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CLINICAL INFORMATION

Perioperative stroke following TURP: high index of suspicion and stabilization of physiological parameters can save lives

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Abstract We report a case of a 72 year old hypertensive male who developed severe hypertension followed by neurological deterioration in the immediate postoperative period after TURP. While arterial blood gas and laboratory tests excluded TURP syndrome or any other metabolic cause, reduction of blood pressure failed to ameliorate the symptoms. A cranial CT done 4 h after the onset of neurological symptoms revealed bilateral gangliocapsular and right thalamic infarcts. Oral aspirin was advised to prevent early recurrent stroke. Supportive treatment and mechanical ventilation ensured physiological stability and the patient recovered completely over the next few days without any residual neurological deficit.

PALAVRAS-CHAVE
Ressecção transuretral de próstata;
Perioperatório;
Acidente vascular cerebral;
Hipertensão;

AVC no perioperatório após RTUP: alto índice de suspeita e estabilização de parâmetros fisiológicos podem salvar vidas

Resumo Relatamos o caso de um paciente hipertenso, 72 anos de idade, que desenvolveu hipertensão grave seguida de deterioração neurológica no pós-operatório imediato após RTUP. Embora os testes laboratoriais e a gasometria tenham excluído a síndrome de RTUP ou qualquer outra causa metabólica, a diminuição da pressão sanguínea não conseguiu melhorar os sintomas. Uma TC craniana, realizada 4 horas após o aparecimento de sintomas neurológicos, revelou infartos gangliocapsular bilateral e talâmico à direita. AAS oral foi aconselhado para prevenir

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Manifestações neurológicas; Inconsciência

um AVC recorrente precoce. O tratamento de apoio e a ventilação mecânica garantiram a estabilidade fisiológica, e o paciente obteve recuperação completa durante os próximos dias, sem qualquer déficit neurológico residual.

Introduction

Perioperative stroke has been reported to have an incidence of 0.1% in 523,059 patients undergoing non-cardiac, non-neurological and non-vascular surgical procedures.[1] None of these cases have been reported following urology surgeries. Although TURP is most commonly performed urological procedures, to the best of our knowledge, postoperative stroke has not been reported after TURP. No incidence of stroke was reported in any patient in the perioperative period in 7707 patients across 3 German centres between 1989 and 2005.[2] Although Raj et al. reported two cases of Transient Ischaemic Attack (TIA) or stroke amongst 305 patients undergoing TURP, this study consisted of 111 patients who had medical indication like history of stroke or TIA and coexisting atrial fibrillation, for receiving anticoagulants.[3] However, the authors had not specified whether the two cases were specifically TIA or stroke.

Case report

A 72 year male weighing 62 kg with history of hypertension for the past 12 years was scheduled for a Transurethral Resection of Prostate (TURP) for his symptoms of bladder outlet obstruction. His hypertension was controlled on oral amlodipine 5 mg once daily and all preoperative routine investigations were unremarkable except for the Electrocardiograph (ECG) which showed a left bundle branch block pattern. Transthoracic echocardiograph revealed left ventricular hypertrophy with an ejection fraction of 58%. He had no history of any central nervous system symptoms and was not on any antiplatelet medication.

The patient received alprazolam 0.5 mg orally on the night before surgery and also on the morning 2 h prior to surgery. Amlodipine was continued on the morning of surgery. In the operation theatre his initial baseline readings were: pulse rate of 74 min, blood pressure of 179/92 mmHg and room air saturation (SpO_2) of 98%. 10 min after 1 mg of intravenous midazolam his vitals remained stable with a pulse rate of 74 min, blood pressure of 160/86 mmHg and room air saturation (SpO_2) of 97%. TURP was performed under subarachnoid block with 2 mL (10 mg) 0.5% bupivacaine heavy with 25 mcg of fentanyl. The total resection time was 50 min and 17 L of glycine was used. During the surgery the heart rate remained between 69 and 83 beats per minute and the blood pressure remained between 142/77 mmHg and 177/83 mmHg.

The patient was subsequently monitored in the post-anaesthesia recovery area for 60 min and then shifted to the High Dependency Unit (HDU). The patient remained comfortable and hemodynamically stable for the initial 150 min with return of sensory-motor power of the lower limbs. Then his blood pressure rose from 157/77 mmHg (pulse rate of 67 min) to 210/94 mmHg (pulse rate of 62 min) over 1 h. He remained fully conscious and alert, was comfortable and did not complain of any pain, distress or headache. He was immediately given 5 mg of amlodipine orally and was observed over the next few hours. Two hours later he slowly started getting confused and disoriented with gradually waning consciousness. His blood pressure was 220/110 mmHg (pulse rate of 68 min), Glasgow Coma Scale Score was 8/15 (E1, V2, M5) and he was neglecting his left side. The patient was sedated with intravenous midazolam 2 mg, intubated and mechanically ventilated. An infusion of nitroglycerin was started at 2 μg/kg/min and titrated with an aim to reduce the mean arterial pressure by 25% in the next hour and maintain it around 160/100–110 subsequently.

An Arterial Blood Gas (ABG) sampling was done and all routine investigations, including serum electrolytes were sent to the laboratory. A cranial Computed Tomography (CT) was advised.

A provisional diagnosis of TURP Syndrome was made with the differential diagnosis as hypertensive encephalopathy or stroke. At this point he ABG on room air revealed a pH of 7.410, pCO_2 of 39.6 mmHg, pO_2 of 124.7 mmHg, Hb of 13.4 g/dL, Na^+ 140 mmol/L, K^+ 5 mmol/L, and Cl^- 104 mmol/L, Lactate of 1.4 mmol/L, HCO_3^- of 22 mmol/L and a base excess of 1.4 mmol/L. The laboratory results showed a haemoglobin level of 13.1 g/dL, K^+ of 3.7 mmol/L, Na^+ of 149 mmol/L, a Total Leucocyte Count (TLC) 7900/cumm (N66, L31, E1, M2) and a random blood sugar of 100 mg/dL. A normal pH, sodium level, bicarbonate level and anion gap (14 mmol/L) ruled out TURP syndrome as the cause of the deterioration of consciousness levels. No other metabolic cause could be appreciated based on the investigations done. A normal lactate level and total leucocyte count also excluded sepsis as the possible cause of neurological symptoms. A cranial CT done 4 h after the onset of neurological symptoms revealed acute bilateral gangliocapsular and right thalamic infarcts. Rest of the brain parenchyma showed only age related atrophic changes.

Appreciating stroke as the cause of neurological deterioration, nitroglycerin infusion was slowly tapered and stopped. The blood pressure during the next 24 h ranged from 167/84 mmHg to 116/78 mmHg and the heart rate

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