Thirty-one patients at three institutions who had undergone ulnar and/or median nerve fascicle transfer to the biceps and/or brachialis branches of the musculocutaneous nerve after neonatal brachial plexus palsy. The primary outcome measures were postoperative elbow flexion and supination as measured with the Active Movement Scale (AMS). Patients were followed for at least eighteen months postoperatively unless they obtained full elbow flexion or supination (AMS = 7) prior to eighteen months of follow-up.

Twenty-seven (87%) of the thirty-one patients obtained functional elbow flexion (AMS ≥ 6), and twenty-four (77%) obtained full recovery of elbow flexion against gravity (AMS = 7). Of the twenty-four patients for whom recovery of supination was recorded, five (21%) obtained functional recovery. Combined ulnar and median nerve fascicle transfers were performed in five patients and resulted in full recovery of elbow flexion against gravity and supination of AMS ≥ 5 for all five. Single-fascicle transfer was performed in twenty-six patients and resulted in functional flexion in 85% (twenty-two of twenty-six) and functional supination in 15% (three of twenty). Patients with nerve root avulsion were treated at a younger age ($p < 0.01$), had poorer preoperative elbow flexion ($p < 0.01$), and recovered greater supination ($p < 0.01$) compared with patients with dissociative recovery. Younger patients ($p < 0.01$) and patients with C5-C6 avulsion ($p < 0.02$) recovered the greatest supination. One patient sustained a transient anterior interosseous nerve palsy after median nerve fascicle transfer.

Ulnar and/or median nerve fascicle transfers were able to effectively restore functional elbow flexion in patients with nerve root avulsion, dissociative recovery, or late presentation following neonatal brachial plexus palsy. Recovery of supination was less, with greater success noted in younger patients with nerve root avulsion [1)].

1)
Little KJ, Zlotolow DA, Soldado F, Cornwall R, Kozin SH. Early functional recovery of elbow flexion and supination following median and/or ulnar nerve fascicle transfer in upper neonatal brachial plexus palsy. J Bone Joint Surg Am. 2014 Feb 5;96(3):215-21. doi: 10.2106/JBJS.L.01405. PubMed PMID: 24500583.