Effects of variations of technique on cervical PAIVMs

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The aim of this study was to investigate the effect that variations in technique during the application of PAIVMs to the cervical spine have on movement of the underlying vertebra and on PAIVM stiffness behaviour. Real-time ultrasound images were captured while simultaneously measuring force and displacement during unilateral PA movements to the mid cervical spines of asymptomatic subjects. Two variations of technique were assessed: the presence or absence of the therapist stabilizing the contralateral side with their and the movement with and without displacement of intervening soft tissue from between the point of contact and the underlying vertebra. When the contralateral side was stabilised, the movement of the underlying vertebra was predominantly in a PA direction (in one example 5.7 mm PA and 1.0 mm medial movement). When contralateral stabilisation was not employed, the direction of movement of the vertebra was often different (in the above example 3.1 mm PA and 4.5 mm medial). In addition, the stiffness recorded when contralateral stability was provided was greater and more repeatable than when unsupported. Manual displacement of soft tissue prior to the technique reduced the intervening depth of soft tissue by greater than 50% resulting in the measured PAIVM movement being stiffer, but more closely approximating the movement of the underlying vertebra. Supporting the opposite side and displacing intervening soft tissue during unilateral PAs to the cervical spine produce a more PA directed movement and provide clearer information about movement of the underlying vertebra than techniques performed without these variations.