P-134

Functional Recovery Following Immunosuppressive Therapy and Comprehensive Rehabilitation in a Child with Chronic Inflammatory Demyelinating Polyneuropathy : A Case Report

Younggi Song[1*], Hojin Ju[2], Jee Hyun Suh[2†]

1. Department of Rehabilitation Medicine, Seoul National University College of Medicine, Seoul National University Hospital, Seoul, Republic of Korea
2. Department of Rehabilitation Medicine, Seoul National University College of Medicine, Seoul National University Bundang Hospital, Seongnam, Republic of Korea

Background and Objective

▶ Chronic inflammatory demyelinating polyneuropathy (CIDP)

- A rare immune-mediated polyneuropathy in the pediatric population
- Often challenging to differentiate acute-onset CIDP from recurrent Guillain-Barré syndrome (GBS) in the early stages

▶ Knowledge Gap

- Pharmacological treatments (e.g., immunosuppressants) are well established
- However, evidence on the role and optimal protocol of early comprehensive rehabilitation in pediatric CIDP remains limited

▶ Case Objective

- To report a pediatric case of relapsing CIDP occurring 10 years after initial GBS
- To describe the clinical course and functional recovery following:
- Immunosuppressive therapy
- Early, structured comprehensive rehabilitation

Case Presentation

▶ History & Presentation

- A 14-year-old boy with a history of Guillain-Barré syndrome (age 4)
- Presented with acute, rapidly progressive symmetrical weakness following an upper respiratory infection

▶ Clinical Course

- Initially considered recurrent GBS
- Motor weakness progressed beyond the typical 4-week nadir, raising suspicion for alternative diagnosis

▶ Diagnostic Findings

- Serial nerve conduction studies (NCS) showed:
  - ✓ Prolonged latency
  - ✓ Reduced amplitude
  - ✓ Decreased conduction velocity
- Findings consistent with demyelinating neuropathy → diagnosis revised to acute-onset CIDP (Table 1)

▶ Medical Management

- High-dose IV methylprednisolone pulse therapy
- Followed by tapering oral corticosteroids for immunomodulation

Comprehensive Rehabilitation & Outcomes

▶ Rehabilitation Protocol

- Early comprehensive inpatient rehabilitation initiated alongside immunomodulatory therapy:
  - ✓ Physical therapy
  - ✓ Occupational therapy (ADL training)
  - ✓ Electrical stimulation

▶ Initial Deterioration (Days 1–49)

- Progressive neurological decline despite early intervention
- Day 49:
  - ✓ MRC sum score ↓ to 16
  - ✓ MBI ↓ to 18 → severe functional dependence

▶ Functional Recovery (Days 50–80)

- Following high-dose steroids + intensive rehabilitation:
  - ✓ Stepwise functional improvement observed
- Day 80:
  - ✓ MRC ↑ to 37
  - ✓ MBI ↑ to 38
  - ✓ Ambulation up to 100 m with a high walker

▶ Long-term Outcomes (Days 120–240)

- Day 240:
  - ✓ Independent ambulation
  - ✓ Full independence in ADLs (MRC 55, MBI 100)
- Concurrent electrophysiological improvement:
  - ✓ Decreased CMAP latency
  - ✓ Increased conduction velocity

Conclusion

▶ **Key Findings**

- Early comprehensive rehabilitation combined with immunosuppressive therapy may facilitate meaningful functional recovery in pediatric acute-onset CIDP

▶ **Clinical Implications**

- Accurate differentiation between Guillain-Barré syndrome and CIDP is critical
- Early initiation of appropriate immunosuppressive therapy **with concurrent rehabilitation** is essential to optimize outcomes

▶ **Rehabilitation Role**

- Comprehensive rehabilitation may help:
  - ✓ Prevent muscle wasting
  - ✓ Mitigate functional decline associated with prolonged corticosteroid use

Table 1. Serial Changes in Electrodiagnostic Findings

Day		1	49	120	240
CMAP (Right median at APB)	**Latency (ms)**	9.33	15.13	10.69	7.21
	Amplitude (mV)	6.0	2.7	5.0	8.4
	Conduction Velocity (m/s)	31.9	13.5	22.5	34.5
CMAP (Left median at APB)	**Latency (ms)**	10.67	12.79	10.75	7.02
	Amplitude (mV)	6.0	4.4	4.8	9.0
	Conduction Velocity (m/s)	35.7	18.3	25.0	35.3
SNAP (Bilateral median)		No response	No response	No response	No response