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Declaration of interest

None declared.

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S. Selleng

M. Antal

T. Hansen

K. Meissner

T. I. Usichenko*

Greifswald, Germany

*E-mail: taras@uni-greifswald.de

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Psoas compartment block for anaesthesia during surgical repair of inguinal hernias

Editor—Local anaesthetic infiltration is recommended for inguinal hernia surgery but may become a challenge in patients with voluminous inguinal hernias or obesity, as large doses of local anaesthetic and sedation may be needed. Moreover, general or spinal anaesthetic techniques may be unsuitable in high-risk patients.

Anatomical, imaging and clinical studies suggest that psoas compartment block (PCB) performed at L2–L3 level has a high chance to involve L1–L2 roots, and thus can be suitable for inguinal surgery.^{1–3} We describe a modified access for PCB as an effective alternative to local anaesthetic infiltration in patients undergoing surgical repair of inguinal hernias.

In our institution, we introduced a modified PCB performed in lateral decubitus by a 120 mm stimulated needle inserted at the junction between the lateral third and the

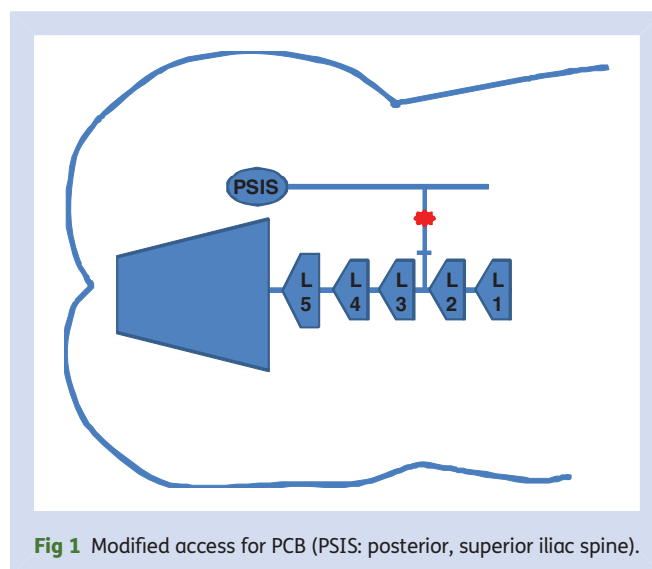


Fig 1 Modified access for PCB (PSIS: posterior, superior iliac spine).

medial two-thirds of a line drawn at L2–L3 interspace, between the interspinous line and a line passing through the posterior superior iliac spine (PSIS), parallel to the interspinous line (Fig. 1). If twitching of the anterior thigh area is observed, the needle is moved more cranially. When twitching of the inguinal field is observed, ropivacaine 5 mg ml⁻¹, 25–30 ml, is injected. Negative pinprick testing at incision line is generally reported 20–30 min after PCB.

In our experience, this technique allows inguinal surgery in awake patients without any effect on haemodynamics. Patients may need light intra-operative sedation and gentle manipulation of tissues because the peritoneal sac has visceral innervation and the spermatic cord and the testes, whose innervation can be tracked up to T10, may not be fully blocked. Patients are usually able to cough if requested by the surgeon. Postoperative analgesic consumption is minimal and home readiness criteria are achieved within few hours.

Nonetheless, PCB may be associated with complications such as hypotension, epidural or subarachnoid spread, systemic toxicity, renal puncture, and retroperitoneal haematoma.^{4–6} Sensory block, with or without motor block, of the femoral nerve presenting as hypoesthesia of the anterior thigh skin and paresis of the quadriceps muscle may also occur.

We do not consider PCB as a first-choice technique in lower abdominal wall surgery, but, in selected cases presenting difficult surgical or clinical management (e.g. patients with American Hernia Society type III–VI voluminous inguinal hernias or obese patients), it may represent a useful alternative that deserves to be studied in larger randomized trials. Moreover, this technique needs further study for the detection of the optimal site of injection and of the ideal local anaesthetic volume for lower abdominal wall surgery.

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Z. Mokini
C. Buccino
G. Vitale
T. Mauri
R. Fumagalli
A. Pesenti*

Monza, Italy

*E-mail: antonio.pesenti@unimib.it

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New method of percutaneous radiofrequency mandibular nerve rhizotomy guided by high-speed real-time computed tomography fluoroscopy with direct approaching view to foramen ovale

Editor—Nerve block guided by high-speed real-time computed tomography (CT) fluoroscopy is a well-established technique, especially for mandibular nerve and Gasserian ganglion block.^{1 2} For mandibular nerve block, however, we typically use the lateral approach instead of the anterior approach to avoid the complications of inappropriate intraoral insertion.

CT scans are usually performed with the CT beam vertical to the bed, which requires that the needle be inserted vertically into the patient along a guiding line from the CT. On this CT section, however, the direct approach from the skin to the foramen ovale is impossible because of the skeletal structures overlying the route; therefore, the needle must be inserted 1 mm caudal on the CT section because the mandibular nerve is considered to be located immediately caudal to the foramen ovale in the posterior margin of the lateral pterygoid plate. In the present study, we evaluated the efficacy of our new approach to the foramen ovale

using the gantry tilt technique for percutaneous radiofrequency mandibular nerve rhizotomy guided by high-speed real-time CT fluoroscopy.

This retrospective study was approved by our Institutional Review Board and the Hospital Ethics Committee. Written informed consent was obtained from all subjects.

Our study was based on 28 mandibular nerve blocks in 24 patients with idiopathic trigeminal neuralgia in the mandibular region who underwent radiofrequency mandibular nerve rhizotomy at Gunma University Hospital. Patients were divided into two groups according to the gantry tilt angle, a standard coronal view group (Group SC: 12 patients) and an optimal oblique view group (Group OB: 16 patients). A numerical rating scale (NRS) was used to quantify pain. Patients were asked to rate their pain before and at 1 month after the procedure.

The gantry angle was set at 0° to the patient in Group SC, and tilted caudally to enable the physician to see the whole cavity of the foramen ovale in Group OB. After sterilization and local injection of 0.5% lidocaine, 97 mm guiding needle was inserted at the marked insertion point. Sensory stimulation was applied with a lesion generator to confirm the trigeminal pain in the affected area. Motor stimulation for contractions of the masseter muscle was also used to obtain proper electrode placement. After the test dose injection, the radiofrequency current was applied and radiofrequency coagulation was performed.

The total exposure time for patients during the procedure was shorter in the Group OB [12 (5) s] compared with the Group SC [20 (7) s, $P < 0.05$]. Post-procedure NRS (1 month later) was lower in the Group OB [0.4 (0.8)] than in Group SC [1.9 (1.6); $P < 0.05$].

Based on our results, direct insertion to the caudal foramen ovale decreased the exposure time and reduced the post-procedure NRS score. These findings suggest that the accuracy of the needle placement is responsible for these benefits.

Anatomically, because the foramen ovale is located face down, the method of tilting caudally seems to be practical (Fig. 1).

We have emphasized the importance of accuracy of the needle position, which significantly contributes to the

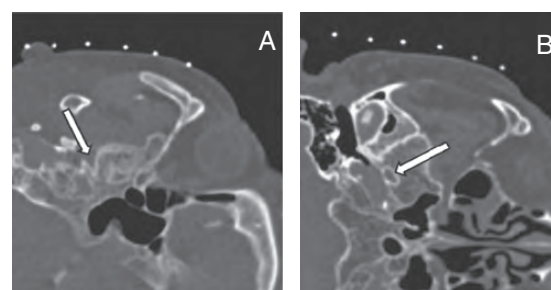


Fig 1 Axial CT sections of the head. (A) Gantry tilted. (B) Non-tilted. Arrow indicates the foramen ovale.