In retrospect our method of inducing anesthesia with thiopental and succinylcholine might not have been the ideal. However, the degree of splinting from the pneumoperitoneum and thus the difficulty in ventilating the patient was not anticipated. The patient was restless, mentally retarded, obese, and dyspneic, though not cyanosed at this time. Both inhalation induction and awake endotracheal intubation were considered and rejected as being too difficult and time consuming. Paralysis with rapid intubation of the trachea was the immediate goal and did, in fact, allow immediate surgical intervention.

If pneumoperitoneum is suspected, endotracheal intubation, awake or asleep, without prior artificial ventilation is indicated. If there is respiratory embar-

rassment in association with pneumoperitoneum, abdominal decompression by trocar and cannula should be performed before induction of anesthesia.

REFERENCES


Intraocular Pressure after Transurethral Prostatic Surgery

K. REED PETERS, M.D.,* JESSE MUIR, M.D.,† DANIEL W. WINGARD, M.D.‡

A problem associated with transurethral resection of the prostate gland (TUR P) is acute water intoxication. Visual disturbances have been attributed to cerebral edema resulting from this. These latter cases involved one patient with blurred vision, another seeing only a faint glow, and another who thought he was going blind. No intraocular pressure (IOP) measurements were made in these three cases.

Two patients recently complained of transient blindness following TUR P at the University of Nebraska Medical Center. This blindness resolved with correction of the hyponatremia.

We questioned whether transient blindness might be due to an increase in IOP from water absorption rather than cerebral edema. The purpose of this investigation was to study changes in IOP that may be related to the absorption of the non-electrolyte irrigating fluid employed in patients undergoing TUR P.

MATERIALS AND METHODS

Twenty-two patients between the ages of 54 and 81 years (mean age: 67) were scheduled for a TUR P. Approval for the study was granted by the Committee on Human Investigation at the University of Nebraska Medical Center. Preoperative informed consent was obtained from each patient.

Preoperative serum electrolyte determinations (Na⁺, K⁺, Cl⁻, pH, CO₂) were obtained. Pre- and postoperative visual acuity was examined with a Rosenthal pocket vision screener. Drug histories were obtained to note any drugs which might change the patient's IOP. None of the patients were premedicated.

Seven of the twenty-two patients had general anesthesia. No muscle relaxants were used. Two were anesthetized with thiopental/narcotic/N₂O/O₂ technique, three with halothane/N₂O/O₂ and one with enflurane/N₂O/O₂. The remaining patients received subarachnoid or epidural block. Schiøtz tonometry was performed bilaterally approximately 20 min after induction of general anesthesia and after fixation of the block in patients with conduction anesthesia.

Intravenous fluid therapy consisted of 5 per cent

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Table I. Intraocular Pressure Changes Associated with Serum Na⁺ Changes

<table>
<thead>
<tr>
<th>Patient</th>
<th>Anesthetic</th>
<th>Preoperative Na⁺ (mEq/l)</th>
<th>Postoperative Na⁺ (mEq/l)</th>
<th>Preoperative IOP (torr)</th>
<th>Postoperative IOP (torr)</th>
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</tr>
<tr>
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<td>134</td>
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**Results**

Two of the patients (patients 1 and 2, table 1) had a history of open angle glaucoma and were being treated with timolol maleate eye drops (a beta-blocker used to lower IOP). These were the only patients who complained of visual disturbances after TUR P. Visual acuity changed from 20/400 to 20/800 in patient 1 and from 20/20 to a level greater than 20/800 in patient 2. This latter subject had a sensation of blurry vision immediately postresection. The remaining patients had no change in visual acuity, although eleven patients had a drop in serum Na⁺ greater than 10 mEq/l.

Decreases in serum Na⁺ of 14 mEq/l or more in this study were associated with the typical symptoms of water intoxication: somnolence, restlessness and confusion. Patient 2 convulsed in the recovery room.

There were no significant changes in IOP of the left eye alone, the right eye alone, or the average of both eyes with changes in serum Na⁺.

**Discussion**

The measurement of IOP should take into account two factors: 1) A significant amount of the globe is surrounded by the sclera which has its own rigidity and the curvature of the cornea varies from individual to individual.7,8 2) There are both vascular and aqueous pathways by which fluid may enter or leave the eyes. A measurement method should not affect the fluid volume of the eye.9

Schiotz tonometry involves the use of a weighted metal plunger which indents the cornea. The degree of indentation for a specified weight is inversely related to the IOP. Scleral rigidity will affect the measurement since the cornea is indented. As the scleral rigidity increases, the indentation of the cornea will decrease and the measurement of IOP will be falsely high. However, in 95 per cent of cases, scleral rigidity is within a normal range.7 Repeated measurements taken close together will give a falsely low measurement. Ours were at least one hour apart. Schiotz tonometry is very simple to learn and fairly accurate in most cases. Values up to 25 torr are considered normal.7

**Effect of Water Loading.** A test, developed by oph-
Hemodynamics, Plasma Histamine, and Catecholamine Concentrations during an Anaphylactoid Reaction to Morphine

NABIL R. FAHMY, M.D.*

Morphine is frequently given intravenously as the main anesthetic drug for cardiac surgery and as the narcotic component in nitrous oxide–narcotic-relaxant anesthesia because of minimal cardiovascular effects. In some patients, however, hypotension occurs usually secondary to histamine release. In the case report below, we describe a patient who had an anaphylactoid reaction to morphine in which changes in hemodynamic function were correlated with plasma histamine and catecholamines levels.

REPORT OF A case

A 45-year-old, 57-kg white woman was scheduled for a left total hip replacement. She gave no history of drug allergies and was not receiving medication prior to admission. The patient had no history or clinical evidence of cardiopulmonary disease and was enrolled in an ongoing study of intravenous narcotic drugs with her consent. She was given diazepam, 10 mg orally, 90 min prior to surgery. On arrival in the induction room, peripheral venous, arterial, and right atrial catheters were inserted under local anesthesia. Hemodynamic monitoring included measurement of heart rate, right atrial and systemic arterial blood pressures.