Traumatic brachial plexus palsy

Adult post traumatic brachial plexus injury is unfortunately a rather common injury in young adults. In India the most common scenario is of a young man injured in a motorcycle accident. Exact incidence figures are not available but of the injuries presenting to us about 90% invole the above combination This article reviews peer-reviewed publications including clinical papers, review articles and Meta analysis of the subject. In addition, the authors' experience of several hundred cases over the last 15 years has been added and has influenced the ultimate text. Results have been discussed and analysed to get an idea of factors influencing final recovery. It appears that time from injury and number of roots involved are most crucial [1].

Treatment

Brachial plexus palsy is a surgically manageable condition. Re-animating the shoulder is a high priority for restoring upper extremity function. Methods for reinnervating injured nerves include the transfer of a healthy nerve or fascicle distal to the site of injury, or grafting a healthy sensory nerve to restore motor function. Studies aiming to compare these two techniques for restoring shoulder abduction have yielded conflicting results.

Hardcastle et al., conducted a systematic review and meta-analysis following the PRISMA guidelines. They reviewed the PubMed database for studies comparing nerve transfer and nerve grafting for shoulder abduction published by December 2018. Outcomes using the Medical Research Scale (MRC) for muscle strength were assessed using a random effects model meta-analysis. Five studies comprising a total of 212 patients (n = 158, nerve transfer; n = 54, nerve grafts) were used for the analysis. The rate of functional recovery of shoulder function was slightly better for nerve transfer (n = 114/158, 72%) than for nerve graft patients (n = 36/54, 67%). However, this was not statistically significant (OR 1.34, 95% CI 0.27-6.72, I2 = 62.9%). Nerve transfer and grafting are similarly effective in terms of shoulder abduction. Future prospective studies are needed to validate the results and identify the optimal shoulder re-animation strategy in patients with brachial plexus injuries [2].

Case series

The purpose of a study was to compare two populations (from Argentina and Germany) who suffered a traumatic BPI after a motorcycle accident to identify predictors of BPI and brain injury severity.

Univariate and multivariable intergroup comparisons were conducted, and odds ratios were calculated to assess the associations between the different demographic, morphometric, and trauma-related variables, and the type and severity of patients' injuries. Pearson correlation coefficients were generated to identify statistically significant correlations.

A total of 187 patients were analyzed, 139 from Argentina and 48 from Germany. The two countries differed significantly in age and several morphometric and trauma-related variables. The clinical presentation was also convincingly different in the two countries. The following three variables remained as statistically significant predictors of a complete (vs. partial) BPI: living in Argentina ($p < 0.001$), presenting prior to 2015 ($p = 0.004$), and greater estimated speed at the time of impact ($p = 0.074$). As for BPIs, a disproportionate percentage (85.6%) of more severe brain injuries occurred

in Argentinian patients ($p < 0.001$) and among those whose accident involved striking a stationary vertical object.

This study identified several factors that might be considered when planning governmental policies and education initiatives to reduce BPI and brain injuries related to motorcycle use. Level of evidence II-2 (evidence obtained from case-control studies) [3].

1)
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2)
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3)
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