

Recto-sigmoid Colon Perforation Following Transanal Irrigation in a Patient with Spinal Cord Injury

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Introduction

- Neurogenic bowel dysfunction (NBD) is a common complication in patients with spinal cord injury (SCI).
- Transanal irrigation (TAI) is a therapeutic method to assist bowel function in patients with NBD.
- TAI is applied to patients who do not respond to conventional conservative treatments such as dietary modifications, medication, and biofeedback therapy.
- TAI is generally considered safe, but complications such as bowel perforation, though rare, can be life-threatening.

Case Presentation

○ A 53-year-old male SCI patient.

- Multiple trauma due to a motorcycle accident in 2023.
- Complete paraplegia.
- ASIA Impairment Scale(AIS) A.
- Neurological level of injury(NLI) T10.
- NBD with a lower motor neuron pattern, such as areflexic bowel and incontinence.
- At 13 months post-injury, he initiated TAI.

○ TAI.

- Navina classic system(Wellspect).
- Once daily at 7AM.
- In accordance with the product usage guidelines.
 - Using approximately 500cc of water per session.
 - Balloon inflated 4 to 5 times using a pump.
- TAI was performed without any complications, and bowel management was well controlled without incontinence, the patient was satisfied and continued using the TAI method.



Figure 1. The Navina classic system: a device for TAI

○ Rectosigmoid colon perforation.

- Three months after initiating TAI, an abnormal "popping" sound was heard during balloon inflation.
- After that, he felt lower abdominal pain and experienced hematochezia.
- He was not taking anticoagulants or drugs that could increase the risk of bleeding.
- Abdominal CT revealed **recto-sigmoid colon perforation** and Hartmann's surgery was performed as an emergency.
- He was readmitted to our hospital with a stoma and colonostomy bag, and reconstructive surgery is under consideration.

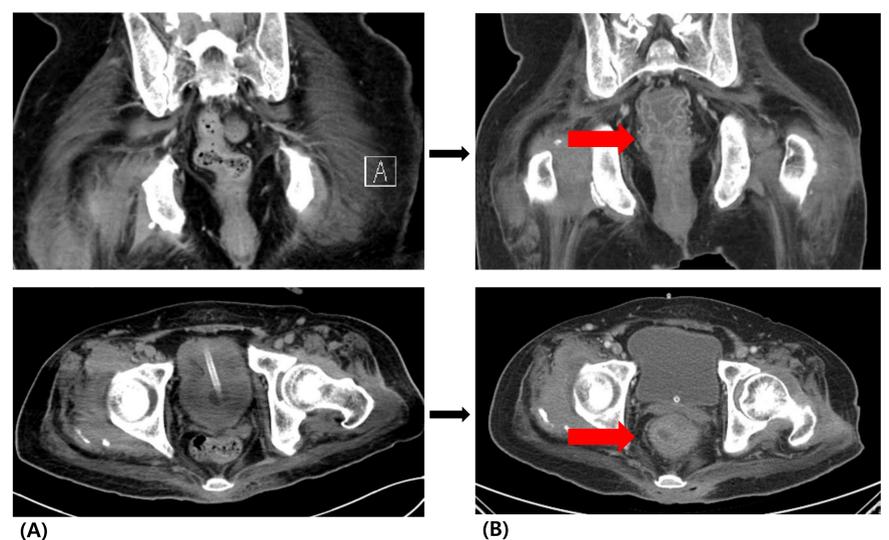


Figure 2. Abdominopelvic CT Images

(A) CT images obtained during bowel management with digital evacuation, not TAI ; no definite abnormal findings in the recto-sigmoid colon

(B) CT images showing recto-sigmoid colon perforation 3 months after TAI ; Wall thickening of recto-sigmoid colon with sigmoid wall defect and free air

Discussion

- Bowel perforation that may result from TAI in patients with SCI is particularly concerning due to altered visceral sensation, delayed diagnosis, and increased postoperative complications.
- The pathophysiology of bowel perforation following TAI may involve excessive pressure from irrigation, weakened bowel walls due to chronic neurogenic bowel dysfunction, or undiagnosed underlying colonic pathology.
- In this case, the patient's prolonged immobility, previous abdominal surgeries, and neurogenic bowel dysfunction may have contributed to increased susceptibility to bowel injury.

Conclusion

- This case highlights the rare but serious complication of recto-sigmoid colon perforation following TAI in a patient with SCI.