Autonomic Dysreflexia as a Complication of a Fecal Management System in a Man With Tetraplegia

Ismail Safaz, MD; Serdar Kesikburun, MD; Ozlem Koroglu Omac, MD; Ilknur Tugcu, MD; Ridvan Alaca, MD

Physical Medicine and Rehabilitation, Gulhane Military Medical Academy, TSK Rehabilitasyon Merkezi, Ankara, Turkey

Received January 18, 2010; accepted March 17, 2010

Abstract

Background/Objective: To present a case of autonomic dysreflexia caused by the use of a fecal management system in a patient with tetraplegia.

Design: Case report.

Setting: Military rehabilitation center.

Results: A man with tetraplegia had a fecal management system inserted to divert stool away from his sacral pressure ulcer to reduce contamination and infection risk. Two days later, he developed severe autonomic dysreflexia that improved after removal of the system.

Conclusions: Autonomic dysreflexia, a life-threatening complication, has not been reported before as a side effect of a fecal management system. These systems should be used with caution in patients with high-level spinal cord injury.

J Spinal Cord Med. June 2010;33(3):266–267

Key Words: Autonomic dysreflexia; Fecal management system; Spinal cord injuries; Tetraplegia; Pressure ulcer

INTRODUCTION

Autonomic dysreflexia (AD) is an acute life-threatening medical emergency characterized by an unregulated severe sympathetic discharge that occurs in patients with spinal cord injury. It can be seen with an injury level as low as T10 but is typically seen at or above T6. The major signs are hypertension (an increase in systolic blood pressure of 20–40 mmHg), altered heart rate (usually reflex bradycardia; tachycardia may also occur), anxiety, visual changes, and nasal congestion. In addition, headache, flushing, and sweating usually occur above the level of injury. Any stimulus below the level of the spinal lesion can trigger AD. Bladder distension/blocked catheter, fecal impaction, pressure ulcers, ingrown toenails, urinary tract infection, and bladder stones are common stimuli for AD (1). Recognition of AD is important because inadequate management may cause serious morbidity and mortality (2).

The fecal management system (FMS) consists of a tube inserted in the rectum, which is used for diverting

stool from the perianal region, thereby reducing skin breakdown and infection in patients with fecal incontinence. Herein, we present a patient with tetraplegia who developed acute AD due to colonic irritation by a fecal-collecting device (Flexi-Seal FMS, Convatec Inc, Skillman, NJ).

CASE REPORT

A 26-year-old man with C5 tetraplegia ASIA-A due to a C5 fracture following a gunshot was hospitalized after a 2-month stay in the intensive care unit. He had a grade 4, 4 × 5-cm sacral pressure ulcer and urinary and fecal incontinence. During his stay in our rehabilitation center, he used an air-fluidized bed and underwent 2 skin graft operations for his sacral pressure ulcer. After the second surgery, the Flexi-Seal FMS was inserted to protect the perianal region from the moisture and chemical damage by feces. It was inserted without difficulty and functioned properly. However, 2 days later he developed an AD attack characterized by hypertension (180/100 mmHg), severe headache, facial flushing, palpitation, and great apprehension. Suspecting a possible colonic irritation, the FMS was removed. Thereafter, his blood pressure decreased to 110/70 mmHg, and headache, anxiety, and other symptoms disappeared immediately. Accordingly, the device was discontinued.

Please address correspondence to Ismail Safaz, MD, Physical Medicine and Rehabilitation, Gulhane Military Medical Academy, TSK Rehabilitasyon Merkezi, Bilkent, Ankara, Turkey 06530; p: +90 3122911707; f: +90 3122911707 (e-mail: safazi@yahoo.com).

© 2010 by the American Paraplegia Society

JSCM

Figure 1. Flexi-Seal fecal management system.

DISCUSSION

Autonomic dysreflexia is a potentially life-threatening hypertensive medical emergency occurring in patients with spinal cord injury at T6 level and higher. A noxious stimulus, commonly distension of the urinary bladder or irritation of the colon, leads to massive sympathetic discharge above the level of sympathetic splanchnic outflow. This sympathetic discharge accounts for the symptoms and signs of AD, and the clinical scenario may even include sudden death resulting from hypertensive hemorrhage in the brain (2). In our case, the stimulus for AD was most likely the FMS, which caused colonic irritation, because AD reversed immediately with its removal.

Flexi-Seal FMS is indicated for the fecal management of patients with fecal incontinence; it can be used consecutively for up to 29 days (3). It diverts stool to a collection bag attached to a catheter (Figure 1). By minimizing stool leakage, the FMS may reduce skin breakdown and associated complications (4). After this patient's second graft operation for sacral pressure ulcer, we used FMS to protect the wound from moisture and fecal contamination during healing.

In the study by Padmanabhan et al, some of the adverse events pertaining to FMS use were skin breakdown, infection, wound enlargement or deterioration, nonspecific gastrointestinal events, and fever (4). A case of significant rectal bleeding was also reported by Page et al (5). On the other hand, to the best of our knowledge, AD has not been reported as a side effect of FMS in the previous literature. Furthermore, the device is not contraindicated in patients with tetraplegia or paraplegia above T6 level who are at risk of AD (3).

CONCLUSIONS

A FMS may be utilized to help prevent perineal skin breakdown in patients with fecal incontinence. However, medical and nursing staff should give careful consideration before using an FMS in patients with high-level spinal cord injury due to the risk of AD.

REFERENCES

1. Karlsson AK. Autonomic dysreflexia. *Spinal Cord*. 1999; 37(6):383–391.
2. Dolinak D, Balraj E. Autonomic dysreflexia and sudden death in people with traumatic spinal cord injury. *Am J Forensic Med Pathol*. 2007;28(2):95–98.
3. Flexi-Seal® Fecal Management System [package insert]. Princeton, NJ: ConvaTec, a Division of ER Squibb & Sons, LLC; 2006.
4. Padmanabhan A, Stern M, Wishin J, Mangino M, Richey K, DeSane M. Clinical evaluation of a flexible fecal incontinence management system. *Am J Crit Care*. 2007;16(4): 384–393.
5. Page BP, Boyce SA, Deans C, Camilleri-Brennan J. Significant rectal bleeding as a complication of a fecal collecting device: report of a case. *Dis Colon Rectum*. 2008;51(9): 1427–1429.