Brachial Plexus Palsy Management

THIS PATHWAY SERVES AS A GUIDE AND DOES NOT REPLACE CLINICAL JUDGMENT.

Inclusion Criteria: Child born with asymmetric arm movements that persists at time of discharge from newborn nursery/NICU, or if asymmetric arm movement noted ages birth through adulthood Exclusion Criteria: Symmetric arm movement within 24 hours after birth Age < 12 months Age > 12 months Pediatrician to refer to Connecticut Children's Pediatrician/NICU to refer to Connecticut Children's Pediatric Pediatric Orthopedic Surgery Brachial Plexus Injury Orthopedic Surgery Brachial Plexus Injury Clinic via OneCall: Clinic via OneCall: 860-837-9890 860-837-9890 Initial appointment to be within 1 month Pertinent history and physical exam to include: Establish Narakas Grade (Appendix A) Arm movement present or absent? OT Referral: Range of Motion (ROM), electrical Pupils symmetric or asymmetric? stimulation (Estim) Pertinent imaging to include: (order as soon as deficit is noticed) Define limitations and contractures CXR to document presence/absence of humeral/clavicular / Refractor Fracture functional or present? aesthetic concern? Initial appointment Initial appointment within 1 month within 1 week Return of full function after fracture Yes Office visit Establish Narakas Grade (Appendix A) Teach family home exercises based on injury pattern OT Referral: Range of motion (ROM), electrical stimulation (Estim) Evaluate Active Movement Scale (AMS) (Appendix B) Examine for contractures, particularly of shoulder Continue to follow monthly Cookie test; Eye Cover test 6-9 **Consider treatment** months Therapy/Botox Surgical: Shoulder capsular release Humeral rotational osteotomy Tendon transfer **Consider surgical treatment** Non-surgical treatment Free muscle transfer Neuroma resection/cable graft Continue OT and home therapy Neurontization: Evaluate for secondary deformities Spinal accessory/ . suprascapular Intercostal Distal interplexus transfer Satisfactor function of extremity Continue monthly follow up Consider treatment: Therapy/Botox Surgical Shoulder capsular release Humeral rotational osteotomy Exit Pathway Tendon transfer Free muscle transfe **NEXT PAGE**



Classification (Narakas)		
Assess at 2	-4 weeks (to allow for recovery of minor nerve contusions)	
Group 1	C5, 6 Biceps and deltoid paralysis	
Group 2	C5, 6, 7 Only the long finger flexors working	
Group 3	Whole plexus involved with slight finger flexion only	
Group 4	Whole plexus involved ± Horner's syndrome	

Reference: Narakas AO. The treatment of brachial plexus injuries. Int Orthop 1985;9:29–36. doi:10.1007/BF00267034









CLINICAL PATHWAY: Brachial Plexus Palsy Management Appendix B: Active Movement Scale

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 a. Shoulder abduction: 	27 27		
 Shoulder adduction: 		Gravity eliminated	Score
c. Shoulder flexion:	35—26	No contraction	0
d. Shoulder external rotation:		Contraction, no motion	1
e. Shoulder internal rotation:		<50% motion	2
. Elbow flexion:		>50% motion	3
g. Elbow extension:		Full motion	4
h. Forearm pronation:		Against Gravity	Score
i. Forearm supination:		<50% motion	5
j. Wrist flexion:		>50% motion	6
k. Wrist extension:		Full motion	7
I. Finger flexion:			
m. Finger extension:	-		
n. Thumb flexion:	32 B		
o. Thumb extension:			

Reference: <u>Curtis C</u>¹, <u>Stephens D</u>, <u>Clarke HM</u>, <u>Andrews D</u>. The active movement scale: an evaluative tool for infants with obstetrical brachial plexus palsy. <u>J Hand Surg Am.</u> 2002 May;27(3):470-8.





