



Pediatric Parsonage-Turner Syndrome: A Case Report

Young-Gon Lee M.D., Han-Young Jung M.D., Myeong-Ok Kim M.D., Kyung-Lim Joa M.D., Chang-Hwan Kim M.D.
Department of Physical & Rehabilitation Medicine, College of Medicine, Inha University, Incheon, Republic of Korea.

Introduction

Parsonage-Turner syndrome in a 7-year-old pediatric patient is exceptionally rare, and this study aims to explore the patient's symptoms and treatment experience in-depth. By examining the clinical features of this unique case, we seek to enhance our understanding of the disease course in young patients and contribute valuable insights into future directions for diagnosis and treatment.

The study focuses on unraveling the clinical aspects of Parsonage-Turner syndrome in this specific age group, exploring considerations for diagnosis and treatment in such rare cases. This research aims to provide perspectives in the field of pediatric neurology, particularly regarding the understanding and management of Parsonage-Turner syndrome in young children.

Case

A 7-year-old male presented with a history of fever, headache, and right upper limb muscle pain two weeks ago. Although the pain had improved, he developed weakness in the right upper limb, prompting his visit to the clinic. No trauma history was reported. Brain MRI performed at the time of admission revealed no specific abnormalities, and cerebrospinal fluid (CSF) study yielded normal results. Subsequent Brachial Plexus MRI displayed slight swelling and thickening in the right brachial plexus, with unclear soft tissue changes (Figure 1). To establish a differential diagnosis, Nerve Conduction Studies (NCS) and Electromyography (EMG) were conducted (Table 1).

Motor NCS of the right deltoid, biceps, and infraspinatus showed decreased amplitude, while needle EMG in the same muscles revealed denervation potentials and polyphasic motor unit action potentials. No specific abnormal findings were observed in other nerve, sensory NCS, and F-wave tests performed. In accordance with the clinical suspicion of Brachial Neuritis (clinically, Parsonage-Turner Syndrome), The patient received Intravenous Immunoglobulin (IVIG) treatment at a dose of 400mg/kg for the first 5 days of hospitalization. Subsequently, oral prednisolone was initiated at a dosage of 30mg daily, gradually tapered by 5mg every 5 days over the course of one month. Additionally, Electrostimulation Therapy (EST) and conventional physical therapy were administered. After one month, notable muscle strength recovery was observed (Table 2).

Conclusion

This case highlights the occurrence of Parsonage-Turner Syndrome in a 7-year-old patient, underscoring the importance of considering this rare syndrome in pediatric cases presenting with limb weakness. NCS and EMG played a crucial role in the diagnostic process, aiding in the timely identification of the condition. The combination of IVIG, steroid tapering, and physical therapy contributed to significant recovery of muscle strength within one month.

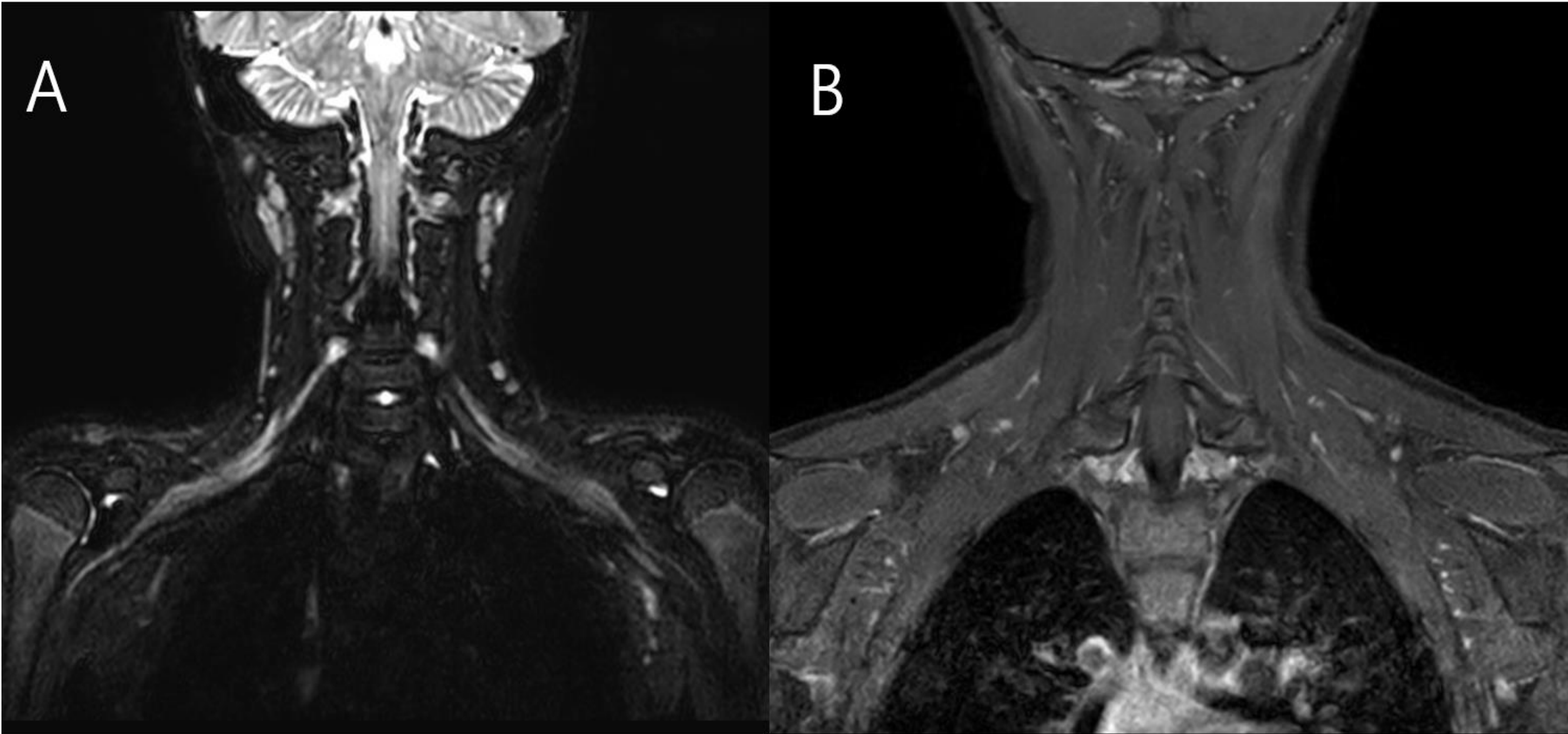


Figure 1. Brachial plexus MRI

Table 1. Results of Nerve conduction study

Motor nerve conduction study								
	Right				Left			
	Latency(ms)	Amplitude(mv)	Conduction velocity(m/s)	F-wave latency(ms)	Latency(ms)	Amplitude(mv)	Conduction velocity(m/s)	F-wave latency(ms)
Median (APB)	2.6/5.3	3.2/2.9	54.1	20.9	2.6/5.2	5.3/5.1	59.0	20.2
Ulnar (ADM)	2.3/4.5	8.4/7.2	45.7	19.4	2.1/4.2	6.4/5.8	57.0	20.1
Radial (EIP)	1.7/4.3	2.2/2.0	61.0	-	1.5/4.2	2.1/1.6	63.3	-
Axillary (Deltoid)	3.2	0.8*	-	-	2.9	6.6	-	-
Musculocutaneus (Biceps)	3.8	1.6*	-	-	3.4	6.9	-	-
Suprascapular (infraspinatus)	2.9	0.8*	-	-	2.2	7.6	-	-
Sensory nerve conduction study								
	Right			Left				
	Latency(ms)	Amplitude(uv)	Conduction velocity(m/s)	Latency(ms)	Amplitude(uv)	Conduction velocity(m/s)		
Median	2.1	48.0	57.6	1.9	50.4	61.9		
Ulnar	1.8	41.1	66.2	1.8	44.7	67.0		
Radial	1.9	16.8	64.0	1.8	14.7	55.8		
LABCN	1.3	28.8	61.9	1.0	22.6	67.2		
MABCN	1.3	27.7	77.4	1.2	14.5	58.9		

APB: Abductor pollicis brevis ADM: abductor digiti minimi EIP: Extensor indicis proprius
LABCN: Lateral antebrachial cutaneous nerve MABCN: Medial antebrachial cutaneous nerve
*: Abnormal data

Table 2. Changes in MRC scores in the patient

	At the time of symptom onset		1 month after treatment	
	Right	Left	Right	Left
Shoulder extensor	2	5	5	5
Shoulder flexor	2	5	5	5
Shoulder abductor	2	5	5	5
Elbow flexor	3	5	5	5
Elbow extensor	3	5	5	5
Wrist flexor	4	5	5	5
Wrist extensor	4	5	5	5
Finger flexor	4	5	5	5
Finger abductor	4	5	5	5