Summary

This chapter describes the perioperative management of the patient undergoing surgery for pituitary disease, including preoperative and postoperative endocrine evaluation. The management of metabolic and endocrine abnormalities resulting from the surgery is described.

Key Words: Transsphenoidal surgery, SIADH, DI.

1. INTRODUCTION

Proper evaluation and therapy of a patient with suspected or established pituitary pathology requires joint involvement of several subspecialists. A dedicated pituitary endocrinologist and a dedicated pituitary neurosurgeon constitute the backbone of such a team. Multidisciplinary pituitary clinics in which patients are seen at the same time by both specialists are becoming more widespread in large academic medical centers. The advantage of such collaboration is obvious: both the neurological and the hormonal status of...
the patient are assessed simultaneously, all pertinent information is immediately integrated, and treatment options are identified and presented to the patient. The same applies to the postoperative evaluation of the patient, when questions regarding the need for hormone replacement, long-term medical therapy, radiation therapy, or repeat surgery can be addressed and a treatment plan established.

In this chapter, we discuss the issues arising during the perioperative period that starts at the time of the first visit of the patient to the clinic and lasts at least until the patient’s care is ready to be transferred back to his or her referring physician.

2. PRE-OPERATIVE AND POST-OPERATIVE ASSESSMENT AND MANAGEMENT

When a patient presents with a sellar mass, several interrelated questions need to be answered:

1. What is the likely nature of the mass?
2. Is there any compression (mass) effect?
3. Which, if any, hormone is overproduced?
4. Which, if any, hormone is lacking?

The answers to these questions will permit the physician to chart a rational therapeutic plan.

2.1. Question 1: What Is the Likely Nature of the Mass?

The list of potential sellar lesions is long and includes neoplastic processes, infiltrative/inflammatory processes, infections, and developmental malformations, as well as many other rare lesions.

From the practical point of view, the great majority of sellar lesions are likely to fall into a much tighter group consisting of pituitary adenomas, craniopharyngiomas/cysts, and meningiomas.

Examination of both precontrast and postcontrast T1 images as well as T2 images of a high-quality MRI is needed to correctly identify the nature of the lesion.

2.1.1. T1 Before Contrast

Solid tumors are, as a rule, isointense on precontrast T1 images. Bright areas on T1 images are due to the presence of either fat or blood. This may indicate the presence of fat tissue per se (inserted surgically to prevent CSF leak), high-cholesterol fluid in craniopharyngiomas, or hemorrhage within the tumor itself. A “bright spot” in the posterior part of the pituitary is normal and represents a healthy posterior lobe. The same spot located very high and accompanied by the “empty sella” may indicate congenital hypoplasia of the anterior pituitary.