

Combined lumbar plexus and sciatic nerve block for hip fracture surgery in a patient with severe aortic stenosis

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To the Editor:

In the elderly population, the prevalence of symptomatic cardiac disease, including aortic stenosis, is increased. Despite impressive advances in anesthesiological and surgical techniques, morbidity and mortality in patients with severe aortic stenosis remains high [1]. Patients undergoing hip arthroplasty usually are elderly and present with different associated comorbidities [2]. We report successful management of a patient with aortic stenosis, hypertension, cerebrovascular disease, and a temporary pacemaker who underwent hip fracture surgery.

A 75-year-old woman (60 kg, 155 cm) had fallen, resulting in a closed fracture of the right trochanter. She had cerebrovascular disease, aortic stenosis, and hypertension. Preoperative physical examination revealed findings consistent with her valvular heart disease and cardiac pulse of 35/min; the electrocardiogram showed complete atrioventricular (AV) block and left ventricular hypertrophy. A temporary pacemaker had been placed. The echocardiogram revealed an aortic valve area of 1 cm² and concentric left ventricular hypertrophy. Aortic valve pressure gradient was 40 mmHg. We decided that one of the best anesthetic procedures for her was combined lumbar plexus and sciatic nerve blockade, which would provide stable hemodynamic parameters. Combined paravertebral lumbar plexus and sciatic nerve block produces adequate anesthesia of the ipsilateral lower limb for surgical repair of hip fracture in the elderly [3].

In the operating room, lumbar plexus block was performed using the Chayen's approach [4]. In brief, the patient was turned to the left lateral position with right hip and knee flexed to approximately 45°. A puncture point was identified 4 cm lateral from midline of the L5 spinous process along the intercrystal line. A 110-mm, 22-G stimulating needle (Contiplex D; B. Braun, Melsungen, Germany) connected to a nerve stimulator (Stimuplex HNS 11, B. Braun) was advanced perpendicular to all planes, and a motor stimulus was seen in the quadriceps distribution. Sciatic nerve blockade was performed using the classic Labat's approach [5]. Briefly, the needle was inserted 5 cm below the midpoint of a line connecting the posterior superior iliac spine and the greater trochanter. After an appropriate stimulus was localized in the sciatic distribution, 10 ml levobupivacaine 0.25% was injected and the patient was returned to the supine position. Combined block developed in approximately 30 min for qualitative anesthesia. Her blood pressure was between 160/100 and 110/70 mmHg throughout the 60 min of surgery. Estimated blood loss and intraoperative urine output were 250 and 200 ml, respectively, and 1,000 ml of lactated Ringer's solution was administered. Following surgery she was taken to the postanesthesia care unit. The effective time of the nerve blocks was 20 h. She was discharged from hospital 6 days after her operation.

General anesthesia could have been an option in our patient. However, general anesthetic agents can depress the myocardium, produce vasodilatation, and can be associated with wide changes in hemodynamic variables by an intense stimulus as tracheal intubation or extubation. Epidural block or spinal block commonly results in hypotension, which may be exacerbated and have negative implications in patients with severe aortic stenosis.

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In summary, this report briefly introduces the superiority of combined lumbar plexus and sciatic nerve block in a patient with aortic stenosis, hypertension, cerebrovascular disease, and a temporary pacemaker who underwent hip fracture surgery.

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