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ORIGINAL ARTICLE

# Rectourethral fistula secondary to a bowel management system

**Jamie A'Court*, Petros Yiannoullou, Lyndsay Pearce, James Hill, David Donnelly, David Murray**

*Manchester Royal Infirmary, Oxford Road, Manchester M13 9WL, United Kingdom*

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Bowel management system;
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**Summary** A 67-year-old Caucasian male was admitted under the vascular team with critical lower limb ischaemia. Bypass surgery was performed and he was admitted to the intensive care unit post-operatively. The patient experienced a turbulent post-operative recovery complicated by pneumonia, poor respiratory wean and faecal incontinence. A bowel management system was inserted but after 18 days it was reported faecal matter was bypassing his catheter. A CT scan demonstrated an area of necrosis where the bowel management system had been sited which formed a rectourethral fistula.

Bowel management systems are frequently used in intensive care unit settings where a high proportion of patients suffer from faecal incontinence. If used correctly they can reduce skin contamination, infection and maintain patient hygiene. However, appropriate assessment and investigations should be addressed before inserting such devices. This case report highlights serious adverse effects of these devices and describes the first documented case of these devices causing a rectourethral fistula.


**Implications for Clinical Practice**

- Highlights a serious adverse effect of a commonly used device.
- Rigorous assessment needs to be undertaken before insertion of these devices.
- This device should be contraindicated in patients with confirmed or suspected pelvic ischaemia.

## Introduction

Patients on the intensive care unit (ICU) are at high risk of faecal incontinence (Bliss et al., 2000). Immobility, increased nutritional needs and antibiotic use are all

* Corresponding author at: Apt 23, The Mayfair, 59 Palatine Road, Manchester M20 3LS, United Kingdom. Tel.: +44 07533094948.
*E-mail address:* Jamie.acourt@doctors.org.uk (J. A'Court).

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factors increasing the risk of faecal incontinence and diarrhoea (Stevens et al., 2003). Faecal incontinence presents a significant challenge in the management of critically ill patients receiving treatment in the ICU (Beitz, 2006). The incidence of faecal incontinence in intensive care unit patients varies between 20 and 30% in published series (Bliss et al., 2000; Ousey and Gillibrand, 2010). It is associated with morbidity and mortality as it threatens skin integrity, impairs wound healing and is a local and systemic infection risk. Diarrhoea is an independent risk factor for the appearance of moisture skin lesions (Keller et al., 2002). It also causes significant nursing difficulties in maintaining patient hygiene and dignity. In the past, Foley catheters and rectal tubes have been utilised in the management of faecal incontinence. However they often failed, with reports of morbidity secondary to rectal barotrauma and faecal bypass (Nelson et al., 1979). The National Institute for Clinical Excellence (NICE) issued guidelines in 2007 for the management of patients with faecal incontinence. The recommendations include the use of faecal collection systems for patients in the ICU or palliative care setting (Torjesen, 2007).

Bowel management systems (BMS) are an effective way of reducing the risk of pressure ulcers and preserving perianal skin integrity (Benoit and Watts, 2007; Keshava et al., 2007). One study reported a reduction in enteric pathogens found in urine, blood, skin and soft tissue in burns patients with threatened need for colostomy treated with a BMS compared to those who were conventionally managed (Echols et al., 2004). In another small prospective study they could not find evidence of anal or rectal injury on proctoscopic examination following removal of the device (Kim et al., 2001).

The commonly used bowel management systems such a ConvaTec Flexi-Seal® and Hollister InstaFlo™ employ a silicone tube connected to a collection bag and are secured in place with an inflatable low-pressure balloon cuff that should be sited within the rectum for a maximum period 29 days (Hollister, 2009). The indications are liquid or semi liquid stools in bed bound patients with little or no bowel control (Table 1). Their use is contraindicated in patients with suspected or confirmed rectal mucosal ulceration, recent colorectal surgery and anal or rectal strictures (ConvaTec, 2013; Hollister, 2009).

Complications of BMS use include rectal bleeding (Bright et al., 2008; Page et al., 2008; Sparks et al., 2010), pressure necrosis (Reynolds and van Haren, 2012) and recto-vaginal fistula (Massey et al., 2010). We report a case of rectourethral fistulisation secondary to BMS use.

## Case report

A 67-year-old Caucasian male with peripheral vascular disease was admitted from the emergency department with lower limb rest pain with a history of progressive intermittent claudication (IC). His past medical history included hypertension, hypercholesterolaemia and 60 pack year history of smoking. He also underwent bilateral iliac artery with

**Table 1** Indications, contraindications and possible adverse effects of bowel management systems (ConvaTec, 2013; Hollister, 2009).

| | |
|---|---|
| Indications | Patient has liquid to semi liquid stool<br>Patient is bed bound<br>Confirmed diagnosis of *Clostridium difficile* infection<br>Persistent diarrhoea<br>Little or no bowel control<br>Patient must have adequate anal sphincter control and tone<br>Approval from medical team<br>Patient receiving palliative care with faecal leakage<br>Patient has skin breakdown caused by faecal incontinence or leakage |
| Contraindications | Large bowel surgery or rectal surgery within the last year<br>Sensitivity or allergy to any of the materials used in the BMS<br>Rectal or anal injury<br>Severe rectal or anal stricture or stenosis<br>Suspected or confirmed rectal mucosal impairment<br>Confirmed rectal or anal tumour<br>Severe haemorrhoids<br>Faecal Impaction<br>Spinal cord injury above T5 (due to risk of autonomic dysreflexia) |
| Possible Adverse effects | Loss of anal tone<br>Pressure necrosis of rectal or anal mucosa<br>Rectal bleeding<br>Infection<br>Bowel obstruction<br>Perforation of the bowel<br>Persistent rectal pain<br>Abdominal distension<br>Unable to open bowels for more than 48 hours |