VISUAL DISTURBANCES IN TUR REACTION

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ABSTRACT—Visual disturbances during transurethral resection (TUR) of the prostate are described and possible causes of this phenomenon are discussed. Awareness of this unusual manifestation of the TUR reaction may offer the first clue to excessive systemic absorption of irrigation fluid.

Creevy and Webb's first described a fatal reaction following a transurethral resection of the prostate (TURP) in 1947. They labelled this adverse response the "TUR reaction." Since that time, the symptom complex and pathophysiology have been well described. The typical TUR reaction is characterized by irritability, confusion, headache, nausea and vomiting, hypertension, bradycardia, shortness of breath, muscular twitching, seizures, cyanosis, and occasional death. The symptoms are explained by a rapid decrease in serum osmolality which is presumably brought about by the rapid absorption of nonelectrolyte-containing irrigating fluid through open prostatic venous sinuses.

Visual disturbances have been reported as an unusual component of the TUR reaction. We have observed visual disturbances as the only symptoms in 2 patients who each underwent a TURP. This phenomenon may occasionally be the earliest clue to excessive systemic absorption of irrigation fluid.

Case Reports

Case 1

A seventy-seven-year-old white man had microscopic hematuria on admission for amaurosis fugax. He also complained of nocturia, weak stream, urgency, and postmicturitional dribbling. Angiography revealed several bilateral carotid lesions that were not hemodynamically significant. An excretory urogram showed normal upper tracts and a prostatic impression.

The past medical history was remarkable for an allergy to penicillin. Medications included digoxin, furosemide, anhydrous theophylline (Theo-Dur), KCl, and an albuterol inhaler. The review of systems was noncontributory.

A TURP was performed with 1.5% glycine irrigation fluid. His preoperative serum sodium was 144 mEq/L. After completion of the TURP, the patient complained of decreased vision in both eyes, followed by complete blindness. A serum sodium was obtained and was found to be 116 mEq/L.

An ophthalmology consultant documented a normal fundoscopic examination. A neurology consultant found no mental status, cranial nerve, or motor deficits. Neither consultant thought the patient was having a transient ischemic attack. Both believed the patient's symptoms were secondary to occipital edema. He was treated with furosemide and 3% saline solution. His vision improved through the night. A repeat serum sodium was 128 mEq/L. By the next morning, the patient claimed he could "see better than before the operation." His serum at that time was 140 mEq/L.
Case 2

A seventy-eight-year-old white man was admitted for transient ischemic attacks. After adequate evaluation by the vascular surgery service, he underwent a right carotid endarterectomy. Postoperatively, he was unable to urinate after his Foley catheter was removed. Upon further questioning, it was found that he had been suffering from symptoms of prostatism for some time.

Ten days after his carotid endarterectomy, he underwent a TURP with 1.5% glycine irrigation fluid. His preoperative serum sodium was 135 mEq/L. Near the end of the resection, the patient complained of the room "being dark." Although he was otherwise asymptomatic, a serum sodium was obtained because of our experience with Case 1. A serum sodium was found to be 118 mEq/L. His procedure was rapidly completed. Except for decreased vision, no focal neurologic abnormalities were present. He was given normal saline and furosemide intravenously. His vision began to improve shortly after this. Two hours after his procedure, his serum sodium was 128 mEq/L. By the next morning, his vision was normal, and his serum sodium was 132 mEq/L.

Comment

Visual disturbances during the TUR reaction are rare. Nevertheless, an awareness of this clinical phenomenon is important. Our 2 cases demonstrate the benign nature of this complication provided appropriate therapy is instituted promptly. Although both cases had evidence of cerebrovascular disease, the onset of bilateral visual disturbances following TURP accompanied by hyponatremia and the correction of these abnormalities with appropriate fluid and electrolyte management suggest a causal relationship. In support of this, ophthalmologic and neurologic evaluation of Case 1 revealed no other cause for the transient bilateral visual disturbance.

There are two hypotheses regarding the development of visual disturbances in the TUR reaction. The most widely accepted one is based on the absorption of large amounts of nonelectrolyte-containing irrigating fluid during resection which causes a decrease in serum osmolality. Although the accompanying hyponatremia is associated with dramatic changes in the function of the central nervous system, these effects are thought not to be due to the sodium concentra-

REFERENCES


