



# Efficacy of thoracic paravertebral nerve block for patients who undergo video-assisted thoracoscopic surgery - randomised controlled trial-

Hironobu Ueshima<sup>1</sup>, Hiroshi Otake<sup>1</sup>, Mari Ichimura<sup>1</sup>, Akira Kitamura<sup>2</sup>

1 Department of Anesthesiology, Showa University Hospital, Tokyo, Japan.

2 Department of Anesthesiology, Saitama international medical center, Saitama, Japan

## 【Introduction】

○There were a few reports which investigated the analgesic efficacy and the safety for the thoracic paravertebral nerve block (TPVB) for the thoracic surgery.  
○We investigated the analgesic efficacy of the TPVB in video-assisted thoracoscopic surgery compared with the thoracic epidural analgesia.

## 【Material and Method】

Study type: A prospective study divided into E and T groups

Condition: video-assisted thoracoscopic surgery

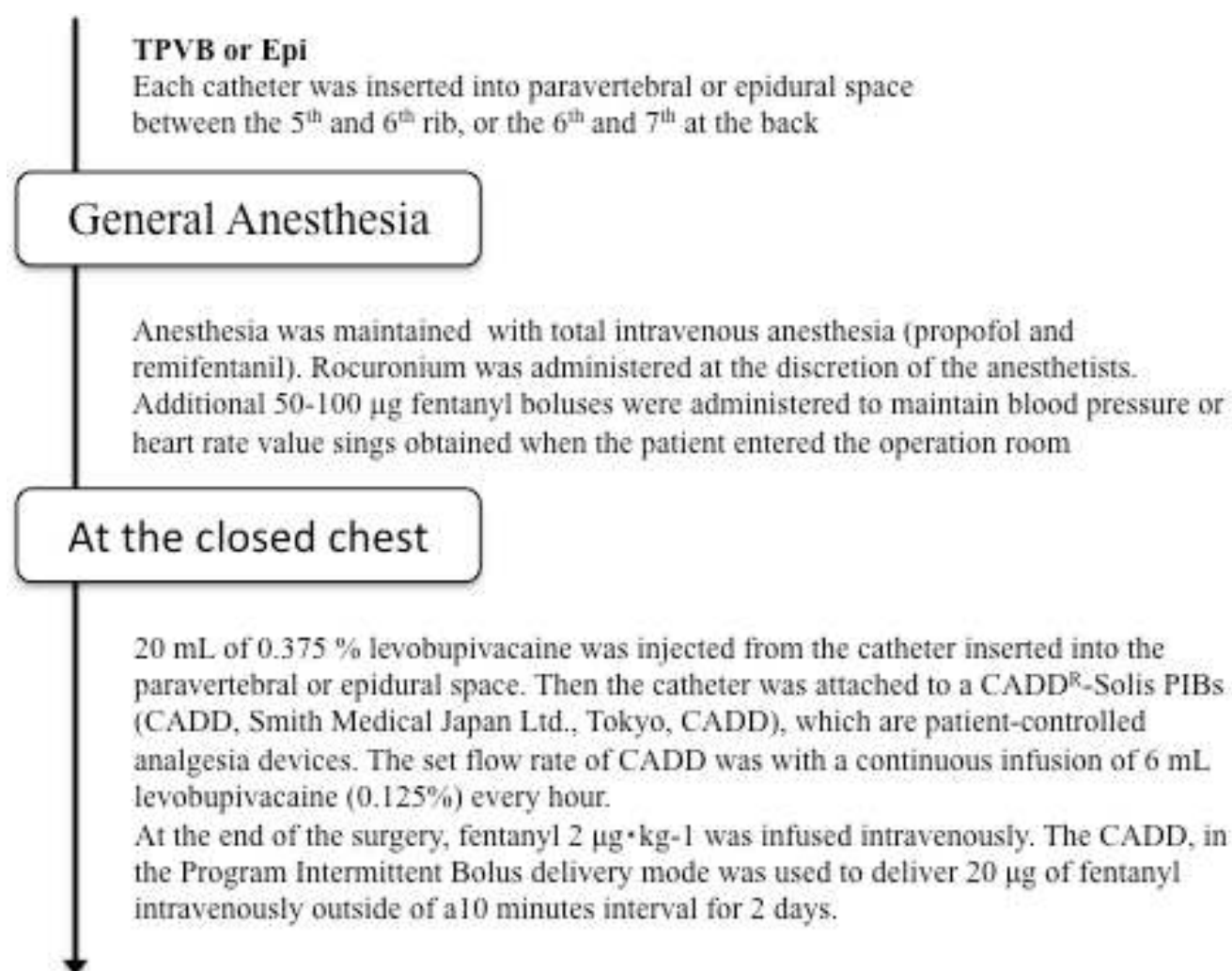
Study period: From July 2013 to July 2014

Excluded cases: cases having corrective secondary surgery, an allergic reaction to levobupivacaine, and cases having severe heart, renal or liver dysfunction

E group: general anesthesia and continuous epidural anesthesia block

T group: general anesthesia and continuous TPVB

## 【Flow chart】



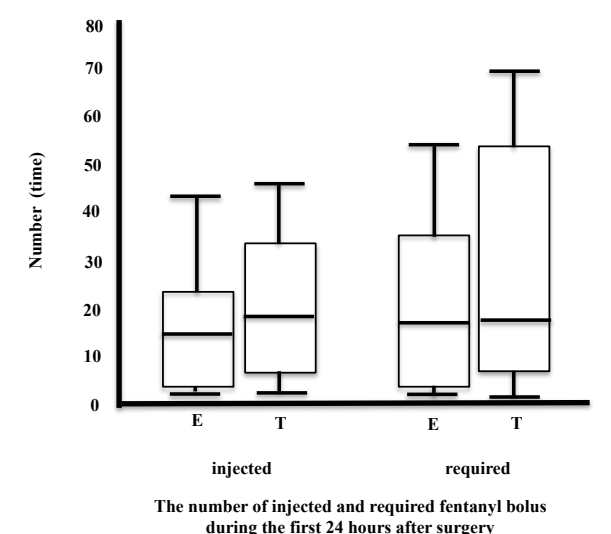
○The primary outcome measured was the number of injected fentanyl boluses during the first 24 hours after surgery.  
○The secondary outcome measured was the number of required additional fentanyl doses. A numerical rating scale (NRS) was used to determine a pain score during the first 24 hours after surgery.

## 【Result】

### <Patient characteristic>

	E group (n=40)	T group (n=40)
Age (years)	65 (24-79)	69 (54-83)
BMI (kg/m <sup>2</sup> )	23.0 (13.5-37.0)	22.0 (19.2-31.6)
ASA classification (I/II)	5/35	3/37
Anesthesia time (min)	257.5 (185-365)	202.5 (125-305)
Operation time (min)	207 (150-340)	150 (105-255)
An amount of fentanyl in perioperative period (µg)	400 (100-900)	400 (100-800)
An amount of remifentanyl in perioperative period (mg)	1.91 (0.2-4.27)	1.68 (0.1-5.46)

### < Number of fentanyl boluses >



### <Pain Scores>

	E	T	P-value		E	T	P-value
rest				move			
1	0 (0-4)	2 (0-3.25)	0.68	1	0 (0-4)	3 (0-3)	0.13
2	0 (0-4)	3 (0-4)	<0.05	2	0 (0-4)	3 (0-5)	<0.05
4	0 (0-1)	3 (0-4)	<0.05	4	0 (0-4)	3 (0-3.25)	<0.05
6	0 (0-2.25)	3 (0-3)	<0.05	6	3 (0-3)	3 (0-3.25)	0.35
12	1 (1-3)	3 (0-3)	<0.05	12	3 (0-5)	3 (0-4)	0.68
18	1 (1-3)	3 (0-4)	<0.05	18	3 (0-5)	3 (0-5)	0.27
24	1 (1-2)	3 (0-3)	<0.05	24	4 (0-5)	4 (0-5)	0.37

Numerical rating scale (NRS) pain score during the first 24 hours after surgery. Data expressed as median (interquartile)(times).

## 【Discussion】

The TPVB is as effective as the epidural analgesia in video-assisted thoracoscopic surgery.

The spread of local anesthetic for TPVB is almost the same as epidural anesthesia. Considering that epidural anesthesia is a landmark technique, ultrasound guided-TPVB may be safer than the epidural analgesia in video-assisted thoracoscopic surgery.

## 【Conclusion】

The number of injected fentanyl bolus to the T group was equal to the E group.

The TPVB is as effective as the epidural analgesia in video-assisted thoracoscopic surgery.

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