Effect of catheter type on dye spread in the thoracic paravertebral space: a cadaveric study of 13 subjects.

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Background and aims: Using a thoracic paravertebral (TPVB) catheter for continuous infusion is challenging because of inconstant diffusion. We hypothesized that the type of catheter could play a role in local anesthetic diffusion.

Methods: After approval by the Ethical Committee, we studied 13 thawed non-embalmed adult bodies. Under ultrasound guidance, single shot TPVB injections of 10 ml of colored dye were performed in each subject followed by placement of one of four different TPVB catheters. The Arrow® epidural catheter (flexible and resistant to collapse), the BBraun® epidural catheter (multiple lateral openings), the Pajunk SonoLong Curl® (curled end) and the Pajunk SonoLong® (metal guide) were tested. 10 ml of radiological contrast were injected through each catheter and the spread was measured as the number of thoracic paravertebral spaces (nTPVSs) seen with fluoroscopy (Figure 1, two left panels). The spread (nTPVSs) obtained after the single shot injection of dye was calculated after surgical dissection (Figure 1, right panel).

Figure 1

Results: 47 paravertebral *single shot* catheters (dissection impossible in 5 cases) were studied. The nTPVSs obtained with *single shot* and catheter injections was not significantly different. Table 1 shows the nTPVSs covered by injection through the four catheters.

	Arrow® N=12	BBraun® N=13	Curl® N=12	SonoLong® N=10	
Single shot mean (SD)	2.6 (1.2)	2.5 (1)	3.3 (1.3)	2.7 (1.3)	P=0.41
Catheter mean (SD)	2.6 (1.2)	2.5 (1.1)	2.6 (1.4)	2.8 (1.6)	P=0.9

Table1

Conclusions: Thoracic paravertebral spread was not influenced by the catheter type.

The authors declare no conflict of interest