

CASE REPORT: INTRATHECAL PUMP COMPLICATIONS IN A SEIZURE PRESENTATION

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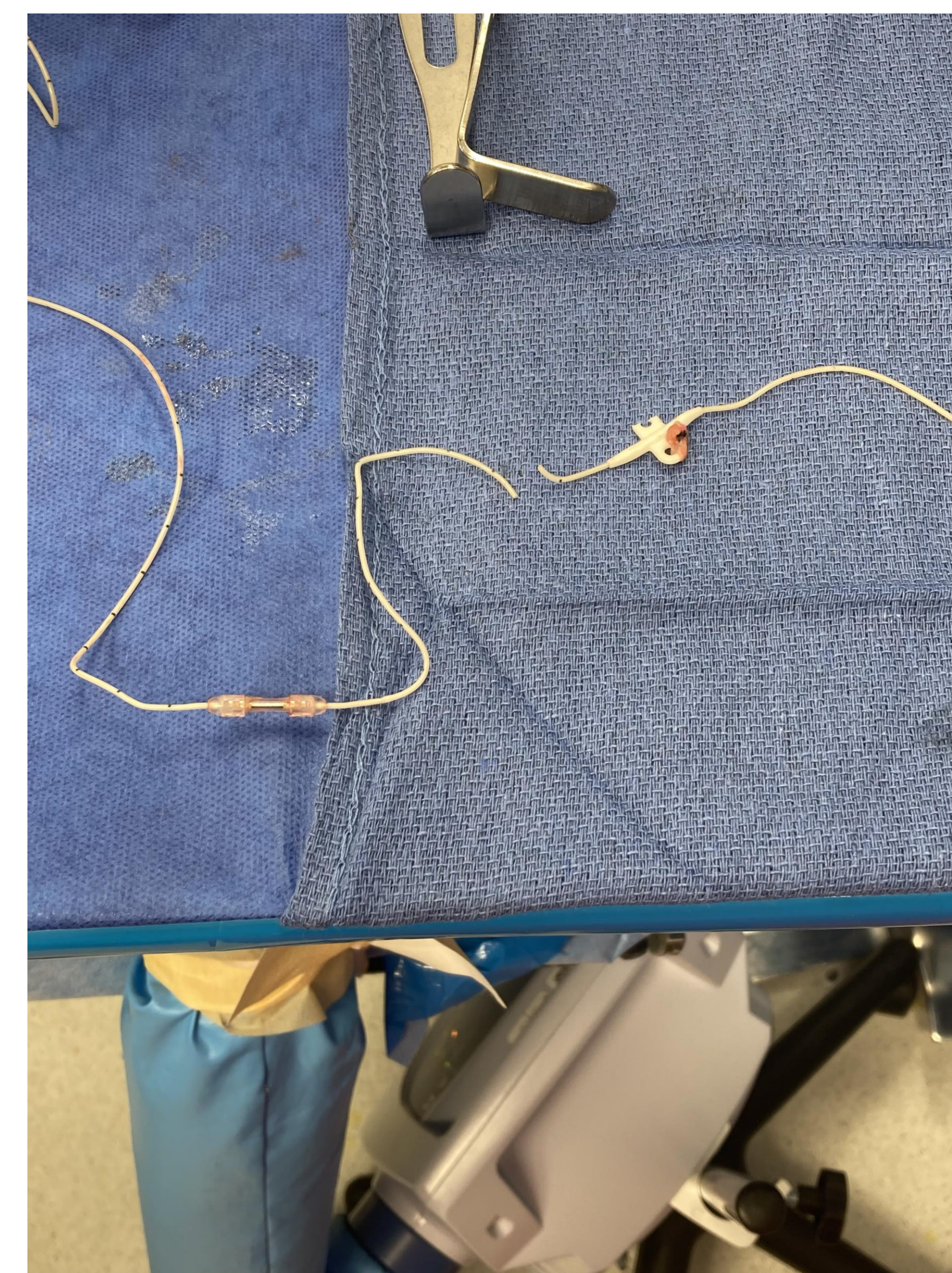
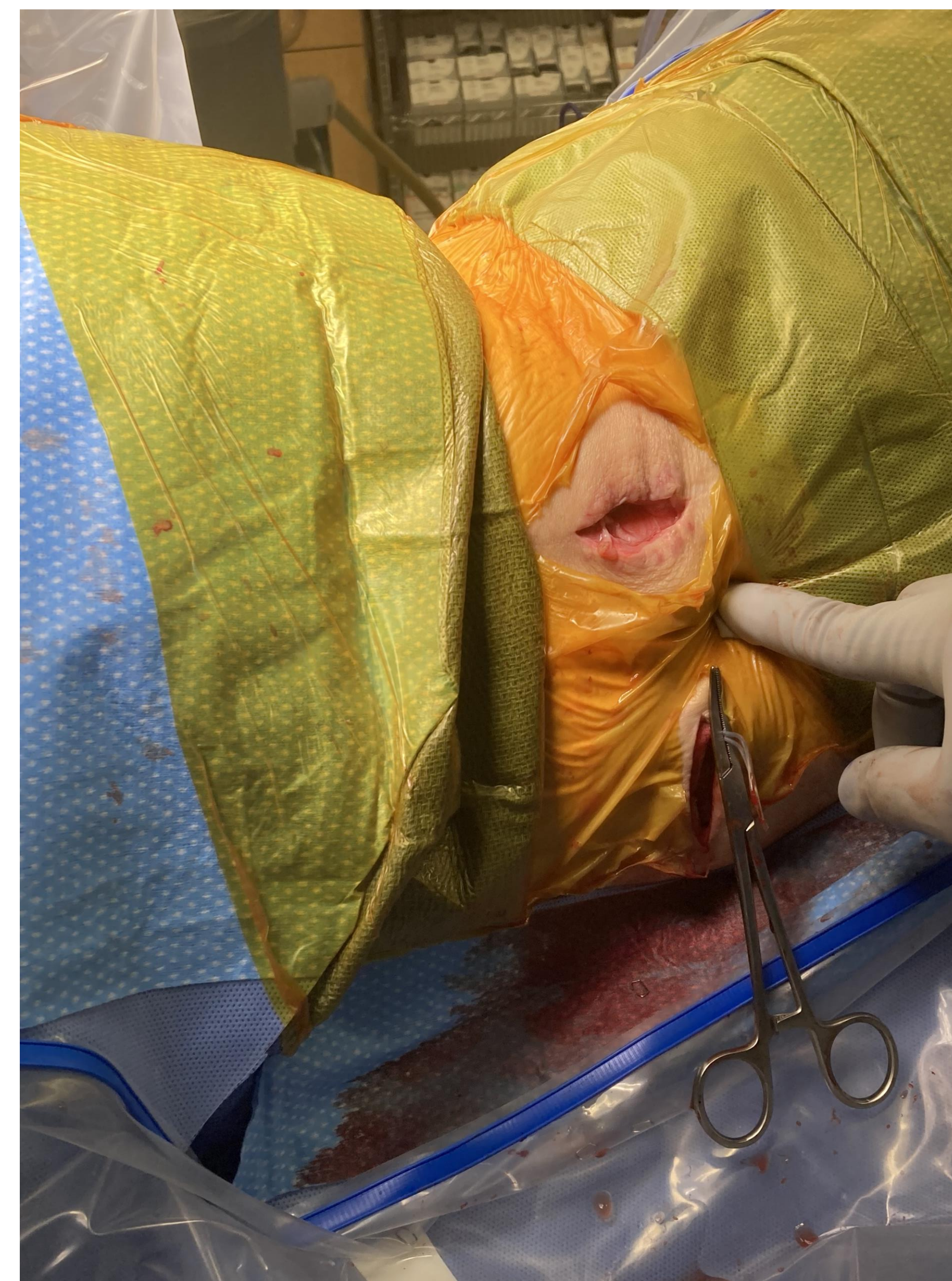
Introduction

Intrathecal pain pumps are used for targeted pain management, particularly in patients with chronic pain unresponsive to conventional therapies. These pumps offer a targeted approach to pain management by delivering medications directly into the cerebrospinal fluid surrounding the spinal cord.¹ Safety and efficacy of this delivery system are well documented for both cancer and noncancer pain.² While intrathecal pain pumps have shown promise in improving pain control and enhancing patients' quality of life, their use is not devoid of challenges and potential complications. Several reports have described the device-related complications that may be caused by malfunction of the pump or catheter, however very few if none delve into possible iatrogenic causes. We discuss a case involving an aphasic patient presenting with seizure who was suspected to have an intrathecal pump infection with the surprising finding of a severed intrathecal pump catheter.

Case Presentation

A 64-year-old female with history of chronic pain with intrathecal pain pump presented to our hospital after a fall at home and a witnessed seizure in the emergency department. She presented with signs of autonomic hyperactivity (tachypnea, tachycardia, sweating, hypertension, hyperthermia) culminating in a general tonic clonic seizure which necessitated intubation due to altered consciousness and need for airway protection. Her brother revealed that she had recently undergone spinal surgery at an external facility, with postoperative complications including what was thought to be a wound infection due to persistent seeping at the surgical site. CT Lumbar spine in the emergency room showed a fluid collection over L2 correlating with the recent surgical procedure. Given the proximity of the intrathecal pump, her recent surgical history, and reports of post operative wound infection, concerns arose about possible infection involving this device. Chronic pain management was consulted to investigate the potential for pump infection and the need for pump retrieval.

Intra Operative Findings



Her surgical site was also evaluated and was found to be weeping clear fluid without erythema or purulent discharge (left picture) Surgical exploration of the prior surgical incision revealed a severed intrathecal pump catheter at the anchor (right picture). Additionally, a clear fluid pocket consistent with cerebrospinal fluid (CSF) and/or pump medication was identified and sent for culture along with the catheter tip which were negative for growth.

Discussion

The case of this 64-year-old female underscores the significance of comprehensive patient assessment, especially in an aphasic patient. Unfortunately, external documentation regarding her previous surgery and hospitalization could not be obtained in a timely fashion leaving many questions unanswered; such as what surgery did she undergo, what evidence was there for a postoperative infection, and if the catheter was visualized and intact at the time of the prior procedure. However, given the timeline of her spine surgery along with the findings of the severed intrathecal pump catheter, we postulate that her presentation of seizure and autonomic instability was secondary to opiate withdrawal. While seizures are not a common manifestation of opiate withdrawal, they can occur, particularly in individuals with a history of chronic opioid use. The abrupt cessation of opioids may lead to increased neuronal excitability and a lowered seizure threshold. Various probable mechanisms for association have been described, including the activation of excitatory neurons in locus coeruleus,³ and alteration of activity of neurons of nucleus accumbens.⁴ Admittedly this case report is based on a single patient and does not fully represent the broader population. The exact mechanisms underlying seizures during opiate withdrawal remain unclear, and more research is needed to better understand this phenomenon. In addition, to better serve our patients, further research is also needed to explore strategies for minimizing such complications including determining the etiology and prevalence of iatrogenic intrathecal drug delivery system failures.

References

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