Case Report / Olgu Sunumu

Sacral erector spinae plane block for postoperative pain management following coccyx removal: A case report

Koksiks ameliyatı sonrası ağrı yönetiminde sakral erektör spina plan bloku: Olgu sunumu

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ABSTRACT

Sacrococcygeal dislocation commonly occurs after trauma and may cause coccydynia. Although most cases of coccydynia after sacrococcygeal dislocation resolve with conservative and medical treatment, surgery is also an option with refractory pain. Sacral erector spinae plane block (SESPB) is a novel approach for sacrococcygeal procedures and may be effective in the postoperative pain of this region. In this article, we present a case of a successful median approach SESPB for postoperative pain management following coccyx removal in a patient with sacrococcygeal dislocation. In conclusion, SESPB seems to be a promising regional anesthesia technique for pain originating from the coccyx.

Keywords: Orthopedic anesthesia, pain management, regional anesthesia, sacral erector spinae plane block, sacrococcygeal region.

ÖZ

Sakrokoksigeal dislokasyon, çoğunlukla travma sonrası oluşur ve koksidiniye neden olabilir. Sakrokoksigeal dislokasyon sonrası gelişen koksidini olgularının çoğu konservatif ve medikal tedavi ile düzelmekle birlikte, dirençli ağrı durumlarında cerrahi de bir seçenek olarak değerlendirilebilir. Sakral erektör spina plan bloku (SESPB) sakrokoksigeal bölgeye yönelik işlemler için yeni bir yaklaşımdır ve bu bölgenin cerrahi sonrası ağrısında etkili olabilir. Bu makalede, sakrokoksigeal dislokasyonu olan bir hastada koksiks rezeksiyonu sonrası cerrahi sonrası ağrı yönetimi için uygulanan median yaklaşım SESPB'nin başarılı bir olgusu sunuldu. Sonuç olarak, SESPB'nin koksiks kaynaklı ağrılar için umut verici bir rejyonal anestezi tekniği olduğu görülmektedir.

Anahtar sözcükler: Ortopedik anestezi, ağrı yönetimi, rejyonel anestezi, sakral erektör spina plan bloku, sakrokoksigeal bölge.

INTRODUCTION

Coccydynia is defined as the pain at the region of coccyx. Sacrococcygeal dislocation usually occurs after trauma and may cause coccydynia.[1] Most cases of coccydynia after sacrococcygeal dislocation resolve with conservative and medical treatment; however, surgery is also an option with refractory pain.

Sacral erector spinae plane block (SESPB) is a novel approach for sacrococcygeal procedures and may be effective in the postoperative pain of this region. Since SESPB was first suggested, multiple case reports showed SESPB as a useful and safe technique to reduce pain at sacral regional surgeries.[2-4]

In a recent cadaveric and radiological study, Keleş et al.[5] showed local anesthetic (LA) distributions with median and intermediate approaches to SESPB. In the median approach, LA distributed to the anterior part of the sacrum through sacral foramina; however, in the intermediate approach, the LA was seen only at the posterior part of the sacrum.

In this article, we present a case of a median approach SESPB in a patient with sacrococcygeal dislocation.

CASE REPORT

A 34-year-old, 65 kg, American Society of Anesthesiologists (ASA) Class I, female patient

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presented with sacrococcygeal dislocation due to a fall onto the buttocks. She did not respond to conservative or medical treatment and was scheduled for a coccyx excision surgery. The patient was taken to the operating room after sedation with 2 mg of midazolam intravenously (IV). Following standard monitorization, anesthesia induction was done with fentanyl 1 μg· kg^{-1}, propofol 2 mg· kg^{-1} and rocuronium 0.6 mg· kg^{-1} IV, and the patient was orotracheally intubated. Before the start of the surgery, the patient was turned to prone position. Under aseptic conditions, a linear ultrasound probe was placed longitudinally above the sacrum to identify median sacral crests and erector spinae muscles.

Median approach SESPB was performed with a 22-gauge, 80-mm needle (B. Braun Melsungen, Germany) using in-plane technique. The needle was inserted with a cranial to caudal direction until the tip touched to the top of the fourth median sacral crest. After negative aspiration, a single shot block with 20 mL of 0.25% bupivacaine was injected to the area and craniocaudal spread of the LA was confirmed (Figure 1). The surgery lasted for 3 hours without any complications. At the end of the surgery, 400 mg of ibuprofen IV, 1 g of paracetamol IV, and 30 mg of pethidine IV were administered to the patient. A patient-controlled analgesia (PCA) device through IV line was set to deliver 1 mg of morphine bolus dose and 8-min lock-out for the first postoperative day was initiated in the post-anesthesia care unit (PACU).

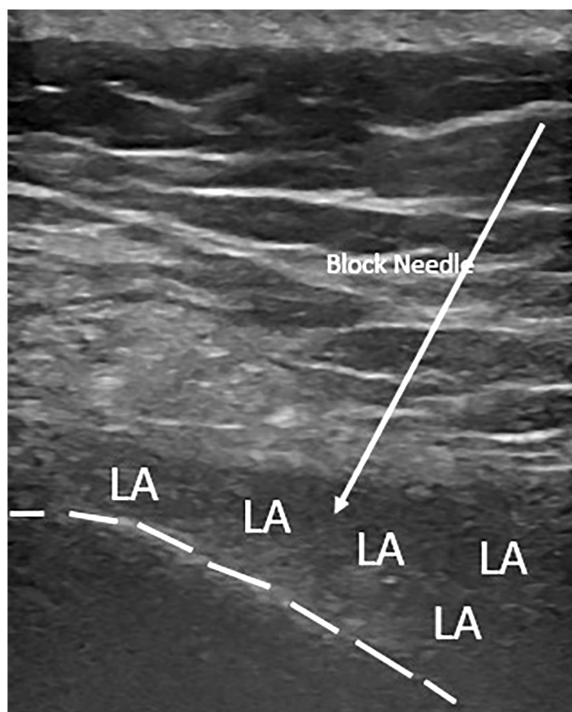

Figure 1. Ultrasound image of median approach sacral erector spinae plane block, white arrow represents the block needle and the point of injection.

LA, local anesthetic.

Postoperatively, the patient was evaluated with Numeric Rating Scale (NRS) score for pain. In the PACU, the patient's NRS for pain was 1 and no additional analgesics were needed and she was transferred to the surgical ward.

Paracetamol 1 g IV t.i.d. and dexketoprofen 50 mg b.i.d. were routinely given to the patient in the surgical ward in addition to PCA. The patient was re-evaluated at one, three, six, 12, and 24 hours postoperatively and NRS for pain scores were 0, 6, 0, 0, 0, respectively. No signs or symptoms of LA toxicity or motor block were seen. A total of 2 mg of morphine was administered to the patient via IV PCA at the end of 24 hours. No other rescue analgesics were needed. A written informed consent was obtained from the patient for publication of this case report.

DISCUSSION

Sacrococcygeal regional pain may be refractory to conservative treatment and patients may undergo surgical removal of the coccyx. This pain may be difficult to manage and may present a challenge to anesthesiologists. Multimodal approach including regional anesthesia techniques may provide opioid sparing anesthesia, fast recovery time, and favorable patient satisfaction.

The SESPB is a novel approach in sacral regional postoperative pain. It has been shown to be effective in lumbosacral regional surgeries including gender reassignment, parasacral reconstructive surgeries and anal regional surgeries.[2-4] A recent cadaveric and radiological imaging study of Keleş et al.[5] studied the LA distribution in median and intermediate approach of SESPB and showed that radiopaque solution was distributed to both subcutaneous area at the S1 and S5 horizontal planes and at the S2 to S5 levels through the sacral foramina via the spinal nerves. In the median approach, the LA spread from sacral foramina to the anterior of the sacrum. However, in intermediate approach, all the LA stayed at the posterior part of the sacrum. In our case, we used the single-shot median approach SESPB, and found to be clinically useful for treating postoperative pain following surgical coccyx removal. The patient was also re-evaluated six months after surgery. The NRS

score for pain at the sacrococcygeal region was 0. The patient was satisfied with the perioperative pain management.

In this case, we employed SESPB as an adjunct for postoperative analgesia following coccyx removal in a patient with sacrococcygeal dislocation. While preliminary evidence suggests that SESPB may provide effective pain relief in certain sacral and coccygeal procedures, its use should not be considered routine for all surgeries in this region. The decision to implement SESPB should be guided by individual patient factors and clinical assessment. Although our case demonstrates favorable outcomes, further prospective studies and randomized-controlled trials are warranted to establish the generalizability and optimal application of SESPB in various surgical indications.

In conclusion, SESPB seems to be a promising regional anesthesia technique for pain originating from the coccyx. It may be considered a useful and technically straightforward component of the postoperative multimodal analgesia regimen after surgical removal of the coccyx. Further randomized-controlled trials are needed to further evaluate the effectiveness of SESPB.

Author Contributions

M.M., I.O., Y.S., Y.G.: Idea/concept, design, data collection and/or processing, analysis and/or interpretation, writing the article, critical review, references and fundings, materials; M.M., Y.G.: Control/supervision; M.M., Y.S., Y.G.: Literature review.

Conflict of Interest

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Data Sharing Statement

The data that support the findings of this study are available from the corresponding author upon reasonable request.

AI Disclosure

The authors declare that artificial intelligence (AI) tools were not used, or were used solely for language editing, and had no role in data analysis, interpretation, or the formulation of conclusions. All scientific content, data interpretation, and conclusions are the sole responsibility of the authors. The authors further confirm that AI tools were not used to generate, fabricate, or 'hallucinate' references, and that all references have been carefully verified for accuracy.

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