Correspondence

The Maltepe combination: Novel parasacral interfascial plane block and lumbar erector spinae plane block for surgical anesthesia in transfemoral knee amputation

Dear editor;

For patients undergoing transfemoral (above knee) amputation, anesthesia options are generally limited due to concomitant complex medical problems of the patients. In patients undergoing transfemoral amputation, regional anesthesia techniques may be life-saving when it is necessary to avoid general or neuraxial anesthesia. The blockage of lumbar and sacral plexus or their components are generally applied for this purpose [1].

In our clinical practice, we prefer lumbar erector spinae plane block (L-ESPB) instead of lumbar plexus block (LPB) in high-risk patients undergoing lower extremity surgeries. Previously, we have demonstrated clinical efficacy of L-ESPB, which is similar to LPB and we confirmed this clinical resemblance with computerized tomography. [2–4]. Ultrasound guided sciatic nerve block can be applied from parasacral, gluteal or subgluteal regions. In the parasacral region, the sciatic nerve is located under the piriformis muscle, medial to the posterior border of the ischium, and lateral to the inferior gluteal vessels [5]. In ultrasound guided parasacral sciatic nerve block, after visualising the sciatic nerve and confirmation with electrical stimulation, local anesthetic is injected, encircling the sciatic nerve. We use interfascial plane blocks instead of plexus and nerve blocks to minimize the possibility of nerve and vascular damage. For this purpose, we applied a modification of the parasacral sciatic nerve block and called this approach Parasacral Interfascial Plane Block (PIPB). In this approach, the local anesthetic is injected to the interfascial plane between the deeper fascia of the piriformis muscle and posterior border of the ischium (Fig. 1). In this novel block, the aim is to spread the local anesthetic to the sciatic nerve. Herein we report the use of combination of L-ESPB and PIPB as the main anesthetic modality for two patient undergoing transfemoral knee amputation.

A 72 year old (68 kg) male patient required transfemoral lower-extremity amputation due to atherosclerotic and thromboembolic obstruction. Medical history was significant for renal failure (creatinine > 4 mg/dl), diabetes mellitus and congestive heart failure (left ventricular ejection fraction to be 20%). Considering his high risk, regional anesthesia was chosen. LPB and sciatic nerve block in the lateral decubitus position was planned, but insufficient USG imaging was achieved for LPB and there was no motor response to nerve stimulation. L-ESPB (40 mL) and PIPB (20 mL) was performed with bupivacaine/ lidocaine mixture (30 mL Bupivacaine %0.5, 15 mL lidocaine %2 and 15 mL normal saline with Adrenaline 1:200,000). Thirty minutes after performing the blocks; patient was transferred into the operation room. 1.5 mg/kg/h propofol infusion was commenced and adjusted according to patient's response during surgery. A total of 30 mg of ketamine in 10 mg boluses was applied. The surgical procedure was completed in
the supine position and lasted 75 min with a total of 120 mg propofol. The patient's Numeric Rating Scale (NRS) was < 3/10 until the postoperative 13th hour and no additional analgesia was required.

The second patient was an 88 year old (94 kg) male with impaired cognitive status and severe chronic cardiac failure (left ventricular ejection fraction to be 25%), which required the same protocol. No ketamine was applied. The surgical procedure was lasted 90 min with a total of 150 mg propofol. The patient's Numeric Rating Scale (NRS) was < 3/10 until the postoperative 11th hour and no additional analgesia was required.

Herein we have described the novel PIPB and have demonstrated that the combination of PIPB and LESPB can be used for transfemoral amputations with low dose sedoanalgesia. We have named this approach the Maltepe Combination. Further studies are required to put forth the anatomical basis of both PIPB and the Maltepe Combination.

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The authors declare that they have no conflict of interest.

Patient consent

Written informed consent for the procedure and future publishing were obtained from patients.

References


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