

Application of preoperative assessment of pain induced by venous cannulation in predicting postoperative pain in patients under laparoscopic nephrectomy: a prospective study

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Abstract

Background: Postoperative pain is the most prominent concern among surgical patients. It has been reported that venous cannulation-induced pain can predict postoperative pain after laparoscopic cholecystectomy within 90 mins. Its potential in predicting postoperative pain in patients with patient-controlled intravenous analgesia (PCIA) is worth establishing. The purpose of this study was to investigate the application of VCP in predicting postoperative pain in patients with PCIA during the first 24 h after laparoscopic nephrectomy. **Methods:** 120 patients scheduled for laparoscopic nephrectomy. The nurse recorded the preoperative venous cannulation-induced pain score estimated by patients, and dichotomized the patients into VAS scores < 2.0 group or VAS scores \geq 2.0 group. After general anesthesia and surgery, all the patients received the patient-controlled intravenous analgesia (PCIA) with sufentanil. The VAS scores at rest and on coughing at 2 h, 4 h, 8 h, 12 h, 24 h, the effective number of presses and the number of needed rescue analgesia within 24 h after surgery were recorded. **Results:** Venous cannulation-induced pain score was significantly correlated with postoperative pain intensity at rest ($r_s = 0.64$) and during coughing ($r_s = 0.65$), effective times of pressing ($r_s = 0.59$), additional consumption of sufentanil ($r_s = 0.58$). Patients with venous cannulation-induced pain intensity \geq 2.0 VAS units reported higher levels of postoperative pain intensity at rest ($P < 0.0005$) and during coughing ($P < 0.0005$), needed more effective times of pressing ($P < 0.0005$) and additional consumption of sufentanil ($P < 0.0005$), and also needed more rescue analgesia ($P = 0.01$). The odds of risk for moderate or severe postoperative pain (OR 3.5, 95% CI 1.3-9.3) was significantly higher in patients with venous cannulation-induced pain intensity \geq 2.0 VAS units compared to those < 2.0 VAS units. **Conclusions:** Preoperative venous cannulation-induced pain can be used to predict postoperative pain intensity in patients with PCIA during the first 24 h after laparoscopic nephrectomy. **Trial registration:** We registered this study in a Chinese Clinical Trial Registry (ChiCTR) center on July 6 2019 and received the registration number: ChiCTR1900024352.

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Full-text

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However, the manuscript can be downloaded and accessed as a PDF.

Figures

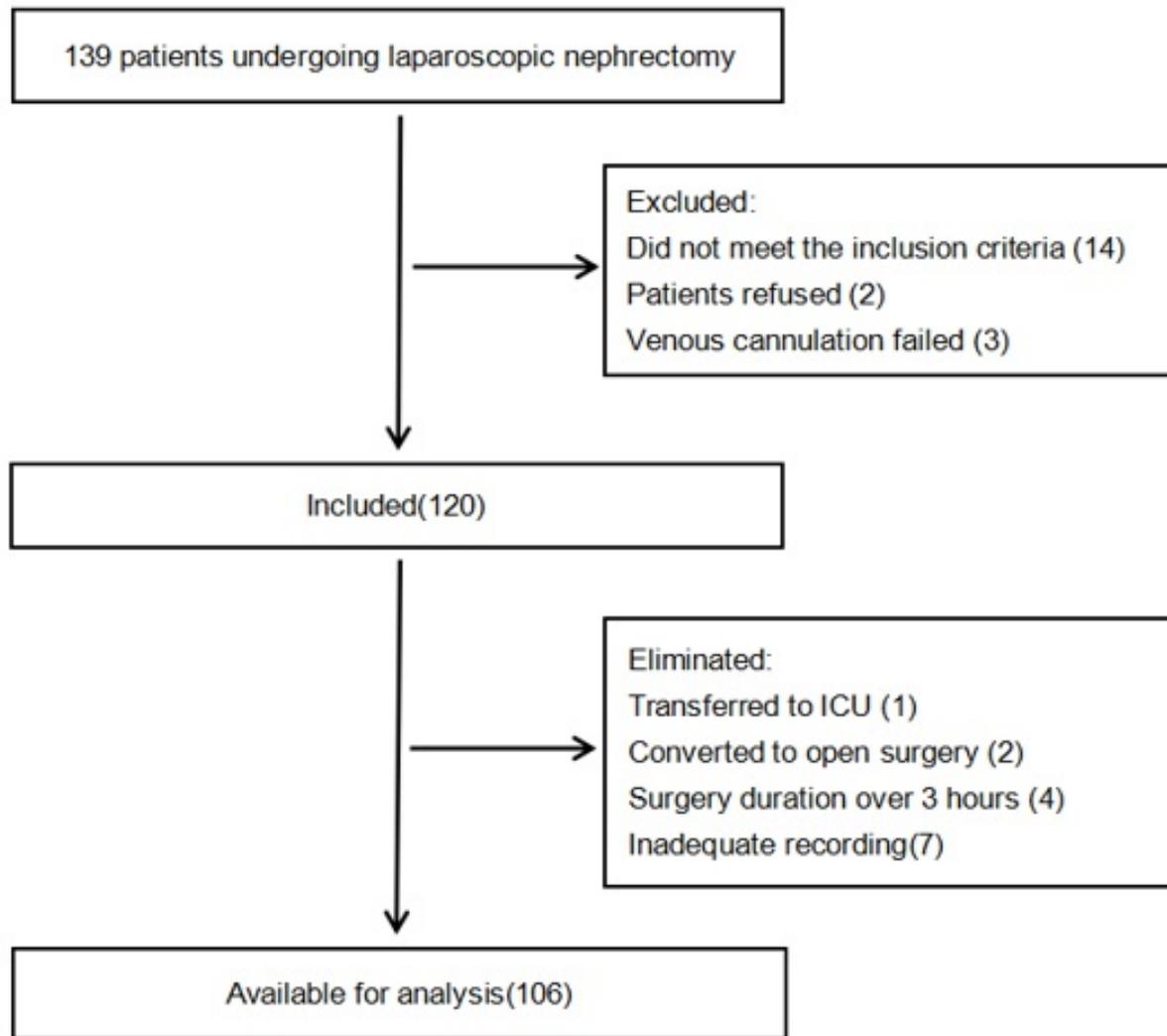


Figure 1

Enrollment flow chart of patients.

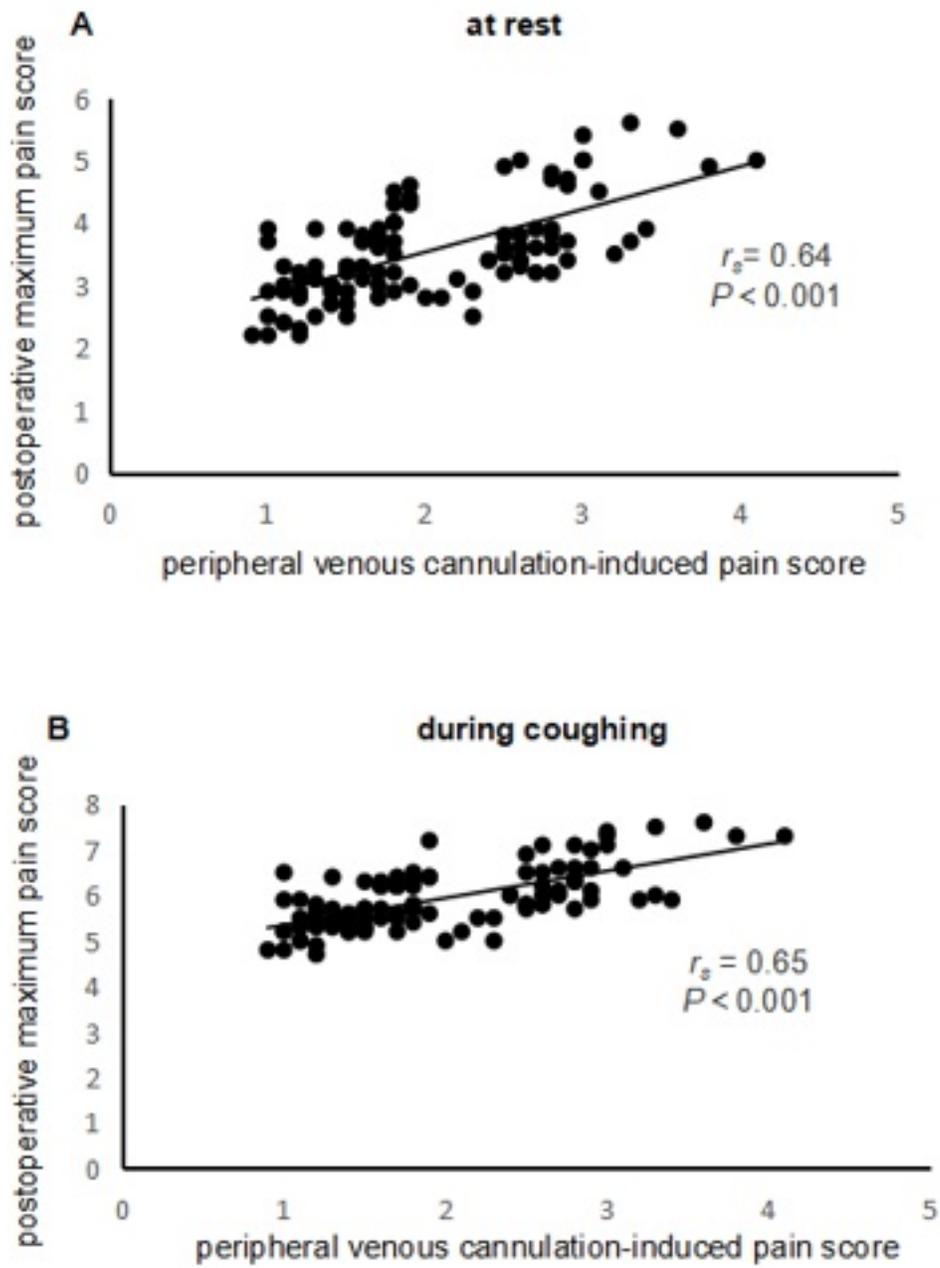


Figure 2

Scatter plot of peripheral venous cannulation-induced pain score and postoperative maximum pain score (A) at rest, (B) during coughing.