

Case Report: Our Experience with Unilateral Regional Block in a Geriatric Patient Undergoing Emergency Femoral Fracture Operation

Assist. Prof. Dr. Deniz TURAN and Assoc. Prof. Dr. Serdar EPOZDEMİR*

Medipol University, Camlica Hospital, Department of Anesthesiology and Reanimation, Bulgurlu, Alemdağ Cd No:100, 34696 Üsküdar/İstanbul, Turkey.

*Correspondence:

Dr. Serdar Epözdemir, Associate Professor, Medipol University, Camlica Hospital, Department of Anesthesiology and Reanimation, Bulgurlu, Alemdağ Cd No:100, 34696 Üsküdar/İstanbul, Turkey..

Received: 02 March 2021; Accepted: 04 June 2021

Citation: Deniz TURAN, Serdar EPOZDEMİR. Case Report: Our Experience with Unilateral Regional Block in a Geriatric Patient Undergoing Emergency Femoral Fracture Operation. *Anesth Pain Res.* 2021; 5(1): 1-2.

ABSTRACT

Elderly patients who face the necessity of surgery are in the group with a high potential to cause problems in the daily practice of anesthesia. The presence of cardiac, endocrine, renal, cerebral and respiratory diseases in patients in this age group increases the risk of perioperative and postoperative morbidity and mortality. In this case, we aimed to present the anesthesia management of a 110 year-old female patient who underwent emergency surgery for a femur fracture.

Keywords

Elderly patient, Femur fracture, Unilateral spinal anesthesia, Heavy bupivacaine.

Introduction

With the increase in the quality of life, diagnosis and treatment opportunities, the elderly population is increasing rapidly around the world. The elderly population aged 65 and over, and those aged 80 and over are considered as the advanced elderly population [1]. The majority of patients who underwent hip and lower extremity surgery are in the advanced age group. In elderly patients, regional anesthesia techniques are preferred to general anesthesia due to co-morbidities.

Case Presentation

A 110-year-old female patient, Height: 1.50 cm, Weight: 45 kg, was admitted to the emergency department of our hospital due to a right femoral shaft fracture. An anesthesia consent form was obtained by explaining to the patient and the patient's relatives that we would apply a Regional Block for the patient to perform the emergency operation by the orthopedic surgeon before vital signs became problematic. The patient had the diagnoses of Hypertension,

Congestive Heart Failure, and Kidney Failure. In the preoperative preparation, electrocardiography sinus rhythm and Posterior Anterior Chest X-ray were evaluated as normal according to age. Cardiology examination was evaluated as Echocardiography, Ejection Frequency: 60%, Aortic Insufficiency: 10, Mitral Insufficiency: 10, Tricuspid Insufficiency: 20, Pulmonary Arterial Pressure: 40 mmHg. Hemogram was normal, Creatine: 1.58 Urea: 198 in biochemical analysis. After hydration, Creatine decreased to 1.37 Urea: 143. For premedication before the operation, 2 mg of dornicum was administered to the patient as an infusion with 100 ml of saline. The patient was taken to the operating room for unilateral spinal anesthesia to cover the right lower extremity as a method of anesthesia, and after being monitored, his vital values were recorded and the left lateral decubitus position was placed. The legs were pulled towards the abdomen, and 2 ml of 0.5% hyperbaric bupivacaine was administered with a 25 G Quincke needle (Spinocan; B. Braun, Melsungen, Germany) through the L 4-5 space. The pinprick test was performed after the operation was placed in the normal right lateral decubitus position and held for a while. Surgery was initiated when it was observed that the appropriate anesthesia sensory block reached the T8 dermatome level. In the operation, which lasted 2 hours and 30 minutes,

hemodynamic parameters remained stable and surgical procedures were performed successfully. No complications developed. 50 mg im tramadol and 50 mg oral diclofenac were administered as analgesics to the patient whose motor block was relieved and pain started in the first hour after surgery. It was observed that the sensory block had regressed to the T10 dermatome level, and the geriatric patient, who was monitored and observed in the anesthesia recovery unit for 60 minutes, was transferred to the intensive care unit for postoperative follow-up.

Discussion

With the increase in the elderly population, more and more patients undergo elective and emergency surgery [2]. It is reported that the risk of mortality due to surgical procedure increases in this patient group due to co-morbidities [3]. With advancing age, parasympathetic activity decreases, atherosclerosis, systemic The capacity of the autonomic nervous system and blood vessels to provide hemodynamic stability decreases due to reasons such as increased cular resistance and left ventricular hypertrophy [4]. In the venous system; With age, the development of progressive fibrosis reduces the depot function against volume changes and hypotension may be more severe [5].

Patients in the advanced age group are more affected by hemodynamic instability due to spinal block [6]. In this patient group, changes in the character of spinal block and the increase in the frequency of hypotension make sensory and motor block levels more important. In order to avoid hemodynamic instability, methods such as using local anesthetic at the lowest possible dose, adding opioids to low-dose local anesthetics or unilateral block are used [7].

Considering the advanced age and limited lung capacity of our case, spinal anesthesia was applied. Fluid replacement was performed with 5 ml/kg Ringer's Lactate solution to avoid hemodynamic instability and considering that fluid overload may cause pulmonary edema. In our case, unilateral block was applied with 10 mg (2 ml) hyperbaric bupivacaine. With this local anesthetic dose, anesthesia was provided adequately without the development of hypotension. In the literature reviews, 4 mg bupivacaine was used in combination with 20 mcg fentanyl as the lowest dose in hip surgery cases [8]. Low-dose bupivacaine was used in surgeries requiring lower block levels. Valanne et al. successfully administered 4 mg of hyperbaric bupivacaine under unilateral spinal anesthesia to patients who will undergo knee arthroscopy surgery [9]. In another study performed

by placing an intrathecal catheter, 5 mg of bupivacaine was used and an additional dose of local anesthetic was administered due to insufficient anesthesia [10].

As a result, in anesthesia applications in geriatric patients, the anesthesia technique should be determined by taking into account the physiological changes, and the appropriate drug and dose selection should be made for the patient. In this case, it was shown that adequate anesthesia could be achieved with 10 mg hyperbaric bupivacaine in hip surgery without affecting hemodynamics.

References

1. Abrams WB, Beers MH, Berkow R. The Merck Manual of Geriatrics A Cross National Perspective. second edition. In.; Whitehouse Station, N.J. Merck Research Laboratories, 1996; 123-29.
2. Turkmen A, Turgut N. Geriatric Anesthesia. Turkish Journal of Geriatrics 2007; 10: 49-56.
3. Karlı B, Kafalı IH, Mimaroglu C, et al. Geriatric Anesthesia. *Turkiye Klinikleri Medical Sciences*. 1994; 14: 309-313.
4. Rooke GA, Robinson BJ. Cardiovascular and autonomic nervous system aging. *Problems in Anesthesia*. 1997; 9: 482-497.
5. Sielenkammer A, Booke M. Anaesthesia and the Elderly. *Current Opinion in Anaesthesiology*. 2001; 14: 679-684.
6. Oğurlu M, Şen S, Uğur B, et al. Evaluation of the development of hypotension due to spinal anesthesia in patients over 65 years of age. *Turkish Journal of Geriatrics*. 2006; 9: 126-129.
7. Martyr JW, Clark MX. Hypotension in elderly patients undergoing spinal anaesthesia for repair of fractured neck of femur. A comparison of two different spinal solutions. *Anaesth Intensive Care*. 2001; 29: 501-505.
8. Ben David B, DeMeo PJ, Lucyk C, et al. Minidose lidocaine-fentanyl spinal anesthesia in ambulatory surgery: prophylactic nalbuphine versus nalbuphine plus droperidol. *Anesth Analg*. 2002; 95: 1596-1600.
9. Valanne VJ, Korhonen AM, Jokela RM, et al. Selective spinal anesthesia: a comparison of hyperbaric bupivacaine 4 mg versus 6 mg for outpatient knee arthroscopy. *Anesthesia & Analgesia*. 2001; 93: 1377-1379.
10. Biboulet P, Deschodt J, Aubas P, et al. Continuous spinal anesthesia: does low-dose plain or hyperbaric bupivacaine allow the performance of hip surgery in the elderly. *Regional anesthesia*. 1993; 18: 170-175.