Preoperative and Postoperative Clinical Comparison in Patients with Brachial Plexus Injury with or without Nerve Recording

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INTRODUCTION

• The accuracy of a diagnostic test for classifying a patient is a key point to make a treatment decision.

• In order to establish a diagnostic and offer a treatment in a patient with brachial plexus injury we have to base on physical examination and complementary paraclinic studies.

• The presurgical low specificity and positive predicted value in the electrophysiology studies are the main indication to perform an intraoperative nerve recording.

OBJECTIVES

• Determine whether patients with brachial plexus injury and intraoperative nerve recording have better postoperative clinical evaluation, compared with those without the intraoperative study.

METHODS

• Postoperative patients with brachial plexus injury were evaluated, from 2007 to 2014.

• Two groups were formed, depending on the performance or absence of intraoperative nerve recording.

• Their pre and post-surgery videos were reviewed and rated according to a scale based on the Narakas and Raimondi valuation table.

• 25 patients, 17 men (68.0%) and 8 women (32.0%), with age range of 1-54 years (mean 28.1 ± 1.28).

• 52% were right brachial plexus injuries and 48% left.

• 15 patients were in the group with intraoperative nerve recording and 10 patients in the group without nerve recording.

• Etiology:

  - All postoperative assessments showed a statistically significant improvement (p < 0.05) regardless either of the presence or the absence of intraoperative nerve recording.

  - During the postoperative evaluation of the group with intraoperative monitoring; in comparison to the group without nerve recording.

  - Shoulder external rotation and movement of the middle fingers obtained statistically significant improvement (p < 0.05).

  - Thoracobrachial adduction was found with bordering statistically significant value (p = 0.084).

  - In the postoperative evaluation, 52.4% of patients presented with intraoperative nerve recording arose in 1 or more of the ranges of the rating scale; whereas in patients without it, only 22.7% had increased.

  - None of the patients (regardless of the performance or absence of intraoperative nerve recording) gave a lower score while postoperative assessment.

CONCLUSIONS

• The intraoperative nerve recording studies are a reliable indicator of the lesion depth and subsequent repair results. Also minimizes the risk of intraoperative nerve injury.

• This studies provide better clinical outcomes in the postoperative period in patients with brachial plexus injury; this can be attributed to the intraoperative information obtained during brachial plexus exploratory surgery.