A comparison between Quadratus Lumborum Block versus epidural anesthesia for postoperative analgesia in robot-assisted partial nephrectomy: a retrospective cohort study.

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Background and Aims

- Analgesic efficacy of Quadratus Lumborum Block (QLB) has been proven for lower abdominal surgery.
- However, **analgesic efficacy of QLB for other types of abdominal surgeries is unclear.**
- The aim of this retrospective cohort study was to compare QLB and epidural anesthesia (EA) with respect to postoperative analgesic effect for robot-assisted partial nephrectomy.

Methods

Design: Single-center retrospective cohort study (Yokohama City University Hospital)
Period: October 2015 and September 2018
Participants: ASA-PS 1-2 who underwent robot-assisted partial nephrectomy under general anesthesia with QLB or EA .
Primary outcome: The additional analgesic requirement within the first 24 hours.
Secondary outcomes: Intraoperative fentanyl and remifentanyl requirements, incidence of PONV, and first ambulation times.
Statistical analysis: Propensity-score matching by using patient characteristics.
The QLB and EA groups were compared using Mann-Whitney U test or chi-square test, where appropriate.
A $p<0.05$ was considered statistically significant.
Ethics: Institutional review board approval (B190100002) and informed consent

Results

- 59 cases of QLB and 52 cases of EA
- After matching, 52 cases each were analyzed.
- Even after matching, the fraction of QLB patients who received postoperative iv-PCA of fentanyl was small compared to the EA patients who received postoperative PCEA of fentanyl (Table 1.)
- **Compared to EA group, QLB group requested additional analgesics more often (median 1[IQR 0-2] vs. 0[0-0], $p<0.001$). (Table 2.)**
- Intraoperative fentanyl and remifentanyl requirements were also larger in QLB group (Table 2.)

Table 1.	QLB(n=52)	EA(n=52)	p. value
Age	62.9 ± 12.1	62.8 ± 12.8	0.969
Sex(M/F)	37/15	35/17	0.832
Height(cm)	164 ± 8.01	164 ± 9.19	0.908
Body weight(kg)	64.5 ± 10.2	66.8 ± 12.2	0.292
ASA-PS(I/II)	6/46	6/46	1.00
Hypertension	30(57.7%)	29(55.8%)	1.00
Diabetes mellitus	5(9.60%)	7(13.5%)	0.76
Neurologic disease	1(1.90%)	1(1.90%)	1
General anesthesia (Inhalation/TIVA)	49/3	48/4	1
Surgery time(min)	216 ± 56.7	207 ± 52.5	0.368
Postoperative fentanyl	12(23.1%)	27(51.9%)	0.004

Table 2.	QLB(n=52)	EA(n=52)	p. value
Analgesic use	1, [0-2]	0, [0-0]	<0.001
Intraoperative fentanyl (μg)	400, [300-500]	300, [238-331]	<0.001
Intraoperative remifentanyl (mg)	1.92 ± 0.679	1.29 ± 0.702	<0.001
PONV	19(36.5%)	11(21.2%)	0.189

Discussions

- QLB has been reported that local anesthetics reaches to thoracic paravertebral space (TPVS) and provides analgesic effect of somatic and visceral pain.
- Some cadaveric studies reported that dye has not reached to TPVB in QLB.
- Uncertain spread of local anesthetics to TPVS may be the reason why QLB group requested more additional analgesics.

Conclusions

QLB does not appear to provide advantage over EA regarding analgesia for robot-assisted partial nephrectomy.