

Severe constipation relieved by onabotulinum toxin A injection in a brain injury patient

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Case presentation:

Setting: Acute inpatient rehabilitation

Chief complaint: constipation and neurogenic bowel

Patient: A 38-year old male who suffered a large brainstem bleed in January 2020, with subsequent tetraparesis. He arrived to our inpatient rehabilitation facility in April, with minimal spasticity and regular bowel movements. In May, spasticity worsened and he developed severe constipation. One month later, bowel movements happened only with daily saline enemas. Rectal exam around this time revealed a spastic, non-relaxing anal sphincter. He received 80 units of onabotulinum toxin A to his anal sphincter via anatomical guidance. One week after the injection, physical exam revealed decreased anal sphincter tone. Bowel movements happened every other day with stool softeners and bisacodyl suppository. Two weeks after the injection, the patient was transferred to another institution for pneumonia. Two weeks later he returned to our institution, able to obtain almost daily bowel movements by adding senna to this regimen, and without per-rectum medications. He had an intrathecal baclofen pump placed in October, and stayed at a dose of 132mcg/day until the day of discharge. It is important to note that he had no increased constipation after the baclofen pump was placed, and the improvement in his anal sphincter tone continued to the day of discharge.

Pharmacologic interventions for constipation

Osmotic laxatives: lactulose, polyethylene glycol, magnesium hydroxide

Lubricants: mineral oil

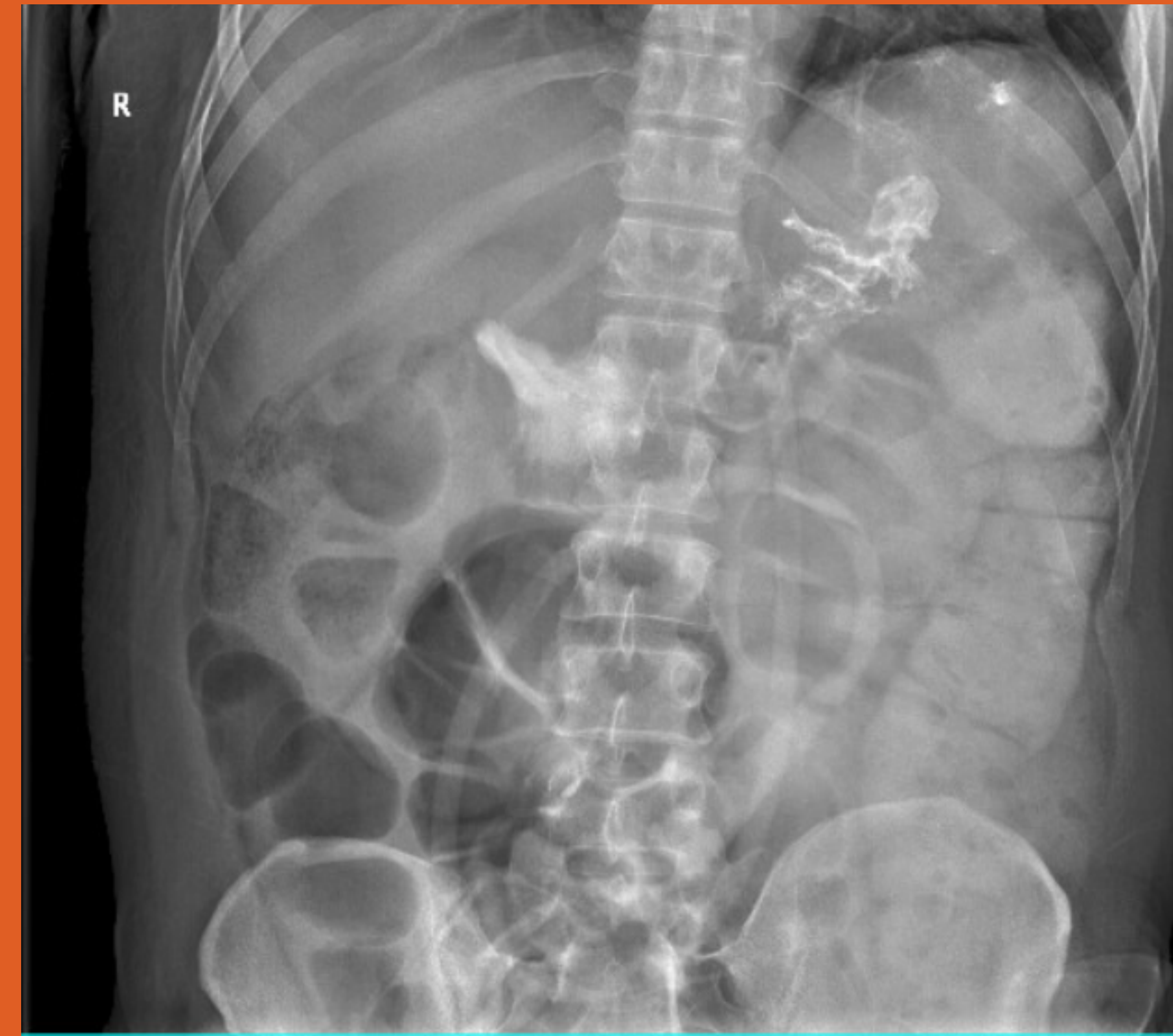
Stimulant laxatives: bisacodyl, senna

Prosecretory agents: lubiprostone, linaclotide, plecanatide

Serotonergic agents: prucalopride

Rectal laxatives: bisacodyl, sodium phosphate, sodium docusate,

Abdominal X rays



Abdominal plain films done in May 23, 2020 which reveals significant retained fecal matter throughout the colon



Abdominal plain films done in October 23, 2020 which revealed non-significant stool burden in the ascending colon.

Discussion/Relevance:

- Bowel dysfunction is seen in approximately 30-60% of patients with acquired brain injury
- Constipation is a common problem in brain injury patients. It is usually managed with a combination of laxatives, stool bulking agents, pro-motility agents, and manual removal of stools.
- Anal sphincter spasticity is not routinely assessed in this patient population, but it should be considered as a potential cause of constipation.
- For patients with anal sphincter spasticity causing severe constipation, botulinum toxin injection can be a reasonable option in combination with a well-structured bowel program.

Conclusion:

- Anal sphincter spasticity is a potential cause for constipation for brain injury patients, but its incidence and prevalence are unknown.
- Routine rectal examinations to assess anal sphincter tone should be considered for these patients, especially in those with difficult to manage bowel programs.
- Botulinum toxin injection to the anal sphincter is reasonable when an aggressive bowel program does not yield appropriate results.

References:

- Aadal, L., Mortensen, J., Kellenberger, S. and Nielsen, J., 2021. *Lower Bowel Dysfunction Following Acquired Brain Injury*.
- Vriesman, M. H., Koppen, I. J. N., Camilleri, M., Di Lorenzo, C., & Benninga, M. A. (2019). Management of functional constipation in children and adults. *Nature Reviews Gastroenterology & Hepatology*, 17(1), 21–39. <https://doi.org/10.1038/s41575-019-0222-y>
- Nowak, P. ł., Gala-Bładzińska, A., Stybel, K., & Filip, R. ł. (2020). Botulinum toxin in the treatment of intestinal pseudo-obstruction following a stroke. *Neurologia i Neurochirurgia Polska*, 54(6), 589–590. <https://doi.org/10.5603/pjnns.a2020.0073>
- Lu, P. L., & Mousa, H. M. (2018). Constipation. *Gastroenterology Clinics of North America*, 47(4), 845–862. <https://doi.org/10.1016/j.gtc.2018.07.009>

