSA have unique anesthetic considerations covered in this section as well, such as the effect of anesthetic drugs on ventilatory responses and type of appropriate monitoring. Bell and Rosenbaum review “Postoperative Considerations for Patients with Obesity and Sleep Apnea.” Individuals who have these conditions require special care after surgery, and the authors review the implications of obesity and OSA for the postoperative period. The important issue of postoperative monitoring and the need for special observation is discussed. Pain management takes on additional importance in these patients, and the authors detail special considerations for analgesia under these conditions.

Because obese patients may present to the operating room for surgery to treat their obesity, it is important to understand these procedures. Drs. Neligan and Williams review “Nonsurgical and Surgical Treatment of Obesity.” Nonsurgical management of obesity is reviewed, including pharmacologic measures that have anesthetic implications. Surgical treatment measures are covered in detail. Perioperative management of individuals undergoing bariatric surgery is comprehensively reviewed. Outcomes, complications, and long-term follow-up after obesity surgery are covered as well. The article concludes with the future of treatments for obesity. Given the increased occurrence of OSA in the population, and its significant impact on health, treatment of this condition has become increasingly important, covered by Drs. Couch and Senior in “Nonsurgical and Surgical Treatments for Sleep Apnea.” Medical management of OSA is reviewed, including positive airway pressure and oral appliances. Surgical treatment options are discussed. New advances in minimally invasive procedures are discussed, as are future areas of research and possible treatments. The article concludes with a review of perioperative issues specific to OSA surgery.

Children may develop OSA and are a special group of patients. Bandla, Brooks, Trimarchi, and Helfaer review “Obstructive Sleep Apnea Syndrome in Children.” The differences between the presentation, pathophysiology, and treatment in adults and children are documented. Perioperative management considerations in children with OSA are reviewed, as are anesthetic considerations. Postoperative care issues are covered in detail, as is pain management in this special group of patients. Finally, the natural history and prognosis of children with OSA is discussed.

Our final article covers “The Rapid Sequence Induction Revisited: The Obese Patient and Sleep Apnea Syndrome,” authored by Eugene Fried. Obese patients may be considered at risk for pulmonary aspiration of gastric contents, thus rapid sequence induction may be employed in these patients. Whether these patients really are at increased risk is discussed, as are the benefits and potential risks of rapid sequence induction and application of cricoid pressure. The evidence underlying the effectiveness of these maneuvers is also reviewed.

This issue of the *Anesthesiology Clinics of North America* comprehensively covers a variety of topics relevant to the perioperative management of patients with obesity and OSA. It should prove a valuable resource for those who care for such patients.

Peter Rock, MD, MBA, FCCP, FCCM
Department of Anesthesiology
University of North Carolina School of Medicine
N2201, CB# 7010
Chapel Hill, NC 27599-7010, USA
E-mail address: prock@aims.unc.edu