Letter to the Editor Regarding “Comparison of Ultrasound-Guided Caudal Epidural Blocks and Spinal Anesthesia for Anorectal Surgery: A Randomized Controlled Trial”

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Key Summary Points

This letter was written in response to the article “Comparison of ultrasound-guided caudal epidural blocks and spinal anesthesia for anorectal surgery: a randomized controlled trial”.

This article revealed that compared with spinal anesthesia (SA), the application of ultrasound-guided caudal epidural blocks (CEB) in anorectal surgery has improved the satisfaction of patients.

This letter pointed out some issues in the design of this randomized controlled trial; for example, selection of secondary outcome indicators, whether to test the level of anesthesia after the procedure, whether to set up subgroups for analysis according to the disease, setting of variables, and selection of volume and concentration.

To the Editor,

We read with great interest the article by Chen et al. [1] which revealed that, compared with spinal anesthesia (SA), the application of ultrasound-guided caudal epidural blocks (CEB) in anorectal surgery had improved the satisfaction of patients, including effective analgesia 24 h after operation, reduced the need for analgesia, reduced the incidence of phantom limb syndrome (PLS), postoperative nausea and vomiting (PONV), reduced the incidence of mean arterial pressure (MAP) > 20% from baseline, and delayed the time of first request for analgesia. These excellent results might provide the choice of anesthesia methods in our clinical work.

However, we still had some doubts.

First, the primary outcome was patient satisfaction with the quality of their anesthetic technique. Secondary outcomes included postoperative pain at 2, 4, 8, 16, 24, and 48 h after surgery at rest, time to first analgesic request, analgesia requirements ( sufentanil and flurbiprofen axetil consumption), incidence of phantom limb syndrome, time until return of bowel function, time to ambulation, incidence of PONV, reduction of intraoperative MAP >
20% from baseline, the surgeon satisfaction. Should the numeric rating scale (NRS) after activity, the NRS after defecation, length of stay, and cost of the stay be included as secondary outcome measures?

Second, the authors described clearly the operation steps of SA and CEB, without the level of anesthesia after the operation. As we all know, after epidural block and spinal anesthesia, the level of anesthesia needs to be tested before the surgery. If the level of the anesthesia was recorded in this article, it might have more clinical guiding significance.

Third, in the SA group, there were 30 instances of hemorrhoids, 12 of anal fissure, and 6 of anal fistula. On the other hand, in the CEB group, there were 28 cases of hemorrhoids, 14 of anal fissure, and 5 of anal fistula. But for the analysis of the results, the disease subgroup was not analyzed. For different anorectal diseases, the surgical methods are also different. Hemorrhoids were treated with hemorrhoidectomy or stapled hemorrhoidopexy [2]. There are two methods of hemorrhoidectomy: Ferguson (closed) and Milligan–Morgan (open) techniques [2]. For anal fissure, lateral internal sphincterotomy is the gold standard for surgical management, with an effective rate of more than 95% [3]. Local advancement flap, fistulotomy, and fissurectomy are also methods of surgery for anal fissure [2]. Fistulotomy is an effective method to treat a simple anal fistula, which can heal more than 90% of patients and reduce the possibility of incontinence. More complex fistulas involving more sphincters can be treated with rectal advancement flap, intersphincter fistula ligation (LIFT), fibrin glue, fistula plug, cutting or drainage sleeve (rubber band) [3]. And in a cohort study in 2021, Poskus et al. [4] reported 1026 patients undergoing anorectal surgery for hemorrhoids (835), anal fissures (15), low anal fistulas (162), and anal polyps (14). There were six cases (0.6%) of bleeding after hemorrhoidectomy and one case (0.1%) of bleeding after lateral internal sphincterotomy. Perianal abscess occurred in two patients (0.2%): one after hemorrhoidectomy and the other after sphincterotomy [4]. Different surgical methods involve different nerves. Is it better to analyze the disease subgroup? Maybe for different disease subgroups, the different anesthetic methods will have different results. It might provide guiding significance for us to select appropriate anesthetic methods for different anorectal diseases in clinical practice.

Fourth, there were some questions about the setting of variables; what was the variable in this study (anesthesia or ultrasound)? We know that there are certain difficulties and technical requirements for ultrasound-guided spinal anesthesia in clinical practice. But this should not be a reason not to use ultrasound. Bhardwaj et al. found that real-time ultrasound-guided spinal anesthesia could display the needle trajectory in real time; however, in patients with normal spine, the advantages of placement of block needle and block time were equivalent to those of ultrasound-assisted spinal anesthesia before operation [5]. Zhu et al. designed a retrospective analysis and compared 74 patients who underwent anorectal surgery, including 36 cases of spinal anesthesia and 38 cases of caudal epidural blocks. The results showed that the effect of spinal anesthesia in anorectal surgery was better than that of caudal epidural blocks [6]. In 2014, Manchikanti et al. compared two randomized controlled trials to explore which technique is better in patients with lumbar central spinal stenosis, namely lumbar interlaminar epidural injections and caudal epidural injections. And all the procedures were performed under fluoroscopy by a single doctor in a sterile operating room [7]. Though this trial was irrelevant to the current article, Manchikanti et al. controlled the variable of visualization. So, in the SA group, ultrasound guidance should be used.

Finally, about the volume and concentration of CEB, Li et al. designed a prospective dose-finding study and found that ropivacaine at a concentration of 0.35% (volume 14 ml) provided successful CEB in 90% of male patients, while ropivacaine at a concentration of 0.353% (volume 12 ml) provided successful CEB in 90%
of female patients. For 99% of patients, the treatment with a concentration of 0.4% and volume of 14 ml (male) and 12 ml (female) was successful [8]. This study might provide some guidance.

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