

Autonomic Dysreflexia Resulting in Seizure After Colonoscopy in a Patient With Spinal Cord Injury

Rebecca A. Fausel, MD¹, and Shirley C. Paski, MD²

¹*School of Medicine, University of Washington, Seattle, WA*

²*University of Washington/VA Puget Sound, Seattle, WA*

Abstract

There are many potential procedural risks associated with colonoscopy. We present a case of autonomic dysreflexia complicated by seizure after colonoscopy in a patient with a spinal cord injury. Autonomic dysreflexia is a disorder characterized by hypertension, bradycardia, headache, and diaphoresis and is associated with spinal cord injuries above the level of T6. Episodes can be precipitated by a variety of factors, including bladder distension and stool impaction. We suspect that colonic/rectal distension and rectal stimulation associated with the colonoscopy precipitated autonomic dysreflexia in our patient.

Introduction

Autonomic dysreflexia is a complication of spinal cord injuries above T6.¹ It is caused by the loss of coordinated autonomic responses, and occurs when there are exaggerated sympathetic responses to noxious stimuli below the level of the injury, leading to diffuse vasoconstriction and hypertension. Clinical manifestations include headaches, diaphoresis, hypertension, flushing, blurred vision, nausea, bradycardia, and, rarely, seizures. Typical triggers include bladder distension, stool impaction, pressure sores, or rectal stimulation.¹

Case Report

A 39-year-old man with quadriplegia at the level of C5 secondary to a motocross accident was referred for a colonoscopy to evaluate hematochezia. He reported intermittent bright red blood per rectum with bowel care through suppositories and digital stimulation. No fissures, hemorrhoids, or masses were identified on rectal exam. He denied any other gastrointestinal symptoms, weight loss, or bleeding. He denied any family history of colorectal cancer or inflammatory bowel disease.

A colonoscopy was performed under moderate sedation, during which he received 3 mg of midazolam and 75 mcg of fentanyl in divided doses. Findings included internal hemorrhoids (the likely source of hematochezia), 2 small adenomatous polyps, and melanosis coli. He tolerated the colonoscopy without any immediate complications.

Approximately 1 hour after the procedure, he suddenly became unresponsive and was noted to have upper extremity rhythmic shaking with jaw clenching. He had evidence of involuntary oculomuscular movements and tongue biting. Vital signs were notable for severe hypertension (systolic blood pressure 204 mm Hg) and tachycardia (150 beats per minute). Autonomic dysreflexia was suspected, and he was repositioned from supine to sitting, and his urinary catheter was flushed to ensure it was functioning adequately. This episode lasted 3–5 minutes. His vital signs normalized, but he was confused and drowsy for 20–30 minutes after the episode and

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Correspondence: Shirley C. Paski, MD, University of Washington/VA Puget Sound, 1660 South Columbian Way, S-111-Gastro, Seattle, WA 98108 (Shirley.Paski@va.gov).

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had no recollection of any parts of the episode in the post-ictal period. The patient was monitored for 48 hours in the inpatient unit with no further seizure activity. Cranial computed tomography (CT) and electroencephalography (EEG) were unremarkable, and the patient has suffered no further effects from this episode.

Discussion

There is little published information regarding autonomic dysreflexia at the time of colonoscopy. Calder et al reported a patient who developed severe autonomic dysreflexia with associated pulmonary edema during bowel preparation for a colonoscopy.² Cosman et al prospectively evaluated the use of topical lidocaine at the time of colonoscopy to limit or prevent autonomic dysreflexia, but found no significant difference in the incidence of autonomic dysreflexia in the patients who received topical lidocaine.³ In this same study, both anoscopy and flexible sigmoidoscopy caused a significant increase in blood pressure, but anoscopy was found to be a more potent stimulus for autonomic dysreflexia. The authors hypothesized that this observation may have been due to stretching of the anal sphincters. A subsequent double-blind placebo-controlled study by Furusawa et al of 25 patients with spinal cord injury showed a significant reduction in systolic blood pressure rise (33 vs. 50 mm Hg) during digital stimulation in patients treated with topical lidocaine jelly compared with placebo jelly.⁴ The authors hypothesized that topical lidocaine may be more effective for a routine bowel program due to a lesser degree of anal and rectal distension when compared with anoscopy and flexible sigmoidoscopy.

Cosman et al also performed a randomized, double-blind placebo-controlled trial of pre-procedural intersphincteric anal block with 1% lidocaine versus placebo (normal saline) prior to colonoscopy or flexible sigmoidoscopy in patients with spinal cord injuries.⁵ The authors found that patients treated with intersphincteric lidocaine block before lower endoscopy experienced a significantly lower rise in peri-procedure systolic blood pressure. Based on this study, it appears that intersphincteric lidocaine block results in a slight reduction in autonomic dysreflexia and could be performed safely with negligible risk.

Although there is no published literature regarding the use of carbon dioxide (CO₂) insufflation to reduce the risk of autonomic dysreflexia in these patients, we hypothesize that

the use of CO₂ rather than air insufflation could also reduce the risk of autonomic dysreflexia by reducing the amount of colonic distension during and after colonoscopy. This is based on the hypothesis that gaseous distension of the colon and rectum may precipitate autonomic dysreflexia, just as distension of the rectum with stool in patients with stool impaction can precipitate the phenomenon.

When performing colonoscopy in patients with spinal cord injury, it is important to ask about a prior history of autonomic dysreflexia. Additionally, it is imperative to be able to quickly recognize the signs and symptoms of autonomic dysreflexia in order to expedite treatment. In patients at high risk, a pre-procedural intersphincteric lidocaine block and the use of CO₂ insufflation rather than air insufflation should be considered.

Disclosures

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