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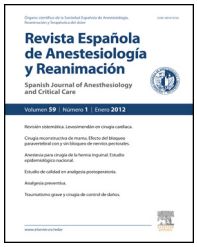

CASE REPORT

Postoperative analgesia with transversus abdominis plane catheter infusions of levobupivacaine after major gynecological and obstetrical surgery. A case series

M.Á. Gómez-Ríos[a,*], **M.J. Paech**[b]

[a] *Department of Anaesthesiology and Perioperative Medicine, Complejo Hospitalario Universitario de A Coruña, A Coruña, Spain*
[b] *Pharmacology, Pharmacy and Anaesthesiology Unit, School of Medicine and Pharmacology, The University of Western Australia, Perth, Australia*

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Nerve block;
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Abstract Transversus abdominis plane block has become an important method of postoperative pain management for patients undergoing abdominal surgery but the modest duration is a major limitation. We report the successful use of a novel TAP catheter technique for continuous infusion of levobupivacaine in six gynecologic and obstetric patients.

Bilateral TAP catheters were inserted at the end of surgery by ultrasound imaging using a Contiplex® C needle (B. Braun, Melsungen, Germany) in the Triangle of Petit or in a posterosubcostal level based on the location of the surgical incision. Following negative aspiration, 0.25% levobupivacaine 5 mL was injected. After withdrawing the needle, while holding the over-the-needle catheter in place, bilateral continuous infusion of 0.125% levobupivacaine at 2 mL/h from elastomeric pumps (INfusor SV2, Baxter, France) was started and continued for up to 50 h. Before removal of the catheter, a bolus of 10 mL levobupivacaine 0.25% was administered.

Successful analgesia was achieved in all six cases utilizing continuous infusión of levobupivacaine, minimizing the volume required. TAP infusions produce significant opioid sparing and better patient mobility. This technique may be a reliable alternative to neuraxial analgesia in major gynecological and obstetrical surgery.

* Corresponding author.
E-mail address: magoris@hotmail.com (M.Á. Gómez-Ríos).

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PALABRAS CLAVE
Bloqueo nervioso;
Dolor posoperatorio;
Analgesia multimodal;
Cirugía mayor

Analgesia postoperatoria con infusiones de levobupivacaina mediante catéter en el plano transverso del abdomen tras cirugía mayor ginecológica y obstétrica. Serie de casos

Resumen El bloqueo del plano transverso del abdomen (PTA) se ha convertido en un importante método para tratar el dolor posoperatorio en pacientes que se someten a una cirugía abdominal, pero su modesta duración es una limitación importante. Presentamos una puesta en práctica con éxito de la novedosa técnica de catéter PTA para infusión continua de levobupivacaína en 6 pacientes ginecológicas y obstétricas.

Los catéteres bilaterales PTA se insertaron al final de la intervención por medio de ecografía con una aguja Contiplex® C (B. Braun, Melsungen, Alemania) en el triángulo de Petit o en la región subcostal posterior, basándose en el punto de la incisión quirúrgica. Después de la aspiración negativa se inyectaron 5 ml de levobupivacaína al 0,25%. Una vez retirada la aguja, mientras se mantenía el catéter sobre la aguja en su lugar, se inició la infusión continua de 2 ml/h de levobupivacaína al 0,125% mediante bombas elastoméricas (INfusor SV2, Baxter, Francia), que se prolongó durante 50 h. Antes de la retirada del catéter, se suministró un bolo de 10 ml de levobupivacaína al 0,25%.

La analgesia fue exitosa en los 6 casos en los que se uso la infusión continua de levobupivacaína, con una reducción del volumen precisado. Las infusiones PTA suponen un ahorro significativo de opioides y ofrecen una mejor movilidad del paciente. Esta técnica puede ser una alternativa fiable a la analgesia neuroaxial en intervenciones mayores ginecológicas y obstétricas.

Introduction

Transversus abdominis plane (TAP) block has become an important method of postoperative pain management for patients undergoing abdominal surgery.[1] Nevertheless, a limitation of the block is the modest duration, which was originally reported to persist in reducing opioid requirements for at least 24 h. A small number of reports have described the use of continuous local anesthetic infusion via catheters placed bilaterally in the TAP to address this problem, but safety (intravascular concentrations of local anesthetic exceed the threshold of toxicity) and technical constraints (difficult catheter placement and early dislodgement) may restrict the clinical application of this approach.

This case series of six gynecologic and obstetric surgery patients documents the successful use of a novel TAP catheter technique for continuous infusion of levobupivacaine.

Case series

Institutional review board approval was obtained before implementing this method. Written informed consent was obtained from all patients, who acknowledged the description of their case in this report.

Technique

A similar technique was used for each patient, with bilateral TAP catheters inserted at the end of surgery. The specific approach for the TAP block was based on the location of the surgical incision. When the incision was predominantly subumbilical, a posterior TAP block in the Triangle of Petit was performed, with the needle insertion point midway between the costal margin and the iliac crest on the anterior axillary line. For surgical incisions that were supra-umbilical or full abdominal length, a postero-subcostal approach was performed. A high frequency (5–10 MHz) ultrasound probe (SonoSite Micromax; SonoSite, Inc., Bothell, WA, USA) was placed obliquely on the upper abdominal wall along the subcostal margin to identify the rectus abdominis muscle. The probe was gradually moved laterally along the sub-costal margin until the transversus abdominis muscle was identified lying posterior to the mid-axillary line. After visualization of the neuro-fascial TAP, a Contiplex® C needle (B. Braun, Melsungen, Germany) was introduced in-plane and directed toward the transversus abdominis muscle, using hydrolocation with 0.9% normal saline to confirm needle tip location in the fascial plane. Following negative aspiration, 0.25% levobupivacaine 5 mL was injected and the needle withdrawn, while holding the over-the-needle catheter in place. Correct catheter placement in the TAP was confirmed by injecting a small air bubble from the syringe. The sudden appearance of the hyperechoic bubble in the fluid distended (hypoechoic) plane confirmed correct positioning of the catheter. Bilateral continuous infusion of 0.125% levobupivacaine at 2 mL/h from small elastomeric pumps (INfusor SV2, Baxter, France) was started and continued for up to 50 h. Before removal of the catheter, a bolus of 10 mL levobupivacaine 0.25% was administered.

Peripheral venous blood samples were taken from ''patient 5'' at 10 min and 4, 8, 24, 30, 48 and 60 h after

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