OLGU SUNUMU

SEIZURES AFTER HYSTEROSCOPY

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This case report was presented as a poster in 16th International Intensive Care Symposium. Istanbul 2007.

SUMMARY

SEIZURES AFTER HYSTEROSCOPY: CASE REPORT

Hysteroscopic procedures have been widely used more recently. This procedure appeared to be minimally invasive but may result in potentially devastating complications. In this case report, we present a 39 years old, severe perioperative hyponatremic patient with tonic clonic seizures after elective hysteroscopic myomectomy. This case report highlights the vigilant need for careful perioperative monitoring of fluid dynamics.

KEYWORDS: *Hysteroscopy; Hyponatremia; Seizures, Tonic-clonic.*

ÖZET

HİSTERESKOPİ SONRASI GELİŞEN NÖBET

Histeroskopik işlemler günümüzde yaygın olarak kullanılmaktadır. İşlemler minimal invaziv görülse de potansiyel olarak yıkıcı sonuçlara yol açabilir. Bu olgu sunumunda, 39 yaşında, elektif histeroskopik miyomektomi sonrası tonik klonik nöbet geçiren, perioperatif ciddi hiponatremi oluşan hastamızı sunuyoruz. Bu olgu, sıvı dinamiklerinin perioperatif dikkatli monitörizasyonunun önemini vurgulamaktadır.

ANAHTAR KELİMELER: *Histeroskopi; Hiponatremi; Nöbetler, Tonik-klonik.*

INTRODUCTION

Hysteroscopic procedures have been widely used more recently due to the possibility of an accurate diagnosis and resection of the lesions (1). This procedure appeared to be minimally invasive but may result in potentially devastating complications. Probable risks include fluid volume overload, uterine perforation, hemorrhage, infection, and the need for immediate hysterectomy (2). Ideal distention medium for the visualization of the endometrium should be isotonic, electrically inert, non toxic, transparent, and easy to sterilize. Solutions most commonly used today are 1.5% glycine and sorbitol: none of them meet the criteria of ideal medium, they are moderately hypotonic and they have the potential to be absorbed in volumes large enough to cause hyponatremia and hypervolemia similar to transurethral resection of the prostate (TURP) syndrome (3). The dilutional pathophysiology of hyponatremia is similar and this situation was labeled as female TURP syndrome (4). Herein, we report a severe perioperative hyponatremic patient with tonic clonic seizures after elective hysteroscopic myomectomy.

CASE

39 years old female patient accepted to Ankara University İbn-i Sina Hospital Reanimation Unit with generalized tonic-clonic seizures. In an external medical center she underwent hysteroscopic myomectomy operation for three hours; 1.5% glycine solution was used during operation. Blood Na was 85 mEq L^{-1} at the second hour of operation and corrected rapidly with %3 NaCl in five hours. On admission, Glasgow Coma Scale (GCS) was 6, tension arterial was 74/45 mmHg, central venous pressure was 3 mmHg, and serum sodium was: 127 mEq L^{-1}. Mechanical ventilation, fluid resuscitation with Ringer's lactate and 20 µg kg^{-1} min^{-1} dopamine infusions were started. Seizures were controlled with 1 mg kg^{-1} h^{-1} thiopental infusion. Diffusion magnetic resonance imaging (MRI) revealed bilateral ischemic areas especially in right fronto-temporo-parietal regions (Figure 1). Thiopental infusion was stopped on third day of admission, her GCS was 8, and with painful stimulation we revealed flexor response in her right upper and lower extremity and extensor response in left upper and lower extremity.

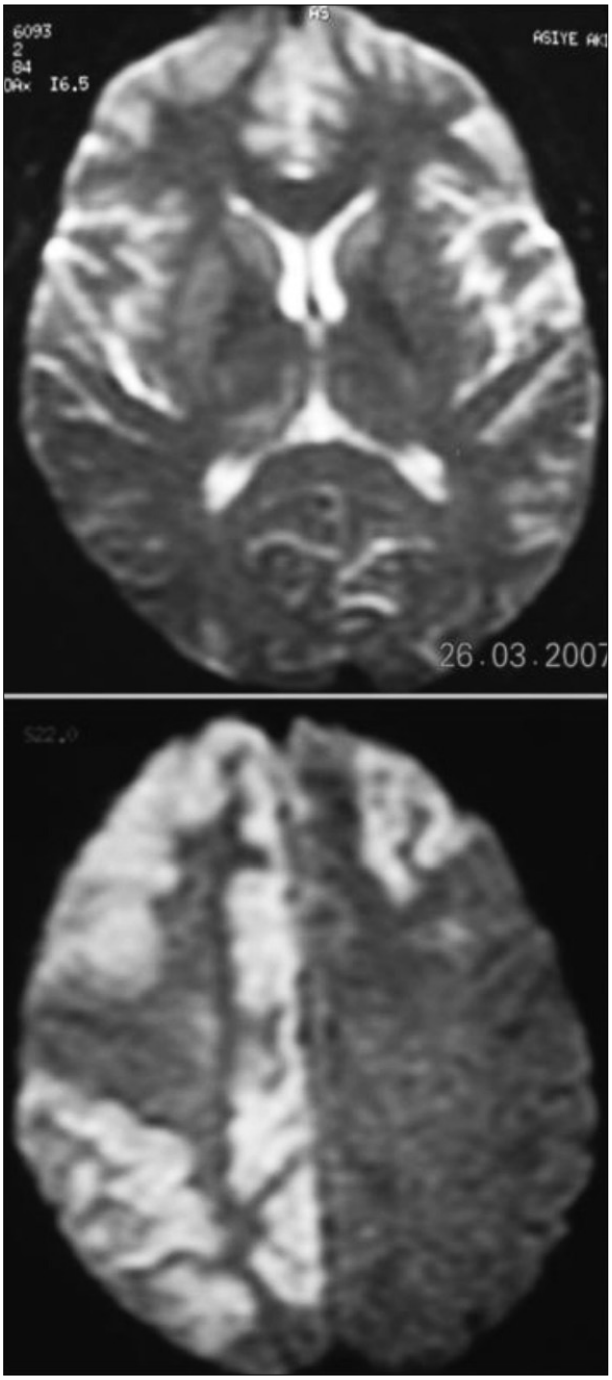

Figure 1. Magnetic resonance images of the patient. Bilateral ischemic areas were detected especially in right fronto-temporo-parietal regions.

On 12th day of admission she was discharged, on her last neurological examination GCS was 15, left nasolabial fold was lost, right upper and lower extremity muscle strength were 5/5, left upper was 2/5, left lower was 3/5, her speech was dysarthric.

DISCUSSION

Hysteroscopy has some advantages like preventing laparotomy and uterine incision and hospital stay for the patient but is not without risk (5). The female TURP syndrome is induced by the vascular absorption of irrigating fluids and its clinical features vary depending on the amount and nature of the irrigating fluid (1). The hydrostatic pressure required to distend the uterus is higher, the resection is more time-consuming and the exposed raw surface is greater than TURP, so the irrigating fluid is more likely to be absorbed during hysteroscopy than TURP (1,6). The incidence of fluid overload exceeding 2000 mL has been reported to vary between 0.1% and 6% in some studies (7,8).

Distention of the uterine cavity requires inflow pressure of 80-100 mmHg. This hydrostatic pressure increases the intrauterine pressure and when intrauterine pressure exceeds mean arterial pressure increased absorption of hypotonic solution occured. Excessive systemic absorption might cause hyponatremia, hypokalemia, hypocalcemia and hypoosmolarity (3). As a rule, for every liter of hypotonic fluid absorbed, the serum sodium level will decrease by 10 mmol L^{-1} (10 mEq L^{-1}) (9). Nause and malaise are the earliest findings, and may be seen when the plasma sodium concentration falls below 125 to 130 mmol L^{-1}. This may be followed by headache, lethargy, and eventually seizures, coma, and respiratory arrest if the plasma sodium concentration falls below 115 to 120 mmol L^{-1}. Hyponatremia is often accompanied by a reduction of osmolality (7). Fluid moves along osmotic and hydrostatic gradients, hypertension and bradycardia occur. As a result, in some patient pulmonary edema, cerebral edema might develop and this situation can contribute to the central nervous system symptoms (2,3,9). The severity of symptoms generally reflects severity of cerebral overhydration. Cerebral edema may result in cerebral hypoperfusion and brain injury. Hypoxia and low arterial pressures seen with fluid overload may exacerbate brain injury in hypoperfused areas in the brain (7). Also the absorbed glycine is metabolized to ammonia and oxalate in the liver. Hyperglycinemia and hyperammonemia may occur with its use. It acts as an inhibitory neurotransmitter in the retina and might cause transient blindness (10). Hyperammonemia may also cause deterioration of cerebral function, visual disturbance, and muscle weakness (7).

There are two basic principles which determine the amount of fluid absorbed: 1- the hydrostatic pressure of

the fluid, and 2- the length of the procedure. 10-30 mL of fluid can be absorbed during every minute (2,3). Keeping the intrauterine pressure below the mean arterial pressure can minimize absorption. A key aspect to the prevention of excessive absorption is the precise measurement of the fluid infused and the fluid recovered. These calculations should be performed every 15 minutes. It is suggested that the case be ended when the fluid deficit is between 1000-2000 mL (3,9,11).

In symptomatic hyponatremic patients, the recommendations are to replace sodium and eliminate excessive water. If both serum osmolarity and the serum sodium level are low, hypertonic saline can be infused; however, excessive speed can cause central pontine demyelination (2,3). In asymptomatic patients hypertonic saline be avoided, close observation and supportive care are appropriate in mild cases. Fluid restriction, saline replacement, and diuresis also can be used (2,3).

Hysteroscopy is becoming a keystone in the management of intrauterine disease, it is even more imperative to treat hysteroscopic complications. Nonstop communication between the surgeons, anesthesists, and nursing staff facilitates the early detection and rapid treatment. This case report highlights the vigilant need for careful perioperative monitoring of fluid dynamics to avoid a series of possible life-threatening situations.

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