

Intra-thecal Baclofen pump for treatment of spasticity in Spine Cord Injury (SCI) patient with a multi-disciplinary approach.

A case report.

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Background

Intrathecal Baclofen pump is a treatment modality that involves delivering a drug by infusion directly into the Central nervous System (CNS), in this case Baclofen, stored in a hockey puck-sized reservoir in the abdomen, below the subcutaneous fat, near to the waistline, this is placed in the operating room (OR) under general anesthesia. The pump releases preset amounts of Baclofen into the thecal space through a catheter connecting this reservoir and the spinal canal. Periodic refills (every 3-6 months depending of the dose) are done in the office through a percutaneous injection, with an average lifetime of the pump of 7 years.

We present a case, Spinal cord injury (SCI) patient who received this therapy, his outcome and possible reflecting points about the role of different professionals in his care.

Case presentation

A 51 male diabetic patient, mechanic by trade, started to have lower abdominal pain and leg weakness. Initially mild, however, as the time passed by, these symptoms did not get better but the other way around. He started using a cane for deambulation. His Family doctor referred him to a Neurologist in his community suspecting diabetic neuropathy.

A Lumbar spine MRI and Electromyography tests were arranged, given the abnormal results he was urgently referred to Neurosurgery. Pt became paraplegic over a month or so. MRI showed a T2 intradural extramedullary mass with spinal cord compression. He did go for an urgent T1-T3 laminectomy for resection of this mass, that proved to be a meningioma.

After he passed the postoperative period with no complications, he was admitted to the Spinal cord injury Rehabilitation program, however he was unable to do his physiotherapy as he had severe spasms on both legs. His psychiatrist referred him to the Neuromodulation program for consideration of ITB pump placement, aiming to control his ongoing spasticity.

Within weeks, he had his ITB pump implanted, the surgery itself was uneventful, however postoperative wound dehiscence was treated with oral, topical antibiotics and specialized wound care, on both his abdominal wound (where the reservoir is) and his back wound (where the catheter was inserted into the spinal canal). Once these settled down, he did try a second round of inpatient rehabilitation, where essentially the patient learnt to walk again. Intensive physiotherapy program was put in place. Patient was able to regain his function and walk again. He is currently receiving periodic refills in the Neuromodulation clinic, with an expected date to replace his pump in 2026.

Subsequent titrations of his intrathecal dose have allowed him to notice a significant reduction of his spasms, up to 95%, allowing him to go back to work and become functional again.

Discussion

Spinal cord injury (SCI) presents time-sensitive challenges to our healthcare system.

This case shows a successful recovery for a patient who otherwise, would become wheelchair ridden at his peak of productivity.

Considered a relatively simple surgical procedure, the implantation of an ITB pump requires coordinated effort among physicians, surgeons, physiotherapists, nurses and in this case Physician assistants.

Early recognition of complications (such as wound infection or dehiscence) is key in the postoperative period. If infection reaches the pump, then this should be explanted and discarded immediately, due to risk of spreading the infection into the spinal cord and brain (meningitis, brain or spine abscess).

We benefited from the coordination of different teams, including Neurosurgery, Physiatry and community resources so a prompt referral was done and appropriate care was arranged.

More education is needed in terms of outreach efforts to make this program known among medical professionals in their communities. Simple and available online referral forms need to be improved to allow first-line practitioners to refer patients without delay.

Unfortunately, limited funding is a barrier to allow more patients to benefit from this therapy and potentially improving their quality of life long-term. Our aim with this publication is to add more evidence to the increasing need to get more ITB pumps funded in Ontario.

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Images

Image 1. Pt walking again after being wheelchair ridden for months, following ITB pump insertion



Image 2. Intensive inpatient physiotherapy immediately followed ITB pump implantation.

