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Comparison between continuous thoracic epidural and paravertebral blocks for postoperative analgesia in patients undergoing thoracotomy: meta-analysis of clinical trials[☆]



Comparação entre bloqueios peridural e paravertebral torácicos contínuos para analgesia pós-operatória em pacientes submetidos a toracotomias: meta-análise de ensaios clínicos

Dear Editor:

The article entitled "Comparison between continuous thoracic epidural and paravertebral blocks for postoperative analgesia in patients undergoing thoracotomy: a systematic review", recently published in the *Brazilian Journal of Anesthesiology*, demonstrates the authors' concern to show the therapy effectiveness for anesthetic management of postoperative pain in chest surgeries.¹

Reading the scientific article arouses great interest to readers; however, some points need to be considered, such as: the software used for calculations, the sensitivity analysis method by successive meta-analysis, the use of mixed-effect model analysis, and the search to identify statistical heterogeneity.

The software used in the search was described in the sections Method and References, but the latter is incorrect, and it is impossible to identify the place where it is available and to have access to the software for future searches similar to this.

The method of successive meta-analysis was used by the authors at some point of the systematic review execution to perform the sensitivity analysis; however, the outcome of this analysis was not reported in the results or discussion, which did not clarify its real contribution in this systematic review. This method allows the identification of a likely source of statistical heterogeneity and the exclusion or not of the article, in an attempt to consolidate the results.²

The authors reported the use of random and fixed effect model for meta-analysis calculation; however, the random model was chosen to calculate the meta-analysis whenever I^2 was greater than 30%. In the analysis of variables "assessment of pain at rest after 24h and "incidence of hypotension", the value of I^2 was lower than that proposed by the authors, not matching the research method description, and the results were also described by the random instead of fixed effect method. The article does not indicate whether this description of the results was due to consensus decision of the authors or a failure to conduct the research.

The authors considered the presence of heterogeneity as a research bias when they reported "(...) these results may have been biased by the included studies heterogeneity"; however, the presence of heterogeneity does not indicate bias in a systematic review. Tests of heterogeneity are used to determine whether differences between the included studies are genuine (heterogeneity) or if it occurred randomly during the analysis (homogeneity).³ If the differences occurred randomly, the results found in systematic reviews have more credibility, and if heterogeneity is found, the reasons should be carefully evaluated by the authors to consolidate the results and not only be considered a research bias.

It is noticed that the statistical heterogeneity present in most analysis was little explored by the authors, and it is possible to disagree with part of their conclusion that says: "From this systematic review, it is clear that epidural analgesia is associated with a higher incidence of arterial hypotension and urinary retention when it is used for lateral pain control after thoracotomy in adult patients, with evidence level 1A", as level 1A requires minimal or absent heterogeneity or that it is properly explored while performing a systematic review.

In short, I congratulate the authors for the article, which brings important results for the understanding of post-operative pain in thoracic surgery. Systematic review conclusions are less incisive regarding the clinical significance of its results when those of the included studies differ from each other.³

Conflicts of interest

The authors declare no conflicts of interest.

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Foot drop following spinal anaesthesia



Queda do pé após raquianestesia

Dear Editor,

We report a case of foot drop following spinal anaesthesia. The incidence of nerve injury related to spinal anaesthesia is less than 1:10,000, and most incidences have unknown aetiology.^{1,2} However, if patients complain of pain or paraesthesia during spinal anaesthesia they must be watched for any unwanted neurological deficits. We report a case involving a possible needle trauma or local anaesthetic drug-related neural structure injury and subsequent foot drop.

A healthy 31-year-old adult female was scheduled for anal fissurectomy surgery. She had no medical comorbidity. Complete blood count and coagulation parameters were normal. After obtaining informed written consent and after overnight fasting, she was prepared for the operation. Routine monitorization (non-invasive blood pressure, electrocardiography, and pulse-oximeter) was performed in the operating room.

Once all aseptic precautions had been completed, a 27 g Quincke needle was inserted in the L4-L5 interspace. As the needle entered the subarachnoid space, the patient exhibited a jerky reaction that was followed by paraesthesia and pain. The needle was immediately withdrawn slightly and once the pain had subsided spinal anaesthesia was achieved with 10 mg (2 mL) 0.5% bupivacaine (heavy marcaine®, AstraZeneca, Istanbul, Turkey) In order to achieve saddle block, the patient was kept in a sitting position for five minutes and was turned to a prone position to operation.

In terms of perioperative sedation, midazolam (3 mg) was given intravenously. The operation lasted for 30 minutes. The patient was lightly sedated and was comfortable during the procedure.

At the postoperative sixth hour, the patient noticed that she was unable to move her left foot. After light touch neurological examination, pin prick and vibration senses were all reported to be absent. All reflexes were brisk except for the left knee, the ankle and the plantar reflexes, which were absent. There was also a persistent foot drop involving with left foot plantar flexion (0/5), although the

right foot was normal. Because the MRI was normal, surgical intervention was not scheduled. Methylprednisolone (250 mg) and vitamin B complex treatment (Bemiks®, Zentiva, Istanbul, Turkey) were started.^{2,3} Dexamethazone (16 mg) and B complex therapy were continued for five days. Physiotherapy was scheduled, and the patient was discharged. After 3 months of physiotherapy, the patient's symptoms were markedly improved.

Following spinal anaesthesia, mechanical trauma resulting from a needle or accidentally unsuitable drug placement are the most probable causes of neurological complications. As in many of the reported cases,^{1–3} we could not explain the exact aetiological factor that led to the neurological complications, which included paraesthesia and pain.

Orientation of the needle is also an important factor in terms of the depth and extent of nerve injury. A transverse needle insertion is associated with greater nerve injury, while a horizontal insertion is less dangerous. During the spinal anaesthesia procedure, paraesthesia associated with needle movement may cause nerve damage. The intensity of the paraesthesia is a strong indicator of nerve damage. The weakness and sensorial defects may be long lasting.⁴

We recommend a brief neurological examination of the lower limbs before a spinal anaesthesia protocol and, in an acute developed spinal anaesthesia-related foot drop situation, an urgent diagnose is needed and a treatment procedure is crucial for improved long term outcomes.

Conflicts of interest

The authors declare no conflicts of interest.

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