

Introduction

- Baclofen withdrawal is a very serious risk for anyone on intrathecal baclofen therapy through a baclofen pump.
- Severe cases of withdrawal have been known to lead to rhabdomyolysis which is potentially life-threatening.
- Here we discuss a case of suspected baclofen withdrawal in a 22 year old male with spastic dystonic quadriplegia secondary to cerebral palsy with an intrathecal baclofen pump.
- We will also discuss the troubleshooting that takes place as each step of the workup fails to uncover a cause.

Case

- 22 year old male with a history of cerebral palsy with spastic dystonic quadriplegia initially had a baclofen pump placed in 2013
- Recently underwent pump replacement for battery replacement and had the intrathecal baclofen transferred from the old pump to the new pump with no dose change.
- Was doing well in follow up, however 20 days after pump replacement, he woke up shaking with headache and tachycardia, which progressed to bruxism, anorexia, neck posturing, and he became lethargic
- Admitted to an outside hospital ICU with fever and tachycardia and found to be in rhabdomyolysis (table 1)
- EEG was unremarkable and a comprehensive infectious workup was negative. His baclofen pump was evaluated and found no malfunction and he was placed on enteral baclofen, IV fluids, and broad spectrum antibiotics.
- He was then transferred to our hospital for further management.
- Catheter dye study revealed no obstruction of flow
- MRI of the thoracic spine did not reveal any evidence of granuloma at the catheter tip, stenosis in the thoracic intrathecal space, or other evidence of blockage
- Patient's condition stabilized and he tolerated gradual weaning from oral baclofen which was continued as outpatient
- Repeat catheter dye study was negative as well as negative CT myelogram (Figure 1)

Imaging

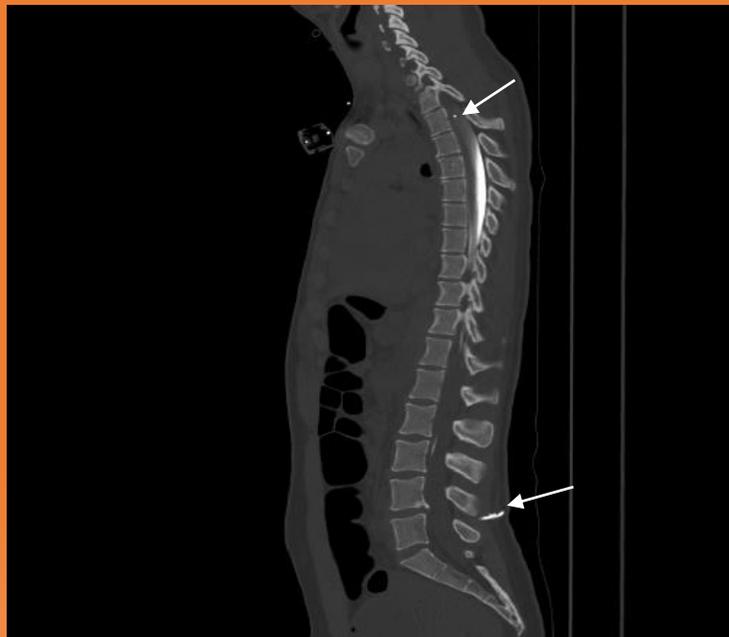


Figure 1: CT myelogram shows catheter entering spinal canal at L4-5 and coursing along epidural space until approximately T12 where it enters the thecal sac then extends cephalad to level of T3

Initial Lab Results

Creatinine kinase	86,230
Creatinine	4.1
WBC	28
Serum sodium	158
AST/ALT	1,034/203
Lactic acid	12.8
Troponin	1.56

Subsequent Lab Results

Creatinine kinase	54
Creatinine	0.56
WBC	9.4
Serum sodium	141
AST/ALT	70/60
Lactic acid	1.4
Troponin	<0.015

Table 1: Initial lab results (left). Lab results after fluid resuscitation and PO baclofen (right).

Discussion

- In rare cases of baclofen withdrawal, the resulting spasticity and rigidity can lead to rhabdomyolysis.
- It is very important to rule out other underlying causes which may present with similar symptoms. These include autonomic dysreflexia, infection (sepsis), malignant hyperthermia, neuroleptic malignant syndrome, or other conditions associated with a hypermetabolic state or widespread rhabdomyolysis.
- When it comes to investigating for pump failure, there are three common causes to consider: catheter malfunction/disconnection, low volume in the pump reservoir, and end of pump battery life.
- If troubleshooting reveals pump failure and the issue is addressed, the suggested treatment is the restoration of intrathecal baclofen at or near the same dosage as before the therapy was interrupted. If it is not possible to restore the administration of intrathecal baclofen in a timely manner, patients may be treated with oral GABA-ergic agonist medications such as oral or enteral baclofen or benzodiazepines.
- It is very important to not delay the administration of either of these medications in cases of baclofen withdrawal as these patients are prone to seizures.
- Other medications for spasticity such as dantrolene may improve the spasticity but will not counteract the CNS withdrawal symptoms such as seizures and autonomic instability.

Conclusion

- Baclofen withdrawal syndrome poses a very serious threat to the health of the patient.
- Educating patients and family about the signs of withdrawal and keeping frequent visits for pump check-ups may decrease the incidence of injury to the patient.
- If, however, withdrawal is suspected and evaluation of pump function finds no malfunction, it is vital to rule out other causes of the patient's symptoms and to control the spasticity with oral baclofen or benzodiazepines.