

Abstract

The role of anesthesiologists is to ensure preoperational care for patients scheduled for surgery is managed correctly. However, their duty does not stop there because they have to deal with other issues to ensure the patient gets the best care and can recover well. The psychological preparation of the patient and counseling any family members for any given anxiety on the possible outcome of the procedure, the quality of life the patient can lead are among the many roles these crucial parts of the surgical procedure must do. While a patient is undergoing surgery, several comorbid conditions are commonly found, known as endocrine diseases. These diseases have an impact on the anesthetic and perioperative management of the patient. The most common endocrine system condition is diabetes mellitus, with 20% of surgical patients being reported to have it. Anesthesiologists must familiarize themselves with the underlying conditions of their patients as this guides on the necessary steps that need to be taken while in surgery and plan for any unprecedented occurrences. A diabetic patient would be advised not to take any oral glucose medication on the morning of surgery to prevent the reaction between anesthetics and these drugs. Other endocrine system disorders commonly seen in surgical preparation are thyroid gland disease, obesity, adrenocortical disease, pheochromocytoma, and anterior and posterior gland disease. The knowledge of these conditions helps in making the optimal decision about the type of anesthetic to use, among other crucial decisions that determine the difference between life and death. This article review discusses the perioperative management of endocrine system disorders during the preoperational period and its significance in anesthesiology.

Diseases

Conditions	Symptoms
Diabetes	Perioperative nerve injuries, stiffness in joints resulting into difficult ventilation/intubation
Hypothyroid	Hypothyroidism has been reported to be present in only 5% of the patients and 13% of elderly patients and possible hypoventilation
Hyperthyroid	Tremors, vasodilation, diarrhea
Pheochromocytoma	This disease causes hypertension in less than 0.1% of patients. Yet, when it is diagnosed, 16% of the confirmed cases will also have other associated conditions.
Obesity	Hypersensitivity to respiratory depressant drugs, obesity-hypoventilation syndrome, Pulmonary HTN

Discussion

Endocrine system conditions have a direct influence on the anesthesiologist and their ability to perform their tasks successfully. These conditions impact the patient's reaction to the anesthesia given and determine the type and when it can be given to improve patient outcomes. Therefore, there is a need for perioperative management of the patient's condition and proper planning before the surgery. Some of the common endocrine disorders encountered by anesthesiologists include: diabetes, hyperthyroid disease, hypothyroid disease, adrenal insufficiency, pheochromocytoma, and obesity.

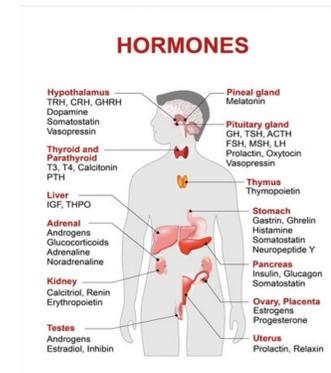
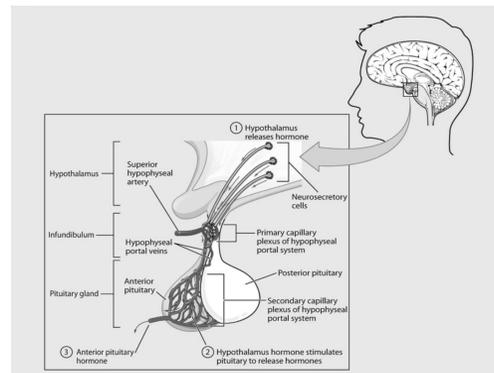
Conclusion

Endocrine systems are the hormone systems in all mammals made up of glands, hormones, and receptors for the various body organs. Endocrine system disorders affect the outcome of the surgical procedure; thus, anesthesiologists must be very keen in preoperational evaluations and assessments to ensure that all underlying conditions have been factored in. This allows them to plan for unknown outcomes and manage the procedures well. The most common endocrine system disorder is diabetes mellitus, where the majority patient population undergoing surgery has recoded having it. This disorder leads to cervical spine and temporomandibular joint mobility issues, making it very difficult to do manual intubation on the patient. Another condition is obesity which leads to the stiffening of the tracheal muscles, which introduces an issue during ventilation. Other conditions include hyper and hypothyroidism, which need to be managed using medication. Still, the anesthesiologist should be aware of what anesthetics to avoid to prevent the drug to drug interactions. Proper optimization and assessment of the patient before surgical procedures can help improve patient outcomes and save numerous lives in the process.

Introduction

The endocrine system is made of glands that produce hormones that regulate metabolism, tissue function, growth, sleep, sexual function, mood, and reproduction (Dönmez, Pejakov, & Enes, 2017). The organs making up the endocrine system include the adrenal glands, thyroid glands, pituitary glands, ovaries, parathyroid glands, testicles, and the pancreas. The common knowledge is that the endocrine system affects close to all the organs and cells in the human body. Endocrine system illnesses result from extremely high or low hormone levels or the deficiency of responsive hormones. Conversely, hormone levels can be affected by infections, stress, electrolyte imbalance, and fluid imbalances in the body. Hormone overproduction or underproduction can have dramatic physiological or pharmacological consequences (Buggy, 2011). Thus, endocrine organs hypofunctioning or hyperfunctioning affect anesthetic management. Therefore, anesthesiologists have a high probability of meeting several endocrine complications in their practice.

Physiology of the Endocrine System



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