

# Autonomic Dysreflexia, Seizures, Rhabdomyolysis and Acute Renal Failure in a Spinal Cord Injured Patient with an Intrathecal Baclofen Pump: a Case Report

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## Background

Baclofen is a GABA B receptor agonist used as an antispasticity agent.

Intrathecal baclofen (ITB) therapy is used in the management of severe spasticity. By delivering baclofen directly to the cerebrospinal fluid (CSF), higher CSF concentrations can be achieved while maintaining lower plasma concentrations.

Known complications from intrathecal baclofen withdrawal include increased spasticity, itching, fever and altered mental status. In severe cases, abrupt withdrawal can result in rhabdomyolysis, renal failure and death.

## Case

1997: 41 year old male with a C7 AIS C spinal cord injury and severe spasticity starts successful treatment with ITB.

2011: Patient develops increasing abdominal spasms, autonomic dysreflexia (systolic BP >200 mm Hg, heart rate 140 bpm) and seizures.

**Presumed diagnosis is ITB withdrawal.**

Treated with oral baclofen, diazepam, lorazepam and hydromorphone and an increase in intrathecal baclofen. Investigations started.

## Investigations

Interrogation of the pump is unremarkable. X-rays and CT scan show the tip of the catheter at T10 with CT contrast seen at the tip. CSF aspiration through the side-port of the pump is easily performed and the fluid is negative for infection.

Spinal MRI shows no change in a previously identified cystic myelomalacia.

**But still has intermittent severe abdominal spasms and progressive autonomic instability over several weeks.**

While at home and with progressive symptoms, he independently increases his oral medications up to 120 mg of diazepam and 12 mg of lorazepam daily.

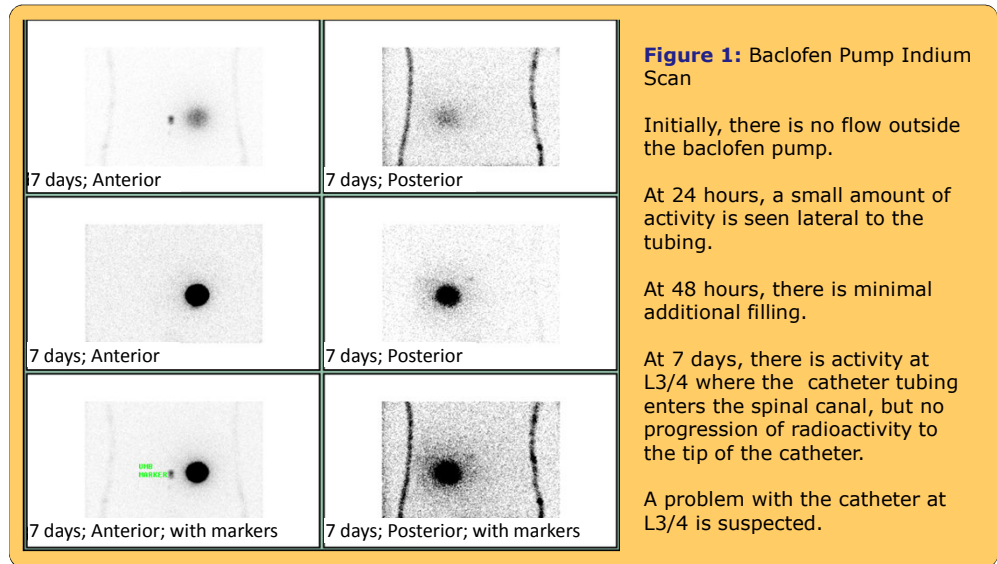
Presents to hospital with decreased level of consciousness, rhabdomyolysis (CK 37,260 U/L), seizures and acute renal failure (creatinine 290 mmol/L).

Admitted to ICU. Treating team suspects overdose on his oral medications being used to temporarily treat his spasms → decreased level of consciousness → muscle breakdown → rhabdomyolysis.

However, the rhabdomyolysis and renal failure may also be secondary to ITB withdrawal. Indium scan ordered.

## Acknowledgements

Special thanks to the patient, Health Authority and to all the Attending and Resident physicians, nurses and other members of the allied health care team involved in his care..



## Treatment

Started on temporary intermittent hemodialysis for his acute renal failure ( $K^+ = 5.9$ ).

A temporary external pump and catheter are placed to provide alternate delivery of intrathecal baclofen with marked relief of his spasms and autonomic instability.

After he is medically stabilized, his catheter and pump are replaced resulting in full resolution of his symptoms.

## Conclusions

This case highlights the potential for severe complications following intrathecal baclofen withdrawal.

Indium scans are a helpful investigative tool when routine studies such as x-rays and CT scans do not reveal a definitive diagnosis.

External bypass systems can be used diagnostically and therapeutically in patients experiencing withdrawal symptoms.