Care of spinal cord injury in non-specialist settings

Patients with spinal cord injuries have individual care routines to minimise their risk of complications, which need to be maintained when they are admitted to hospital.

In this article...

- Common complications of spinal cord injury
- How individualised care routines prevent complications
- Maintaining routines when patients are admitted to hospital

**5 key points**

1. About 40,000 people live with a spinal cord injury in the UK.
2. Post-injury complications include bladder and bowel dysfunction, pressure ulcers, and autonomic dysreflexia.
3. As part of rehabilitation, patients follow intensive education programmes to enable them to be as independent as possible.
4. Admission to hospital can result in disruption to longstanding care routines, which can be distressing.
5. People with SCI usually have links with a specialist centre that can offer advice on patient care.

**Author**

Sian Rodger is a clinical nurse specialist at the London Spinal Cord Injury Centre, Royal National Orthopaedic Hospital Trust.

**Abstract**


Patient with spinal cord injuries have individualised care routines to help prevent complications. Disruption to these routines following admission to non-specialist settings can have long-term consequences. This article focuses on the key long-term problems of pressure ulcers, bladder and bowel dysfunction, and autonomic dysreflexia. Nurses working on general wards need to consider how to manage these problems when caring for patients with spinal cord injury.

Approximately 40,000 people in the UK live with paralysis following a spinal cord injury (SCI) and 1,200 new injuries occur every year (Liu LQ et al, 2014).

The spinal cord provides a two-way passage for communication between the brain and the body via ascending sensory and descending motor pathways (Rossignol, 2013). Interruption to the sensory and motor messages to and from the brain, as a consequence of SCI, will result in loss of movement, sensation and autonomic control below the level of cord damage. The severity of disability depends on where the spinal cord is damaged. All communication between the brain and spinal cord below the level of damage is lost in a complete injury; in an incomplete injury, varying amounts of sensory and motor function are retained (Teufack et al, 2013).

Due to the long-term disability associated with SCI, secondary medical complications are common and include pressure ulcers, bladder and bowel dysfunction, spasticity, pain, osteoporosis, cardiovascular complications and respiratory complications (Sezer et al, 2015). These often reduce functional independence and impact on quality of life (Sezer et al, 2015).

**Expert patients**

Patients with SCI usually have a long period of specialist rehabilitation, which includes an intensive education programme to help them understand how their SCI has affected their body and how to care for themselves. The aim is to reduce the risk of post-injury complications and improve quality of life (Bloemen-Vrencken et al, 2007). Patients spend a lot of time “fine tuning” their routines so that, for example, they are confident that their bowel and bladder management will ensure they maintain continence.

The aim of rehabilitation is to make patients as independent as possible with their care needs. However, if they are unable to perform these independently due to having a high-level (cervical) injury or ill health, they should be able to direct their care, as they are often experts (Lindberg et al, 2013).

Disruptions to care routines can have distressing consequences; for example, sustaining a pressure ulcer can result in bed rest for weeks or months until it heals. Fear of complications can lead to patients being very prescriptive about their management and care routines, which can appear inflexible to staff who are unfamiliar with SCI (Kroll et al, 2007).

It is important for non-specialist nurses...
to recognise the expertise of SCI patients and consider the Nursing and Midwifery Council’s Code (2015), which requires nurses to listen to patients, respond to their preferences and concerns, work in partnership with them and acknowledge the contribution they can make to their own healthcare.

**Specialist support**

Most patients will have lifelong support from an SCI centre (Spreyermann et al, 2011); these centres are able to offer advice and support to staff in non-specialist healthcare settings. It is reassuring for patients if there is collaboration in drawing up a plan of care, and staff from a nearby SCI centre may be able to visit non-specialist centres to meet with patients and nursing staff, and look at how care routines can be improved, share their knowledge and give training on SCI.

When patients with SCI are admitted to wards that do not specialise in their care, it is vital for staff to work with them to understand their care routines. If these routines cannot be followed because of a patient’s condition, this needs to be explained and an alternative plan agreed with the patient (Box 1). For example, if intermittent catheterisation cannot be managed during an acute illness, the patient may require a urethral indwelling catheter and a clamping regime to maintain bladder capacity.

The extent of patients’ physical limitations should also be identified, and a full risk assessment performed to identify potential clinical risks and how these can be managed (National Patient Safety Agency, 2007). For example, tetraplegic patients will have reduced or no upper limb function, so making sure they can access the call bell is essential.

Discharge planning should also be considered from the point of admission, in order to facilitate a safe and timely discharge with the necessary care and equipment in place.

The most common problems encountered by SCI patients on admission to hospital are pressure ulcers, bladder and bowel dysfunction, and autonomic dysreflexia. The key points in avoiding these complications are outlined below.

**Pressure-ulcer prevention**

Pressure ulcers can have devastating physical and psychological effects on people with SCI and may lead to prolonged hospital stays, which has financial implications for the NHS (Marin et al, 2013). These wounds are the most common secondary complications are outlined below.

**Complications**

- Pressure ulcers
- Bowel dysfunction
- Autonomic dysreflexia

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### Box 1. CASE STUDY

David Ledwidge* is 40 years old and has a SCI at T4 (complete injury); this means the last fully functioning nerve before cord damage is the 4th thoracic nerve, so he has paralysis to his legs lower trunk. Mr Ledwidge was admitted to hospital with cholecystitis (inflammation of the gall bladder), and experienced a number of problems:

- He could not perform his own bowel management due to pain. The nurses were unable to perform digital removal of faeces as they were not trained, so he had to wait for a junior doctor, who was not always available at the same time each day. This resulted in faecal incontinence, which in turn increased his risk of skin damage and resulted in an ineffective bowel routine (Coggrave et al, 2006), and significant emotional distress.
- He needed assistance to turn in bed but staff were not always available at the right times, so he developed a grade 1 pressure ulcer on his hip.
- He had an episode of autonomic dysreflexia (AD) due to a distended bowel. Nursing staff had a limited knowledge of AD so he had to instruct them on how to manage it, which increased his anxiety and decreased his confidence in the nursing team.

These problems could have been avoided if Mr Ledwidge’s needs had been fully assessed on admission, his care plan had been discussed with him and ward staff had liaised with his specialist centre.

* Patient’s name has been changed

### Table 1. Typical Bowel-Management Routine for Patients with Reflexic Bowel

<table>
<thead>
<tr>
<th>Management</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gain patient consent</td>
<td>NMC code 4.2 (2015) states: “Make sure you get properly informed consent and document it before carrying out any action”</td>
</tr>
<tr>
<td>Glycerine suppositories</td>
<td>To stimulate the bowel, assist colonic transit and produce a spontaneous result</td>
</tr>
<tr>
<td></td>
<td>ONLY FOR PATIENTS WITH REFLEXIC BOWEL</td>
</tr>
<tr>
<td>Warm drink</td>
<td>To promote gastrocolic reflex and encourage stools to move through the bowel into the rectum</td>
</tr>
<tr>
<td>Digital rectal stimulation</td>
<td>To stimulate the bowel, assist colonic transit</td>
</tr>
<tr>
<td></td>
<td>ONLY FOR PATIENTS WITH REFLEXIC BOWEL</td>
</tr>
<tr>
<td>Digital removal of faeces</td>
<td>To empty bowel in order to reduce occurrence of accidents later in the day</td>
</tr>
</tbody>
</table>

Source: MASCIP, 2012
complication associated with SCI; it is estimated that 80% of people with an SCI develop at least one pressure ulcer in their lifetime (Gupta et al, 2012). Risk factors for pressure ulcers include reduced mobility, impaired skin sensation, incontinence and spasticity – all of which are common in people with SCI. Prevention of pressure ulcers is a lifelong commitment for people with SCI and their carers (Sezer et al, 2015); patients are taught how to care for their skin during their rehabilitation, including turning regimes, positioning and pressure-relief movements while sitting in their wheelchairs. Patients will have a prevention routine developed specifically to meet their individual needs.

Skin management
In order to keep their skin healthy, people with SCI are encouraged to check their skin at least twice daily for marks caused by pressure, friction or shearing; perform regular pressure relief while sitting in a chair, such as leaning forward for two minutes every hour to allow reperfusion of the tissue (Stinson et al, 2013); and repositioning when in bed. Any mark on the skin should be kept pressure-free until resolved, in order to prevent deterioration and aid the healing process (Liu LQ et al, 2014). Good nutritional intake should be encouraged (a balanced diet) and it should be noted that systemic infection will cause the skin to be more vulnerable (Percival et al, 2012). Disruption to skincare routines can lead to pressure ulcers, increased length of hospital stay, and have huge implications for the patient, such as pain, risk of infection, long periods of bed rest and low mood (Kruger et al, 2013). A more intensive skincare routine may be required during times of illness, and this should be discussed with the patient and tissue viability nurse specialist.

Bowel dysfunction
One of the most distressing aspects of SCI is the loss of voluntary control over bowel function. Dysfunction of the colon due to central neurological damage is called neurogenic bowel (Coggrave et al, 2006); patients may have problems including faecal impaction, haemorrhoids, abdominal pain, constipation, anal fissure and prolonged evacuation due to the increased time taken for stools to pass through the colon. An effective and timely bowel management programme is essential (Pardoe et al, 2012) and usually includes digital removal of faeces (DRF), laxatives, abdominal massage, digital massage (gently placing a finger into the rectum to stimulate the bowel), rectal stimulation and/or pharmacological (suppositories).

The sacral nerves S2-4 control bowel function; damage to the spinal cord above the level of T12/L1 preserves reflex activity in the rectum and sphincter, which is classed as a reflexic bowel. An injury at or below this level interrupts reflex activity in the rectum and sphincter, and is classed as a flaccid/areflexic bowel (Coggrave et al, 2006).

Bowel care
Patients with SCI will usually have an established bowel-management programme in place, which is undertaken at about the same time each or every other day. A regular routine ensures the bowel will empty fully and reduces the risk of faecal incontinence later in the day (Pardoe et al, 2012). Disruption to this process increases the risk of bowel accidents, constipation, bloating, embarrassment for the patient and carers.

**BOX 2. BOWEL-MANAGEMENT MISCONCEPTIONS**

**FALSE** It is illegal to perform digital rectal examination and digital removal of faeces
The Royal College of Nursing (2012) guidelines for bowel care, which include digital rectal examination and digital removal of faeces, state that for some patients, such as those with SCI, these procedures are an integral part of their routine and should not be interrupted, regardless of the care setting.

**TRUE** Only nurses with special training can perform DRE and digital removal of faeces
These procedures can only be undertaken by a health professional who demonstrates professional competence in them (RCN, 2012). Training should be provided and experienced healthcare staff should be available at all times to teach the procedure, in order for nursing staff to facilitate bowel care for people with SCI (National Patient Safety Agency, 2004).

**FALSE** It is abuse to perform digital rectal examination and digital removal of faeces
If a patient has freely given informed consent and has the mental capacity to make informed decisions, it is not abuse (RCN, 2012).

**FALSE** Bowels can be managed with medication only
This can lead to ineffective bowel emptying and bowel accidents, while continuous passive soiling or diarrhoea increases the risk of skin breakdown (National Institute for Health and Care Excellence, 2007).

**FALSE** If a patient is having bowels open onto a pad, a digital removal of faeces is not required
This will lead to ineffective and irregular bowel emptying, which could in turn lead to an episode of autonomic reflexia (RCN, 2012).
patient and autonomic dysreflexia (see below). Depending on the level of injury, patients may need assistance to maintain this routine (Multidisciplinary Association of Spinal Cord Injured Professionals, 2012). There are numerous misconceptions about the nurse’s role in bowel management; these are outlined in Box 2.

Bladder dysfunction

Neurogenic bladder is caused by central neurological damage and results in loss of voluntary control of the bladder. If bladder dysfunction is not managed effectively it can result in urinary incontinence, frequent urinary tract infections and high bladder pressures resulting in reflux (backflow) to the kidneys and kidney damage (Pellat, 2008).

Bladder management

The main objective of bladder management is to achieve satisfactory bladder drainage, low-pressure urine storage and voiding, and adequate bladder capacity (Afsar et al, 2013).

Clean intermittent self-catheterisation is a safe, effective and convenient technique for patients who are able to carry out the procedure. For those with limited or no hand function, suprapubic catheterisation is preferred (Sezer et al, 2013).

Autonomic dysreflexia

Autonomic dysreflexia (AD) is an acute syndrome of excessive uncontrolled sympatheic signals (Calder et al, 2009) that occurs in people who have a SCI above the sixth thoracic vertebra. It is caused by a painful (noxious) stimuli, such as a blocked catheter or impacted bowel, below the level of cord damage and the body’s unopposed sympathetic response to this (Calder et al, 2009). Classic symptoms for AD are pounding headache due to a sharp rise in blood pressure, and skin flushing above the level of injury. The most common causes are bladder and bowel distention (Furusawa et al, 2011), and patients are usually able to recognise and direct its management. AD is a potentially life-threatening event and needs to be managed appropriately, so it is vital that nurses listen to patients and escalate the problem immediately; however, it can be avoided by maintaining bowel and bladder regimes.

Conclusion

Spinal cord injury is a complex and life-changing injury. Secondary complications are common, and often affect quality of life and functional independence. When caring for patients with SCI, it is vital to listen and work in partnership with them, and liaise with professionals at specialist centres; disruptions to care routines can then be kept to a minimum and patients can feel confident in the care they are receiving. Collaborating with specialist centres enables non-specialist health professionals to gain knowledge that will not only benefit the patient concerned, but also patients with SCI in the future.

Useful links

- MASCIP guidelines (2012) for management of neurogenic bowel dysfunction in individuals with central neurological conditions give comprehensive information/instruction on bowel management and the rationale behind it. Bit.ly/NeurogenicBowelGuidance
- The Spinal Injuries Association offers peer support and volunteers with SCI, who can visit patients in hospital to offer support and reassurance. It also produces information booklets, which can be accessed online. Bit.ly/SCIResources

References

Royal College of Nursing (2012) Management of lower bowel dysfunction, including DRE and DRF. Bit.ly/RCNBowelsGuidance

For more on this topic go online...

- Autonomic dysreflexia in spinal cord injury
  - Bit.ly/NTAutonomic
- Exploring the benefits of anal irrigation
  - Bit.ly/NTAnalIrrigation