It’s Just Another Patient with Back Pain!
Intrathecal Delivery Device Complications

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Objectives

- List the indications for intrathecal pain management delivery systems
- Recognize the signs and symptoms of intrathecal delivery system (ITDS) dysfunction and treat the patient appropriately
- Choose the correct diagnostic test to determine what complication is present
- Name the treatment for the complications
Indications

- Chronic intractable pain
- Treatment of spasticity related to neuromuscular diseases
What is a pain pump?
Refilling the pump
### What Medications?

<table>
<thead>
<tr>
<th>FDA approved</th>
<th>Unapproved but used</th>
</tr>
</thead>
<tbody>
<tr>
<td>Morphine (infumorph)</td>
<td>Levobuivacaine</td>
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<tr>
<td>Ziconotide (Prialt)</td>
<td>Bupivicaine</td>
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<tr>
<td>Baclofen (Lioresal, Gablofen)</td>
<td>Hydromorphone</td>
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<td>Clonidine</td>
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<td>Midazolam</td>
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<td>Methadone</td>
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</table>
46 yo female comes to the ED with husband with AMS which began this the PM PTA

Had intrathecal pump system revised the day prior to admission. Receives Baclofen for spasticity of cerebral palsy

100.8 rectally - 112 - 22 - 150/92

Neuro - confused, agitated, CN grossly intact, MOE X 4, rigid extremities
Pump malfunction

Underdosing

Overdosing

[Images of a hand holding a small object, a patient in a hospital bed, and a medical professional]
Overdosing

- Symptoms
  - Somnolent
  - Lethargic
  - Respiratory depression

- Treatment
  - Naloxone
  - Airway & ventilatory support
  - Removal of CSF
Baclofen Overdose

**Symptoms**
- Flaccidity
- Hyporeflexia
- Respiratory depression/Apnea
- Seizures
- Coma
- Autonomic Instability
- Hallucinations
- Hypothermia
- Cardiac Conduction Abnormalities

**Treatment**
- Intubate
- Empty the pump
- Turn off the pump
- CSF withdrawal
- Vasopressors

Underdosing for pain medication

- Symptoms
  - Increased pain

- Treatment
  - Supplemental treatment
Baclofen withdrawal

- Symptoms
  - High fever
  - Increased spasticity
  - Muscle rigidity
  - AMS

- Treatment
  - Fluids
  - Benzodiazepine
  - External cooling
Call the doctor who inserted the pump!

I’ll help you!
Palpate the location of the pump
Order an x-ray
Migration
Disconnected
Catheter Migration
Interrogate the pump
Check the reservoir
Ultrasound

Contrast Enhanced
Intracranial Hypotension Syndrome

▶ Symptoms
  ▶ HA
  ▶ Neck pain/stiffness
  ▶ N/V
  ▶ Change in hearing
  ▶ Vertigo
  ▶ Sense of imbalance

▶ Treatment
  ▶ Bedrest
  ▶ Caffeine
  ▶ Fluids
  ▶ Blood patch
Subdural

- Rare
- Headaches & nausea after implantation
- Altered LOC several weeks later


https://en.wikipedia.org/wiki/Subdural_hematoma
Infection
Infection Intrathecal space

- Symptoms
  - Encephalitis
  - Meningitis
- Treatment
  - IV Antibiotics
  - Removal
Epidural Abscess

- **Symptoms**
  - fever
  - Increase in pain
  - Urinary incontinence
  - Paresis or paralysis
  - Perineal anesthesia
  - Decreased rectal tone

- **Treatment**
  - IV antibiotics
  - Surgery
Hemorrhage
Catheter Tip Granuloma

Narouze S, Casanova J, Souzdalnitski D. “Patients with a History of Spine Surgery or Spinal Injury may have a higher Chance of Intrathecal Catheter Granuloma Formation.” Pain Practice 2014;14(1): 57-63.
Rhabdomyolysis

- Ziconotide
- Elderly
- Treatment
  - Fluids
  - Stop the med

Twiddler’s syndrome

Described in 1968 w/ pacemakers

3 cases reported


Harlequin Syndrome

▶ Symptoms
  ▶ Hemifacial flushing
  ▶ Relative hyperhidrosis

▶ Related to combo of meds
  ▶ Clonidine
  ▶ Bupivicaine
  ▶ Hydromorphone

Can you send this Patient to the MRI?
Can other items cause the pump to stall?

Arrhythmia?

Bibliography


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