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Glenoid Osteotomy with Various Tendon Transfers for Brachial Plexus Birth Palsy: Clinical Outcomes

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Abstract : Background: Posterior shoulder dislocation is one of the disabling complications of brachial plexus birth injury (BPBI), and various treatment options, including capsule and surrounding muscles release for open reduction, humeral derotational osteotomy, and tendon transfers, have been recommended to manage it. In the present study, we aimed to determine the clinical outcome of open reduction with soft tissue release, tendon transfer, and glenoid osteotomy inpatients with BPBI and posterior shoulder dislocation or subluxation. Methods: From 2018 to 2020, 33 patients that underwent open reduction, glenoid osteotomy, and tendon transfer were included. The glenohumeral deformity was classified according to the Waters radiographic classification. Functional assessment was performed using the Mallet grading system before and at least two years after the surgery. Results: The patients were monitored for 26.88± 5.47 months. Their average age was 27.5±14 months. Significant improvement was seen in the overall Mallet score (from 13.5 to 18.91 points) and its segments, including hand to mouth, hand to the neck, global abduction, global external rotation, abduction degree, and external rotation degree. Hand-to-back score and the presence of trumpet sign were significantly decreased in the post-operation phase (all p values<0.001). The above-mentioned variables significantly changed for both infantile and non-infantile dislocations. Conclusion: Our study demonstrated that open reduction along with glenoid osteotomy improves retroversion, and muscle strengthening with different muscle transfers is an effective technique for BPBI.

Keywords : birth injuries, nerve injury, brachial plexus birth palsy, Erb palsy, tendon transfer
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