Incidental Discovery of Colon Perforation by Ventriculoperitoneal Shunt Migration Requiring Sigmoidectomy

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BACKGROUND

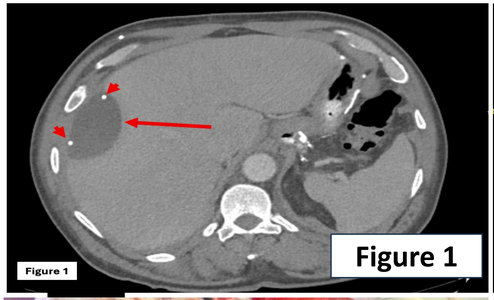
Ventriculoperitoneal shunts (VPS) are widely used for hydrocephalus but carry risks of infection, malfunction, and catheter tip migration. Among the rarest complications is bowel perforation, reported in 0.01–0.07% of cases, most often involving the sigmoid colon or rectum.[1,2] If unrecognized, this can result in peritonitis, meningitis, or death.[3] Notably, patients can remain asymptomatic, which complicates a timely diagnosis

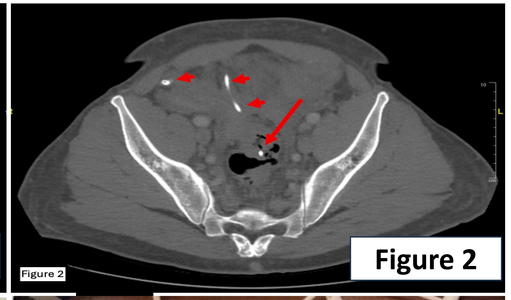
PRESENTATION

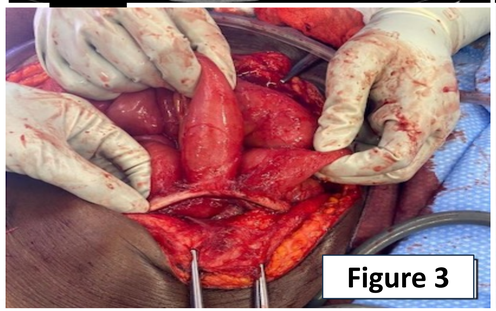
A 65-year-old male with normal pressure hydrocephalus underwent an uncomplicated VPS placement. Eight weeks later, he presented with RUQ pain and was found to have a localized intra-abdominal abscess at the catheter tip [Figure 1]. He underwent a laparoscopic washout, adhesiolysis and shunt revision, with cultures growing *Staphylococcus Lugdunensis*. After completing six weeks of intravenous antibiotics, a routine follow-up CT scan showed resolution of the abscess but incidentally discovered **migration of the distal catheter tip** into the sigmoid colon [Figure 2].

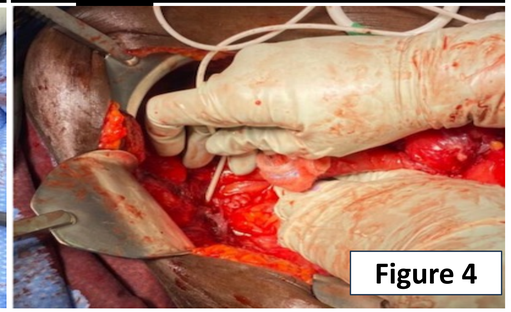
Remarkably, the patient remained entirely asymptomatic, with normal bowel function, stable vital signs, and a benign abdominal exam. Given the risk of catastrophic sequelae, urgent exploratory laparotomy was performed and confirmed **dense adhesions [Figure 3] and intraluminal termination of the shunt in the sigmoid colon [Figure 4]** mandating extensive adhesiolysis, two small bowel resections with primary anastomoses, sigmoidectomy with colorectal anastomosis, and a diverting loop ileostomy. The VPS was removed and he recovered well with abx, with plans for a staged VPS revision.

IMAGES









LEGEND

- **Figure 1:** CT abdomen showing a 10.1 cm perihepatic fluid collection (red arrow) with a ventriculoperitoneal shunt looped within (red arrowheads), consistent with a perihepatic pseudocyst vs abscess.
- **Figure 2:** CT abdomen/pelvis showing VPS (red arrowheads) with catheter tip (red arrow) breaching the sigmoid colonic wall with tip terminating intraluminally.
- **Figure 3:** Dense, fibrous adhesions tethering small bowel to VPS
- **Figure 4:** Distal VPS catheter tip terminating intraluminally in the sigmoid colon

DISCUSSION

Colonic perforation by a VPS is exceedingly rare in adults with some reports of a subtle and even silent presentation[4] with fewer than 25% of patients showing signs of peritonitis.[5] Timely intervention is key for preventing catastrophic sequelae including intracranial infection via retrograde bacterial ascension.[6] Proposed mechanisms of VPS migration include catheter tip pressure necrosis combined with risk factors such as fibrous adhesions causing an anchoring effect, and previous intraabdominal infections.[7] Treatment is removal or transection and externalization of the shunt at the neck, surgical retrieval of the intra-abdominal portion and, when indicated, trans-anal extraction of the distal portion via colonoscopy.[8] This case highlights the challenge of asymptomatic presentations, which may only be discovered incidentally on imaging.

CONCLUSION

VP shunt-related bowel perforation can be entirely asymptomatic yet remains a potentially fatal complication. Clinicians should maintain a high index of suspicion in patients with prior intra-abdominal pathology. Even in the absence of symptoms, prompt imaging, multidisciplinary evaluation, and surgical management are critical to preventing life-threatening outcomes.

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