# Obstetric Brachial Plexus Palsy

Obstetric brachial plexus injury (OBPP) are a relatively common stretch nerve injury of the brachial plexus that occurs during delivery.

## Treatment

A systematic review of the literature was performed to identify studies that compare nerve reconstruction to conservative treatment, including neurolysis. Nine papers were identified that directly compared the two treatment modalities. Eight of these were classified as level 4 evidence and one as level 5 evidence. All nine papers were evaluated in detail to describe strong and weak points in the methodology, and the outcomes from all studies were presented. Pooling of data was not possible due to differences in patient selection for surgery and outcome measures. The general consensus is that nerve reconstruction is indicated when the result of nerve surgery is assumedly better than the expected natural recovery, when spontaneous recovery is absent or severely delayed. The papers differed in methodology on how the cut-off point to select infants for nerve reconstructive surgical therapy should be determined [1].

### Surgery

Two main treatment strategies have been used: primary surgery, consisting in exploring and reconstructing the affected portions of the brachial plexus within the first few months of the patient's life, and secondary procedures that include tendon or muscle transfers, osteotomies, and other orthopedic techniques.

Secondary procedures can be done as the only surgical treatment of OBPP or after primary surgery, in order to minimize any residual deficits.

## Outcome

Roughly 30 % of patients will not recover completely and will need a surgical repair.

Strong scientific validation for nerve reconstruction surgery in infants with Obstetric Brachial Plexus Palsy is lacking, as no randomized trial comparing surgical reconstruction versus conservative treatment has been performed.

Two things are crucial to achieving a good outcome: (1) the appropriate selection of patients, to separate those who will spontaneously recover from those who will recover only partially or not at all; and (2) a good surgical technique.

Considerable published evidence compiled over decades of surgical experience favors primary nerve surgery as the initial therapeutic step in patients who do not recover spontaneously, followed by secondary surgeries for further functional improvement. The results of such treatment can greatly ameliorate function in affected limbs. For best results, multi-disciplinary teams should treat these patients [2].

1)
Pondaag W, Malessy MJ. The Evidence for Nerve Repair in Obstetric Brachial Plexus Palsy Revisited. Biomed Res Int. 2014;2014:434619. Epub 2014 Jan 16. Review. PubMed PMID: 24551845.
2)
Socolovsky M, Costales JR, Paez MD, Nizzo G, Valbuena S, Varone E. Obstetric brachial plexus palsy: reviewing the literature comparing the results of primary versus secondary surgery. Childs Nerv Syst. 2015 Nov 28. [Epub ahead of print] PubMed PMID: 26615411.