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Efficacy of Suprascapular Nerve Block Compared with Subacromial Injection: A Randomized Controlled Trial in Patients with Rotator Cuff Tears

Ashish Gupta, MBBS, MSC, FRACS, AUSTRALIA
Matthew Peter Wilkinson, MBBS FRACS, AUSTRALIA
Joseph Coory, MBBS , AUSTRALIA
Adam Parr, MBBS , AUSTRALIA

Townsvile General Hospital
TOWNSVILLE, QLD, AUSTRALIA

Summary:
Rotator cuff tears (RCT) are the most common cause of shoulder pain. The aim of this study was to determine if ultrasound guided suprascapular nerve blocks (SSNB) were superior to ultrasound guided subacromial (SA) injections for improving shoulder function in patients with RCT.

Abstract:
Introduction & aims –
Rotator cuff tears (RCT) are the most common cause of shoulder pain. The aim of this study was to determine if ultrasound guided suprascapular nerve blocks (SSNB) were superior to ultrasound guided subacromial (SA) injections for improving shoulder function in patients with RCT.

Method
A double-blinded randomized control trial was performed. Patients with symptomaticRCT quantified by diagnostic ultrasound and magnetic resonance imaging were included. Either a single ultrasound guided SSNB or ultrasound guided SA injection was administered to each patient. In addition all patients commenced Murdoch Protocol Physiotherapy for RCT the week after injection. Shoulder function was measured using the Modified Constant-Murley Score (CM) at 2, 6 and 12 weeks and compared between the two modalities.

Results
60 patients (38 males, 22 females) were recruited in the study. The mean age was 63.2 years. The pre-intervention CM score of 32.5 (SD10) for SSNB was not statistically significant from 38.9 (SD16) for SA, p=0.19. At the 2 week follow-up the SSNB score of 50.2 (SD12.7) was similar to the SA CM score of 48.2 (SD7.0) and did not reach significance. At 6 weeks the SSNB CM score had statistically improved compared with the SA, p=0.08, with a CM score of 47.17 (SD15.3) vs 36.9 (SD12.8) respectively. At the 12 week follow-up SSNB had continued to show significant improvement, p=0.023 with a score of 63.9 (SD12.11) vs 50.9 (SD17.7). Using Mann-Whitney U test (non-parametric) SSNB was shown to be associated with better outcomes at 12 weeks in power (p=0.024) and CM total (p=0.037) compared with SA.

Pre-injection patients with BMI>30 trended to have increased pain scores (6.0 vs 3.4) and lower CM scores (37.4 vs 34.0). Post injection these patients appeared to do better than patients with a BMI <30 (CM score at 2 weeks 49.1 vs 55.2, 6 weeks 43.0 vs 47.6, and 12 weeks 54.09 vs 66.3).

Conclusions
SSNB is superior to SA injections for improving shoulder function and power in patients with symptomatic rotator cuff tears. This is particularly evident at 12 weeks post-intervention. Further prospective randomized controlled

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studies are needed to confirm if this improvement is significant long-term.