Oral MO-3

(13:50 - 14:00)

Extrinsic vascular compression effects of neck tie on dynamic neck MRA

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Purpose: To evaluate the compression effects of a tight neck-tie on the internal jugular veins using ECTRICKS-CEMRA.

Materials and Methods: In a prospective study, 10 young and healthy volunteers underwent head and neck ECTRICKS-CEMRA and 2D-PC for velocity encoding on a GE Signa 3.0 T system (Signa VH/*i*, GE) with 9.2/1.34/30 (TR/TE/FA). Total 15 ml of Gd-DTPA 0.5M followed by 15 ml normal saline was injected in the antecubital vein with infusion rate of 3 ml/sec. CEMRA and velocity encoding were performed twice at the neutral state and at the tight neck-tied state of each volunteer. Grade of extrinsic compression and changes of velocity of both internal jugular veins were analyzed.

Results: All of 10 volunteers showed complete occlusion of both internal jugular veins during the tight neck-tied state with prominent paravertebral collateral circulations on ECTRICKS-CEMRA. Mean velocity of internal jugular veins on tight neck-ties reduced to 60.4% of the neutral state (19.4/32.2 cm/sec). However, mean velocity of both internal carotid arteries did not reduce significantly with tight neck-ties (69.4/80.7 cm/sec).

Conclusion: Tight neck-ties induced significant extrinsic compression, and reduced the mean velocity of both internal jugular veins on ECTRICKS-CEMRA and velocity encoding. Extrinsic compression of the neck by tight neck-ties during social life may lead to sudden secondary intracranial venous hypertension.