ePoster session 5 – Station 6

EP175 ASSESSING DIAPHRAGMATIC FUNCTION USING POINT OF CARE ULTRASOUND AFTER INTERSCALENE BRACHIAL PLEXUS BLOCK

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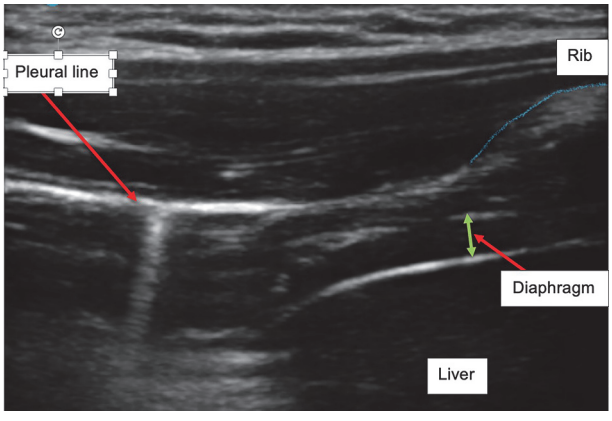
Background and Aims Interscalene brachial plexus block confers a high risk of transient phrenic nerve palsy, which may lead to respiratory compromise. Novel ultrasonographic approaches use a high-frequency linear probe to evaluate diaphragmatic functionary simple to perform and easy to teach, therefore accessible to the everyday anaesthetist. We evaluated two techniques in assessing diaphragmatic function after interscalene brachial plexus block.

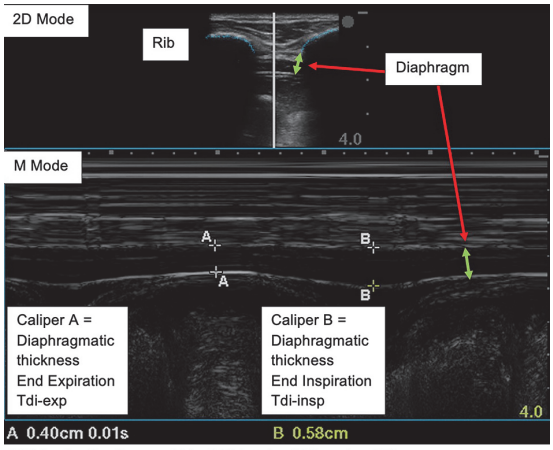
Methods Two ultrasound techniques: 1) Change in thickness and calculation of the thickening fraction in M-mode as described by Santana et al in 2020 2) Qualitatively and quantitatively determining diaphragmatic excursion in the simplified technique described by El-Boghdadly et al in 2017. Patient parameters including body mass index and respiratory comorbidity, peak expiratory flow rate and local anaesthetic type and volume were recorded.

Results We collected data on 21 patients (all gave consent). Average BMI 28.6 (range 20-42) and average age 54.6 years (range 25-70). 3 patients required oxygen in recovery, 1 had subjective dyspnoea. Ultrasonographic data on diaphragmatic thickening and excursion can be seen in the attached table of results. Average total scan time scan time was 10 minutes (range 5-20).

Conclusions Our results show a greater decrease in both diaphragmatic thickening fraction and excursion on the side of the interscalene block. Point of care ultrasound is a useful technique in identifying phrenic nerve palsy following ultrasound-guided interscalene brachial plexus block. It is a simple and effective technique that can be easily learned, readily applied, and utilised in the acute setting to provide an immediate picture of diaphragmatic function.



Abstract EP175 Figure 1 Pleural Excursion Ultrasound Image (courtesy of Peter Daum co-author)



Abstract EP175 Figure 2 Diaphragm Thickness Ultrasound Image (courtesy of Peter Daum co-author) with thickening fraction calculations

Results table.docx

EP176 ERECTOR SPINAE PLANE BLOCK VS. PECTO-INTERCOSTAL FASCIAL PLANE BLOCK VS. CONTROL FOR STERNOTOMY: A PROSPECTIVE RANDOMIZED TRIAL

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Background and Aims Many patients that undergo cardiac surgery via median sternotomy experience uncontrolled postoperative pain leading to prolonged intubation, impaired recovery, and the development of chronic pain. The erector spinae plane (ESP) block and the pecto-intercostal fascial (PIF) plane block have been used as multimodal analgesia for sternotomy pain. The purpose of this study was to compare the analgesic efficacy of ESP blocks and PIF blocks versus no block in patients under general anesthesia undergoing sternotomy for cardiac surgery.

Methods This randomized prospective control trial was conducted at an academic care center and included 90 participants. The primary endpoint was opioid consumption during post operative days (POD) 0, 1, 2, 3, 4, and 5. Secondary endpoints included Visual Analog Scale pain scores, time to extubation, ICU length of stay (LOS), total postoperative LOS, and nausea/vomiting after extubation.

Results Among the patients included, 30 received bilateral ESP block, 30 received bilateral PIF block, and 30 received no block. No significant differences in post-operative opioid consumption as measured in MME on POD 0, 1, 2, 3, 4, or 5 were seen between groups. When analyzing VAS scores at POD 0,1,2, and 3 between groups, there was a statistically significant difference between the ESP block group compared to the control group.