Ultrasound-guided paravertebral catheter for postoperative multimodal-analgesia in video-assisted thoracoscopy surgery

A. Parera Ruiz, M. C. Melo Cruz, E. Català, J. C. Trujillo, E. Martinez
Hospital de la Santa Creu i Sant Pau. - Barcelona (Spain)

1350

Background and Goal of Study

Post-thoracotomy pain is considered one of the most intense types of postoperative pain. Thoracotomy incision involves multiple muscle layers and possible rib injury. The use of continuous thoracic Paravertebral block (PVB) for the management of acute postsurgical pain after thoracotomy has proven to be safer and affect hemodynamic less than the epidural blockade. (1,2) At our centre, we have been using this technique for more than twenty years, but its advantages in video-assisted thoracoscopy surgery (VATS) have been poorly explored.

Material and Methods

Our aim was to review the analgesic effect of continuous PVB after video-assisted thoracoscopic surgery (VATS). We conducted a retrospective observational study of postoperative pain among patients who underwent primary lung cancer surgery, between January to November 2016.

Resultats and Discussion

All patients received combined anaesthesia technique (general anaesthesia and continuous PVB). Paravertebral catheter was placed by ultrasound-guided technique before the surgery and a bolus of 20 ml of Ropivacaine 0,375% was administered. Multimodal analgesia was achieved by 0.375% Ropivacaine infusion during the first three days after surgery (pump rate 7 ml/hour patient-controlled rescue bolus of 3 ml every 20 min) combined with non-steroidal anti-inflammatory drugs (NSAIDs) and opioids (i.v. morphine) as needed.

- Quality of analgesia was recorded by a Verbal Numerical Rating Scale (VNRS) registered at first, second and third day after surgery. We also reviewed the medium opioid rescue needed in the first 24 hours (i.v. morphine, milligrams).
- We recorded 26 patients (66% Male, 35 % female) who underwent VATS surgery. The mean age was 64 years.
- VNRS mean values were 4 +/- SD 1,23 on the first day after surgery, 1,5 +/- 1,79 SD on the second day, and 0,43 +/- 0,66 on the third day. In all cases multimodal analgesia with continuous PVB was used. All patients needed an opioid rescue, being the medium dose of 8.6 mg (SD 5,8) of intravenous morphine during the first 24 hours. No complications were found.

Conclusions

Multimodal analgesia approach with ultrasound-guided paravertebral catheter for postoperative pain control in VATS technique provided good pain relief.

References

Yamauchi et al. Journal of Cardiothoracic Surgery (2017)12:5. E. Journal of Cardiothoracic and Vascular Anesthesia Volume 10, Issue 5, August 1996, Pages 586-588.