1342971 - NOVEL SUBPECTORAL ULTRASOUND GUIDED INFRACLAVICULAR BLOCK

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Introduction: Ultrasound guided infraclavicular blocks are well known. Often, assumptions of cord positions are made when sonographic visualisation of all three are not possible.1-3 The posterior cord is the preferred site for local anesthetic deposition, but is the furthest from the skin in the deltopectoral view and not visualised in 2% of cases. This may require the use of the axillary artery as a surrogate landmark for placement of local anesthetic.3 The objective of this study was to compare the ease of infraclavicular plexus identification via the deltopectoral view (DP) with a novel subpectoral view (SP).

Methods: After institutional ethics approval, the study was performed in volunteers and cadavers. With each cadaver supine, the arm was placed in 110° abduction. A 38 mm 5-14 MHz transducer (L14-5/38 GPS; Ultrasonix, Richmond, BC, Canada) was placed obliquely on the lateral chest wall under the pectoral fold, aiming at the corocoid. Using an out of plane approach, an 8 cm 19 G needle (Ultrasonix, Richmond, BC) was inserted and advanced towards the posterior cord using the SonixGPS needle guidance system (Ultrasonix, Richmond, BC). 1 mL of green dye was injected through the needle. The procedure was performed on both sides of each cadaver. A blinded anatomist dissected the infraclavicular area to allow accurate identification of dye location followed by photography. In 10 adult volunteers, an identical method was used to image the plexus in the SP projection followed by imaging in the standard DP projection. Distance of the posterior cord from the skin was measured with the caliper function.

Results: In all 3 cadavers, correct dye placement via the SP approach was demonstrated by dissection. In volunteers, the skin to posterior cord distance (mean ± SD) was 33 ± 6.4 mm and 21 ± 3.6 mm in the DP versus SP view (p < 0.001). Although the posterior cord was visualized in all the studies, the lateral and medial cords and pleura were more reliably visualized in the DP view.

Discussion: This study provides a sonoanatomical basis for a shorter and more direct access to the posterior cord for placement of local anesthetic during infraclavicular block.