P-163

Postoperative CIDP Relapse after Trimalleolar Ankle Fracture : A Case Report

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Introduction

- Chronic inflammatory demyelinating polyradiculoneuropathy (CIDP) is an autoimmune disorder typically triggered by infections.
- Relapses following mechanical trauma or orthopedic surgery are rarely reported in literature.
- We report a case of catastrophic CIDP relapse after a trimalleolar fracture and ORIF, showing dramatic recovery from initially absent electrophysiological signals.

Case Description

Patient

40-year-old female with a history of CIDP (Initial diagnosis: Aug 2024, stable with independent gait).

Trigger

Sustained a right trimalleolar fracture due to slip down and underwent Open Reduction and Internal Fixation (ORIF) (Aug 12, 2025).

Radiographic findings at the time of injury revealed fractures at the distal tibia and fibula, right.

Following surgical intervention, post-ORIF radiographic evaluation demonstrated a status of internal fixation (IF state) for the fractures at the distal tibia and fibula, right.

Clinical Presentation

2 weeks post-surgery (Aug 26, 2025), developed rapid tetraparesis and sensory loss.

Initial Status

Only neck control possible, modified Medical Research Council (mMRC) Trace to Poor in all extremities.

Therapeutic Interventions

Medical

Methylprednisolone pulse therapy, Intravenous Immunoglobulin (IVIG), and weekly Rituximab infusions.

Rehabilitation

Intensive comprehensive rehabilitation focused on range of motion (ROM), muscle strengthening, and gait training.

Results

Motor Recovery

- Improved to Fair to Good grades in all 4 extremities at discharge

Functional Score

- Korean Modified Barthel Index (K-MBI) significantly increased from 4 to 75.

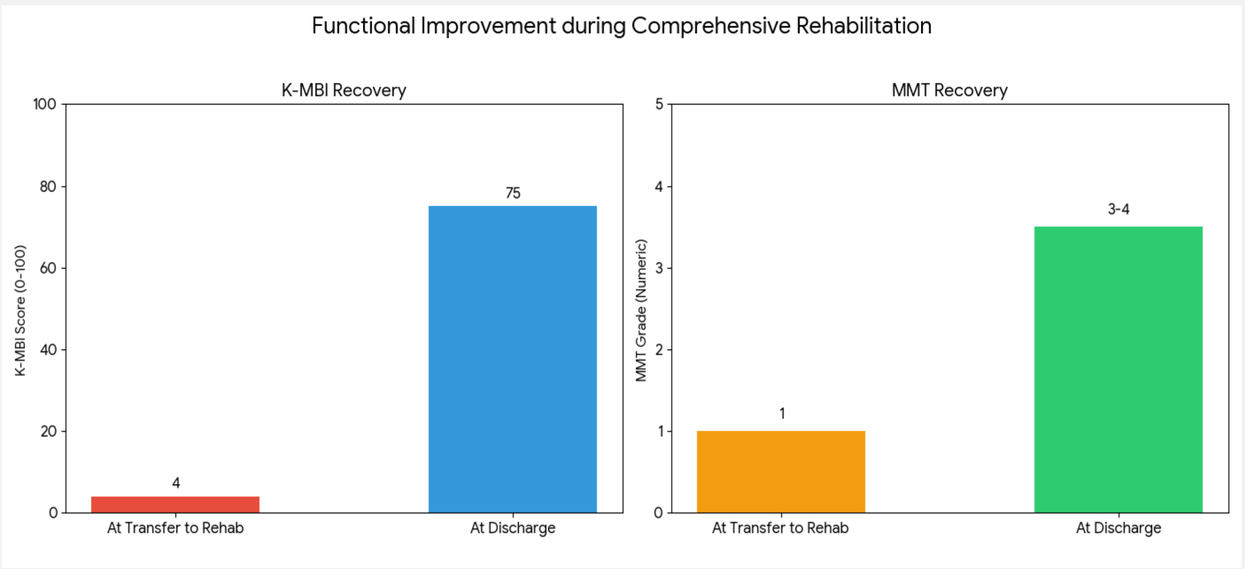

Figure 2. Functional recovery during the rehabilitation period. The bar graph illustrates significant improvement in functional status. The Korean Modified Barthel Index (K-MBI) score increased from 4 (total dependence) to 75 (functional independence). Concurrently, the average muscle strength improved from Trace to Fair-Good grades in all four extremities.

Electrodiagnostic Follow-up

Nerve Study Parameters		Date and Parameters (Onset latency ms / Peak amplitude μV)		
Nerve	Segment	Sep 18 (Initial)	Oct 13 (Follow-up 1)	Dec 17 (Follow-up 2)
Rt. Median	Wrist-Digit II	NR	NR	5.16 / 11.3
Lt. Median	Wrist-Digit II	NR	NR	5.31 / 12.8
Rt. Ulnar	Wrist-Digit V	NR	NR	4.69 / 18.2
Lt. Ulnar	Wrist-Digit V	NR	NR	4.79 / 19.4
Rt. superficial Peroneal	Leg-Foot	NR	NR	3.28 / 4.7
Lt. superficial Peroneal	Leg-Foot	NR	NR	3.28 / 4.7
Rt. Sural	Leg-Foot	NR	2.29 / 8.3	3.54 / 9.0
Lt. Sural	Leg-Foot	NR	1.82 / 5.2	1.88 / 8.9

Table 1. Longitudinal follow-up of sensory Nerve conduction study (NCS) parameters (onset latency and peak amplitude) from the acute relapse phase to the recovery phase. Serial changes in sensory nerve conduction studies showing initial absence of potentials and subsequent recovery.

- After 4 months: Marked improvement in sensory amplitudes and conduction velocities.

Final Status

- Achieved independent ambulation with a mono-cane.

Conclusion

- **Major mechanical trauma and surgical stress (Assumptive mechanisms : antigen release or perioperative stress) can act as potent triggers for CIDP relapse.**
- **Even severe relapses with initially "absent responses" in NCS can achieve excellent functional outcomes with prompt immunotherapy and intensive rehabilitation.**
- **Clinical vigilance is essential for CIDP patients undergoing orthopedic procedures.**