

Comparative Analysis of Efficacy of Inter-Scalene Block versus Shoulder Block for Post Operative Analgesia in Patients Undergoing Shoulder Arthroscopic Surgeries

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ABSTRACT

Background: Arthroscopy of the shoulder is well established as a diagnostic procedure. Hence; the present study was conducted for comparing the post operative analgesic efficacy between inter-scalene block versus shoulder block for shoulder arthroscopic surgeries.

Materials & Methods: A total of 40 patients scheduled to undergo shoulder arthroscopic surgery were enrolled. Complete demographic and clinical details of all the patients were obtained. A Performa was made and the complete medical and family history of all the patients was recorded separately. Random division of all the patients was done into two study groups with 20 patients in each group as follows: Group A- Inter-scalene block, and Group B- Shoulder block. Baseline hematological and biochemical profile of all the patients was recorded. Intraoperative and postoperative findings were evaluated. Postoperative pain was assessed in all the patients. All the results were recorded and analyzed using SPSS software. Chi-square test and student t test was used for evaluation of level of significance.

Results: Mean age of the patients of group 1 and group 2 was 48.3 years and 50.7 years respectively. Majority proportion of patients of both the study group were males. Mean BMI of the patients of group 1 and group 2 was 26.3 Kg/m² and 25.9 Kg/m². Mean VAS was significantly higher among patients of group 2 in comparison to patients of group 1 at different postoperative time intervals.

Conclusion: Inter-scalene block was found to be better in comparison to shoulder block in controlling postoperative pain among patients undergoing shoulder arthroscopic surgeries.

KEYWORDS: Inter-Scalene Block, Shoulder Block, Arthroscopic.

INTRODUCTION

Arthroscopy of the shoulder is well established as a diagnostic procedure. It carries a greater degree of accuracy than conventional imaging techniques and in addition allows the assessment of instability and the degree of mechanical derangement inside the joint. Arthroscopic surgical procedures in the shoulder are in the developing stage. Arthroscopic acromioplasty for impingement syndrome has been shown to be a safe, effective procedure and probably better than conventional surgery.^{1,2} In the older patient, arthroscopic

debridement of the rotator cuff is very effective at relieving pain. Arthroscopic surgery for removal of loose bodies and of a torn glenoid labrum would be the current recommended procedure rather than open surgery. Other rapidly developing areas of potential benefit are in the arthroscopic stabilisation of the dislocating shoulder and synovectomy of the shoulder in rheumatoid arthritis and other synovial conditions.^{3,4} Ogilvie-Harris DJ et al was performed on 439 patients over a 10-year period: these patients are reviewed after a minimum follow-up of one

year. Diagnostic arthroscopy is known to be valuable and we have found that arthroscopic surgery also is safe and effective. It was useful in treating frozen shoulder, early osteoarthritis, isolated tears of the glenoid labrum and lesions of the biceps tendon. It was less useful in treating partial tears of the rotator cuff, tendonitis and severe osteoarthritis, and of little value in treating complete tears of the rotator cuff or in treating patients in whom previous operations on the rotator cuff had failed.⁴

Hence; the present study was conducted for comparing the post operative analgesic efficacy between inter-scalene block versus shoulder block for shoulder arthroscopic surgeries.

MATERIALS & METHODS

The present study was conducted for comparing the post operative analgesic efficacy between inter-scalene block versus shoulder block for shoulder arthroscopic surgeries. A total of 40 patients scheduled to undergo shoulder arthroscopic surgery were enrolled. Complete demographic and clinical details of all the patients were

obtained. A Performa was made and complete medical and family history of all the patients was recorded separately. Random division of all the patients was done into two study groups with 20 patients in each group as follows: Group A- Inter-scalene block, and Group B- Shoulder block. Baseline hematological and biochemical profile of all the patients was recorded. Intraoperative and postoperative findings were evaluated. Postoperative pain was assessed in all the patients. All the results were recorded and analyzed using SPSS software. Chi-square test and student t test was used for evaluation of level of significance.

RESULTS

The mean age of the patients of group 1 and group 2 was 48.3 years and 50.7 years respectively. Majority proportion of patients of both the study group were males. Mean BMI of the patients of group 1 and group 2 was 26.3 Kg/m² and 25.9 Kg/m². Mean VAS was significantly higher among patients of group 2 in comparison to patients of group 1 at different postoperative time intervals.

Table 1: Demographic data

Variable	Group 1	Group 2
Mean age	48.3	50.7
Mean BMI	26.3	25.9
Males (n)	15	14
Females (n)	5	6

Table 2: Comparison of VAS

VAS	Group 1	Group 2	p-value
Baseline	4.9	5.2	0.001 (Significant)
1 day postoperatively	3.2	5.1	0.000 (Significant)
2 days postoperatively	2.5	4.9	0.002 (Significant)
4 days postoperatively	2.1	4.5	0.000 (Significant)
6 days postoperatively	1.8	4.2	0.001 (Significant)

DISCUSSION

Oral The origins of arthroscopy reach back to the 19th century when, in 1879, Nitze (1848–1706) devised the first modern cystoscope and demonstrated that it was possible to perform operations through this instrument. Jacobaeus (1879–1937) adapted the cystoscope for the examination of the pleural and peritoneal cavities in 1910. Eight years later, Takagi (1888–1963) of Tokyo University became the first to apply the principles of endoscopy to a knee joint when he introduced a cystoscope into a cadaver knee. Professor Takagi continued to develop the arthroscope in Japan until his studies were disrupted by the outbreak of World War II.

In 1921, Bircher (1882–1956) used a modified Jacobaeus laparoscope to visualize the interior of the knee in 18 patients in Switzerland and later published his findings on posttraumatic arthritis and the diagnosis of meniscal pathology.^{5, 6} The diagnosis of frozen shoulder is established clinically, but arthroscopic evaluation of the intraarticular structures is valuable. At arthroscopy-controlled release of the tight structures may be of benefit, but this is as yet unproven. If at arthroscopy there is other intra-articular pathology the prognosis is worse. The arthroscopy is most valuable in the diagnosis of instability especially subtle degrees of instability. The arthroscopic repair of the dislocating shoulder is in

evolution at the current time. Bioresorbable staples and suture capsular repair offer the greatest potential for dealing with this problem arthroscopically. Where there is a torn glenoid labrum in the absence of instability, resection of the labrum is a beneficial procedure. Decreased comorbidity, shorter rehabilitation, and the resulting socio-economic benefits are proven advantages. Arthroscopic surgery has improved the understanding of joint pathology and expanded therapeutic options for previously unknown or less understood joint disorders and continues to develop into a tool vital to future advances in orthopedic surgery.⁷⁻¹¹ Hence; the present study was conducted for comparing the post operative analgesic efficacy between interscalene block versus shoulder block for shoulder arthroscopic surgeries.

Mean age of the patients of group 1 and group 2 was 48.3 years and 50.7 years respectively. Majority proportion of patients of both the study group were males. Mean BMI of the patients of group 1 and group 2 was 26.3 Kg/m² and 25.9 Kg/m². Mean VAS was significantly higher among patients of group 2 in comparison to patients of group 1 at different postoperative time intervals. Fredrickson, M. J et al hypothesized that the addition of a continuous interscalene ropivacaine infusion to a single-injection interscalene block would improve analgesia after minor arthroscopic shoulder surgery. At surgery conclusion, patients were randomly assigned to catheter removal in the postanesthesia care unit ("SS," n = 30) or to an elastomeric infusion of ropivacaine 0.2% 2 mL/hr with patient-controlled 5-mL boluses every hour ("Continuous," n = 31). Median (quartiles) worst numerical rating pain score was lower in the Continuous group on day 1 on movement and at rest but was similar between groups on day 2. Median (quartiles) tramadol tablet consumption was lower in the Continuous group on both day 1 and day 2. Adverse effects of treatment were similar between groups except for numerically rated arm numbness, which was higher for the Continuous group. One patient in the SS group required 2 nights of hospitalization for intravenous opioid. After minor arthroscopic shoulder surgery, the addition of a continuous interscalene ropivacaine infusion to a single-shot interscalene block reduces pain, especially with movement, during the first 24 hrs.¹²

CONCLUSION

Inter-scalene block was found to be better in comparison to shoulder block in controlling postoperative pain among patients undergoing shoulder arthroscopic surgeries.

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