Influence of Caudal traction of Ipsilateral arm on Ultrasound Image for Supraclavicular Central Venous Catheterization

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OBJECTIVE

To determine the effect of “Caudal traction of the ipsilateral arm to the knee” on the US view of SCV using a supraclavicular approach

METHODS

Design	A prospective observational study
Patients	20 infants 20 pediatric patients aged 1–5 years 20 adult patients
Intervene	Neutral, Caudal traction, and Abduction
Main outcomes	Length of puncturable SCV (LL) Diameter of SCV (D) Available angle for needle insertion (α)

RESULTS

		Neutral	Caudal traction	Lateral traction
Infants	LL	0.98 ± 0.24	$1.35 \pm 0.31^\dagger$	$0.58 \pm 0.21^\dagger$
	D	0.27 ± 0.07	0.27 ± 0.08	$0.26 \pm 0.07^\dagger$
	Angle	44.5 ± 6.5	$55.0 \pm 7.1^\dagger$	$29.1 \pm 7.1^\dagger$
Children	LL	1.23 ± 0.35	$1.65 \pm 0.49^\dagger$	$0.80 \pm 0.47^\dagger$
	D	0.42 ± 0.10	0.39 ± 0.08	0.38 ± 0.13
	Angle	48.2 ± 7.5	$58.4 \pm 9.7^\dagger$	$34.5 \pm 16.7^\dagger$
Adults	LL	2.61 ± 1.04	$3.23 \pm 0.89^\dagger$	$1.65 \pm 0.61^\dagger$
	D	0.71 ± 0.16	$0.77 \pm 0.13^\dagger$	0.69 ± 0.19
	Angle	58.7 ± 16.3	$72.4 \pm 12.3^\dagger$	$43.7 \pm 15.3^\dagger$

Limitations

- the relationship between arm traction and the success rate
- Investigator who recorded the ultrasonic images was not blinded to the arm traction
- We used the curved probe in adult patients

References

1. *Br J Anaesth* 2013;111:788-92
2. *Br J Anaesth* 2007;98:509-14
3. *Paediatr Anaesth* 2015.

Conclusion

Caudal traction of the ipsilateral arm increases the puncturable length of the SCV and the available angle for needle insertion without a significant decrease in SCV diameter
→ We therefore recommend this simple maneuver during the SC approach for SCV catheterization