

A Charged Laparotomy: Management of Cylindrical Battery Ingestion

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Presentation:

A 66-year old female presented to the Emergency Department with abdominal pain and suicidal ideation following intentional foreign body ingestion. The patient had a known history of depression, borderline personality disorder, child sexual assault, multiple suicide attempts and deliberate self-harm. She had an eating disorder in the form of a restrictive eating pattern and her body mass index at presentation was 17.

Diagnosis:

The patient was admitted under the psychiatry team and a surgical opinion was sought. An initial trial of conservative management resulted in the spontaneous passage of 5 AA batteries. The patient continued to complain of diffuse abdominal discomfort and serial imaging revealed

that a large number of batteries remained in the region of the right iliac fossa on day 17 of admission.

Treatment:

Given the large quantity of cylindrical batteries remaining and the patient's ongoing symptoms, a recommendation was made for surgical intervention. A midline laparotomy allowed the identification and retrieval of 46 batteries from the stomach through a small gastrotomy. A further 4 batteries located in the colon were milked into the rectum and removed transanally. On-table X-Ray confirmed the removal of all batteries prior to closure of the abdomen.

Discussion:

Ingestion of cylindrical batteries is an

infrequent method of deliberate self-harm, however, previous case studies have been reported in patients with personality disorders¹. Complications such as generated current and liquefactive necrosis are rare and more commonly associated with ingestion of button batteries seen in paediatric populations². Management traditionally involves serial radiographs to follow the natural passage of the batteries, or endoscopic retrieval if they fail to pass beyond the gastric antrum². In this case, the batteries were believed to be in the terminal ileum, outside the reach of an endoscope, based on their location in the right iliac fossa on X-ray, however, they were in the stomach which was chronically distended secondary to gastric outlet obstruction. While potentially feasible, endoscopic retrieval may not have been practical or safe in this case. This case demonstrates the surgical removal of 50 cylindrical batteries, the highest number of ingested batteries recorded in the literature to our knowledge.

References:

1. Malliwal, R. S. & Bhattacharya, S. Durable cell: a case of multiple AA battery ingestion as a mode of deliberate self-harm. *JRSM Short Rep.* 4, 1–4 (2013).
2. Newman, R., Dijkstra, B. & Gibson, J. *Disk Battery Ingestion.* (StatPearls Publishing, 2021).