The analgesic efficiency of ultrasound-guided rectus sheath analgesia compared with low thoracic epidural analgesia after elective abdominal surgery with a midline incision: a prospective randomized controlled trial.

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Abstract:

BACKGROUND: Ultrasound-guided rectus sheath blockade has been described to provide analgesia for a midline abdominal incisions. We aimed to compare thoracic epidural analgesia (TEA) and rectus sheath analgesia (RSA) with respect safety and efficacy.

METHODS: 60 patients underwent elective laparotomies through a midline incision were assigned randomly to receive either continuous TEA (TEA group, n = 31) or intermittent RSA (RSA group, n = 29). The number of patients required analgesia, the time to first request analgesia, the interval, and the cumulative morphine doses consumption during 72 hours postoperatively, and pain intensity using visual analog score (VAS) at rest and upon coughing were reported in addition to any side effects related to both techniques or administered drugs.

RESULTS: While 17 (54.84 %) patients in TEA group, 25 (86.21%) patients in the RSA group required analgesia postoperatively, P=0.008. Cumulative morphine consumed during the early 72 hours postoperatively median (interquartile range) = 33 mg (27–39 mg), 95% confidence interval (28.63– 37.37mg) for the TEA group. While in the RSA group, it was 51 mg (45–57 mg), 95% CI (47.4–54.6 mg), P<0.001. Time for the first request of morphine was 256.77 ± 73.45 min in the TEA group versus 208.82 ± 64.65 min in the RSA group, P=0.031. VAS at rest and cough were comparable in both groups at all time points of assessment, P>0.05. Time to ambulation was significantly shorter in RSA group (38.47 ± 12.34 h) as compared to TEA group (45.89 ± 8.72 h), P=0.009. Sedation scores were considerably higher in RSA group only at 12 hours and 24 hours postoperatively than in TEA group with P= 0.041 and 0.013 respectively. The incidence of other morphine-related side effects, time to pass flatus and patients satisfaction scores were comparable between both groups.

CONCLUSION: Continuous TEA had better opioid sparing effects markedly during the early 72 hours postoperatively than that of intermittent RSA with catheters inserted under real-time ultrasound guidance, both had comparable safety perspectives, and RSA had the advantage of early ambulation. RSA could be used as an effective alternative when TEA could not be employed in patients undergoing laparotomies with an extended midline incision especially after the first postoperative day.

KEYWORDS: Postoperative analgesia; Rectus sheath analgesia; midline incision abdominal surgery; thoracic epidural analgesia.

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