

Intrathecal Pump Protrusion: A Rare Complication

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Introduction

- Intrathecal drug delivery systems are effective in treating patients who have chronic or malignant pain while reducing systemic side effects of oral opioid medication.
- Intrathecal pump placement comes with various risks but the complete protrusion of drug delivery devices through the abdominal skin has not been reported to our knowledge.

Case Presentation

- A 42-year-old male had an intrathecal drug delivery system implanted approximately five years ago for chronic pancreatitis.
- For the past year, the pump reservoir had been empty.
- Three weeks ago, the patient went to the ED at an outside hospital for abdominal pain and was noted to have an infection at the site of his pump.
- Went to the OR for I & D of the area surrounding his pain pump and was discharged on oral antibiotics. No mention of protrusion of his IT pump.
- The patient then arrived to the Cedars Sinai ED, where it was noted that his pump was protruding out of his abdomen.
- Blood cultures were sent and the patient was started on broad-spectrum IV antibiotics. After two days on antibiotics and ID clearance, the patient was taken to the OR for explant of his pump.
- The patient was discharged home a few days later on IV antibiotics. Intra-operative cultures grew MSSA and enterococcus; blood cultures were negative.
- The patient was then lost to follow-up.

Imaging



Figure 1.

Image of protrusion of the intrathecal delivery system out of the abdomen.

Discussion

- Intrathecal drug delivery systems are becoming increasingly utilized to treat chronic pain.
- The applications for intrathecal pump therapy have broadened to malignant pain, low back pain, neck pain, as well as spasticity, with the abdomen being the most common site of pump insertion.
- The implantation of intrathecal pumps come with risks: surgical, pharmacological, or medical.
- Wound infections must be appropriately identified early to prevent systemic sepsis and further complications. Superficial infections can be cultured and treated with antibiotics while deeper and more serious infections require removal of all implanted hardware followed by IV antibiotic therapy.
- Upon literature review, we have only discovered one reported case of subcutaneous pump protrusion, although without skin breakdown.
- The intrathecal pump was not being utilized in our patient and it is unclear if explant of the pump was previously discussed with the patient.

Imaging

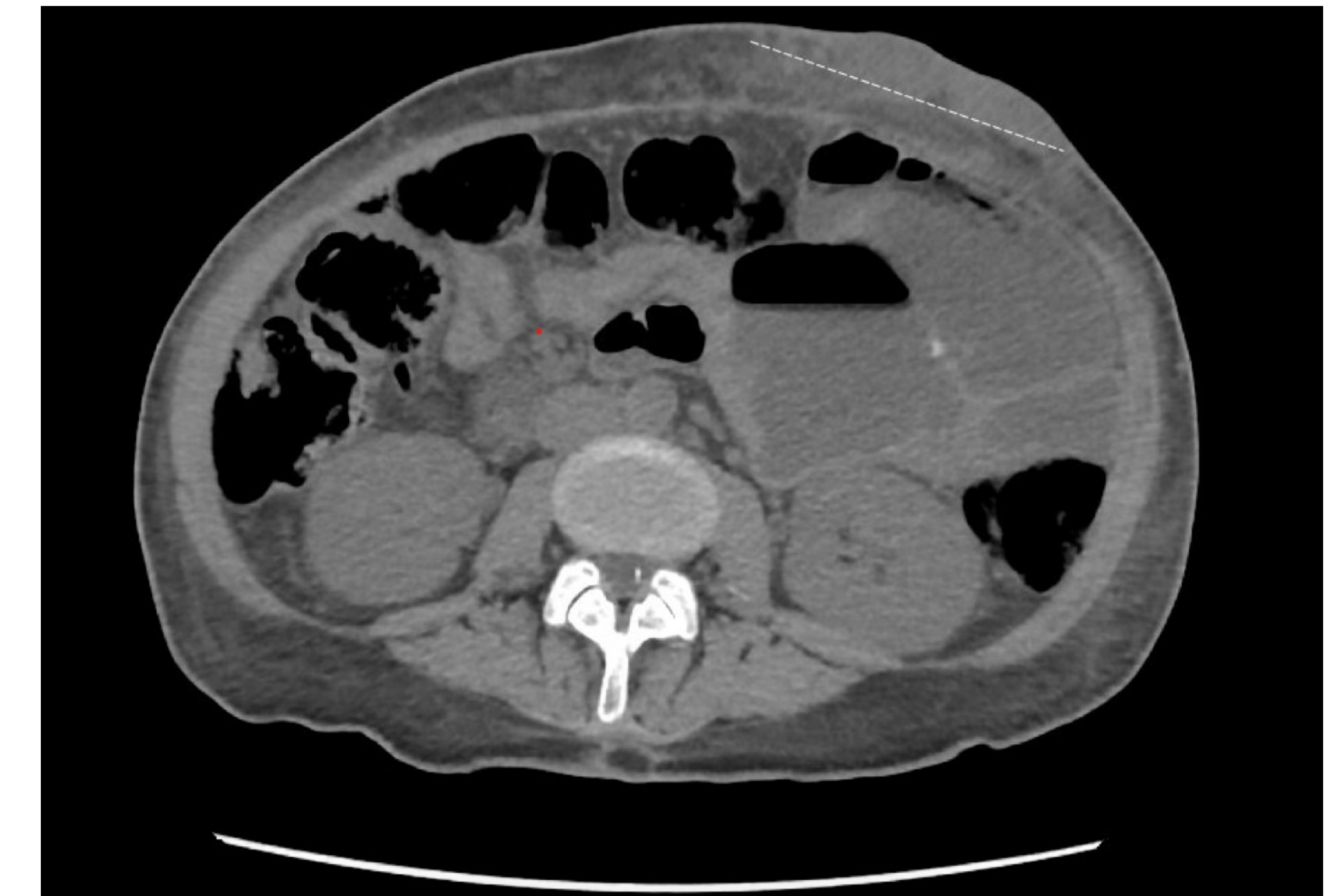


Figure 2. CT scan of the abdomen/pelvis.

Impression: Area of subcutaneous fat thickening and infiltration of the left abdominal wall extends over 10 cm in transverse and craniocaudal dimension. Bubbles of gas present within the subcutaneous tissues in this area. May be infectious/cellulitis.

No fluid collection concerning for an abscess.

MRI of the thoracic and lumbar spine also revealed no significant findings concerning infection.

Conclusion

- Our case highlights the importance of patient education as well as the importance of determining the appropriate candidate for an intrathecal drug delivery system.
- This patient was frequently lost to follow-up and did not present to the emergency department until his intrathecal pain pump was significantly protruding from his abdomen.
- Pain physicians should remain prudent to prevent potential complications of intrathecal pump placement and be prepared to manage such complications.