



Inheriting an Intrathecal Pump

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Introduction

Intrathecal pump (ITP) is an intervention utilized in many chronic pain conditions such as cancer related pain, neuropathic pain, failed back surgery syndrome, complex regional pain syndrome, and central nervous system disorders causing spasticity.¹ Intrathecal drug delivery offers a number of benefits to patients who have failed conservative therapies such as bypass of the blood brain barrier and first pass metabolism, allowing for significantly lower dosing usage, and in turn less side effects.¹ They do however come with significant challenges for the managing physician. One of these challenges come when taking over ITP care from another provider. In these cases it is necessary to thoroughly understand the underlying pathology, current pump settings, comorbidities, and other factors such as psychological and social factors in order to assume care in an appropriate manner and trouble shoot potential failures. We present a case of an inherited ITP at The University of Chicago from an outside provider.

Case Description

- Patient with COPD with hypoxic respiratory failure, requiring 4L oxygen therapy at baseline
- Additional chronic conditions: GERD, hypothyroidism, psoriasis, multiple lung nodules, and diastolic CHF.
- History of lumbar spinal stenosis, treated with a lumbar laminectomy (L2-L5) years ago.
- Intrathecal (IT) pain pump placed in 2013, revised in 2019 due to loss of pain relief effectiveness both at outside hospital

Case Description Continued

- Patient reports continued severe, constant pain (6-10/10), with no improvement after 2019 revision and no relief from demand dosing.
- The pain was described as excruciating left lower extremity (LLE) pain (7-11/10), radiating from groin to ankle.
- No numbness or weakness, but the pain caused falls and made walking intolerable, restricting mobility.
- Myelogram revealed leakage near the IT pump connection site.
- During a second revision, it was discovered that the catheter had been charred and transected from the pump, resulting in subcutaneous delivery of intended intrathecal medication .
- The catheter was replaced and reconnected to the medication pump.

Intraoperative Photos of Transected Catheter

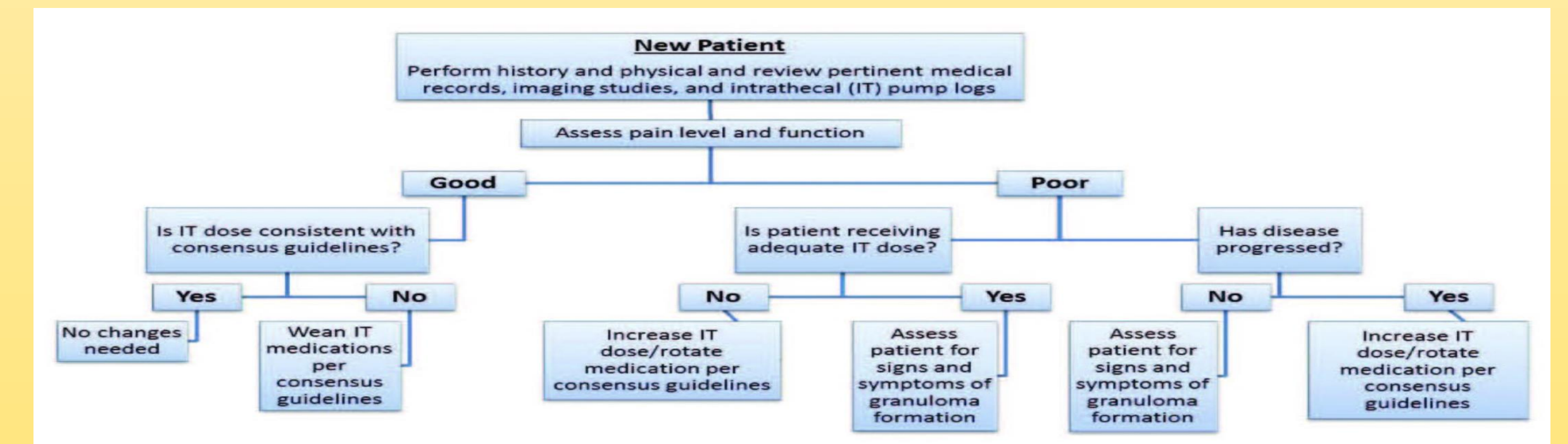


Discussion

- ITP is widely used in treatment of refractory chronic pain conditions.³
- Due to the complex nature of management of these devices, providers must be thorough in evaluating the patient and the device when assuming care from others.
- It is very important to recognize the physiological, psychological, pathological, and device related variables and adjust to them accordingly when managing/assuming care of an intrathecal pump.
- Device factors such as medication dosing and anatomical location of catheter tips should be scrutinized, especially if the patient is not getting adequate pain relief.
- Furthermore, formation of granulomas can also cause new or worsening symptoms in patients and therefore must be ruled out.⁵

Conclusion

Intrathecal drug delivery systems are a facet of chronic pain management that continue to evolve and have positive implications for adequately managing patients pain. With the benefits, there remain challenges. One of the largest being assumption of care of a patient with existing ITP. There are many variables with no consensus guidelines on ITP take over for clinicians. It is strongly suggested that transfer of care involving ITP occur with advanced planning involving all parties.



Schematic from ASRA Guidelines ²

References

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