IMPROVING BOWEL CARE AFTER SURGERY FOR HIP FRACTURE

Catherine Neighbour describes how changes to practice by the multidisciplinary team in a trauma unit led to fewer patients experiencing constipation.

Abstract

Constipation is a common problem in older people with hip fracture because of immobility, opioid prescription and lack of privacy. There is a dearth of meaningful evidence about the way constipation is recognised and its subsequent treatment. The orthogeriatric team in a university hospital trust investigated the effectiveness of bowel care for older inpatients after hip fracture.

Three audits followed a cohort of 40 people aged 60 and older after surgical fixation of hip fracture. After the initial audit in 2010, the expectation was that all hip fracture patients should be started on laxatives on the day of surgery and a chart used to document stool type. Nursing and medical staff needed to ensure that adequate pain control was maintained while opiate analgesia was given only when necessary.

Patients with hip fracture are now significantly less constipated. There is improved patient satisfaction with analgesia provision. While laxative prescription is important, a motivated ward team encouraging its uptake is vital. All patients now have a comprehensive record of bowel movements. The improvements demonstrate the importance of a multidisciplinary approach when caring for these patients.

Keywords
Analgesia, constipation, hip fractures, laxatives, pain management, patient satisfaction

HIP FRACTURE is a major healthcare problem associated with significantly high levels of morbidity, mortality and loss of function. As the population ages the incidence of hip fracture will increase accordingly (Pioli et al 2008). Hip fracture already accounts for 50% of injury-related hospital admissions and 66% of bed days for patients over 65 years of age (Department of Health 2007). Length of stay can be affected by complications such as constipation (Hommel et al 2008). After hip fracture and subsequent hospitalisation, there are several risk factors for constipation, in particular, immobility, lack of privacy and administration of opioid analgesia (Joanna Briggs Institute 2008).

Three audits were conducted in 2010, 2011 and 2013 to evaluate bowel care for older people after hip fracture. The audits were undertaken on dedicated trauma wards at a large university teaching hospital. The medical orthogeriatric team carried out the initial audit. Subsequent audits were nurse led. The audits were carried out at intervals over a four-year period.

The aim for patients with hip fracture on the trauma wards is medical optimisation and surgical fixation within 36 hours of admission. Most begin to mobilise the day after surgery. Although this is a relatively short period of complete immobility, movement will subsequently be impaired for a considerable time. Imposed bedrest leaves little alternative but the use of bedpans for...
bowel movements. Heath (2009) highlighted the importance of individual body positioning when voiding, which is not always possible when using bedpans. This reduction of autonomy and privacy can be stressful for patients.

The British Orthopaedic Association (2007) recommended that care of older patients with hip fracture is shared between orthopaedic surgeons and orthogeriatricians. In addition to the provision of traditional surgical care, two consultant orthogeriatricians provide medical care for all hip fracture patients over the age of 60 on the trauma wards.

Background

To define best practice it is necessary to reflect on the state of current practice (Morrell and Harvey 1999). The initial 2010 audit provided this information. It found that there was no standardised laxative regimen. All patients had stool frequency well documented, but there was no description of stool type. Ward-based junior doctors rarely knew patients’ bowel status.

A literature search revealed little available evidence for standardised bowel care. Therefore, a local standard was applied using previous audit recommendations. Involving staff in setting standards ensures a greater likelihood of any resultant change being implemented (Garland 2005). The local standard was that all patients should have stool frequency and type documented on a stool chart at least daily. Nursing and medical staff should be aware of patients’ bowel function. All patients should have regular laxatives prescribed from the day of surgery and ward doctors were to assess analgesia use on their daily ward round and discontinue wherever possible. Nursing staff were advised to regularly assess the need for opioid analgesia.

To monitor levels of constipation, stool frequency and type should be recorded (Harari 2004). After the initial audit, it was agreed that a chart similar to the Bristol Stool Form Scale (Lewis and Heaton 1997) would be used as a guide to record bowel movements. Previously stool type had not been documented at all. Having this information would make the recognition of constipation more accurate.

Sometimes opioid analgesia was being administered unnecessarily. The use of analgesia, in particular opioids, is known to lead to episodes of constipation. Opiate receptors are present in the bowel and the administration of opiates affects the peristaltic action of the gut. To address this problem, Roberts (2007) advocated regular review of the strength of analgesia prescribed and the provision of laxatives if necessary.

The initial audit ascertained how many patients had laxative prescriptions, but not the uptake of these prescriptions. Subsequent audits evaluated uptake. Nurses administering medication were aware of how often patients declined laxatives, despite the prescription being for regular rather than ‘as-needed’ administration. It was thought that doses were often refused because patients waited until they could get to the toilet to open their bowels.

Literature review

For the audit to be meaningful, it was essential to determine whether an effective baseline standard for bowel care was in place. A literature search of constipation in older people was carried out. Finding the necessary pieces of research involved the use of relevant electronic databases, available through the university e-library. Databases searched included the British Nursing Index (Ovid SP), CINAHL with full text (EBSCO), Clinical Evidence (BMJ), Cochrane Collaboration, Cochrane Library, Department of Health, EMBASE, INTUTE, JBI COnNECT, MEDLINE (Ovid), National Institute for Health and Care Excellence and Royal College of Nursing. The search was undertaken between May and October 2011.

Beecroft et al (2010) advised that to be significant, limits should be set when undertaking a literature search. As the patients involved in the audit were aged 60 and over, paediatric studies were excluded from the search. Only articles written in English were selected. A date range of the past ten years was applied. Little actual research was available; one pilot study looked specifically at constipation after hip fracture. More nursing research is needed to enhance the evidence base on bowel elimination issues (Pellatt 2007).

Davies et al (2008) asserted that increasing age was a significant factor in whether patients developed constipation. Harari (2004) noted that despite a high rate of subjective constipation in older people, there was no reduction in actual frequency of bowel movements with ageing. Colonic function appeared to be affected by factors associated with ageing such as lack of mobility, polypharmacy and chronic disease, rather than by ageing itself. Mihaylov et al (2008) found it difficult to recruit participants for their own large-scale randomised controlled trial. Despite more than adequate resources the trial had to be abandoned due to lack of uptake. It was surmised that constipation was seen as less important than other conditions prevalent in general practice, because it was not an agreed target in a national framework.
Therefore, there was a reluctance to participate in research in this area. It was also thought that for many practitioners the subject was simply not sufficiently interesting. This lack of interest by practitioners will deter patients from participation.

Two qualitative studies revealed a perceived discrepancy between the views of older patients and healthcare workers on constipation. Spinzi et al (2009) established that older patients and their doctors tended to define constipation differently, with a proportionately large difference of views. Anells and Koch (2002) advocated exploration by healthcare professionals into what constipation meant for each individual. Constipation can elicit strong emotions of worry and frustration. Older people wanted this to be recognised when they sought professional help. They were therefore keen to be involved in any decision making about their bowel care.

Mihaylov et al (2008) found that older people regarded normal bowel habit as a daily bowel movement where stool was passed without discomfort or difficulty. This contrasted with healthcare workers’ views that normal was anything from three times a day to three times a week. They argued that this difference in the interpretation of normal frequency influenced the way in which patients managed their perceived constipation.

Harari (2004) advocated the use of a simple stool chart to gain an objective measurement of bowel pattern, documenting frequency, consistency and continence. A study of the effectiveness of bran supplements in older orthopaedic patients (Kaçmaz and Kaçiç 2007) found that, although there was no difference in the frequency of bowel movements in the treatment group, the size and consistency of stool and lack of straining were all improved. This provides further evidence that constipation may not be apparent if stool frequency alone is monitored. By asking about bowel habit each day, nurses can monitor any potential problems, and also show that they are interested. Zhou et al (2010) found indications that nurses should pay particular attention to patients’ psychological needs, thereby improving the adverse effects of functional constipation.

Seers (2006) emphasised the importance of correct use of analgesia in older people, starting with a low dose and increasing slowly. Davies et al (2008) and Madsen et al (2010) observed that orthopaedic patients admitted for elective and trauma surgery often required opiate prescriptions. This then exposed them to the risk of becoming constipated. Davies et al (2008) found that when given opiate-based analgesia, there were broadly similar numbers of constipated and non-constipated patients. They concluded that to avoid constipation, opioids should be used for as short a time and at as low a dose as possible.

Methods

Criteria were developed into an audit tool. This allowed for the collection of baseline data before systematic implementation and subsequent changes in practice (Morrell and Harvey 1999). The audit tool used was a concurrent record review, allowing valid comparison between results (Jackson and Furnham 2000). The directorate audit officer was contacted and the audit plan discussed. He ascertained that the audit had clearly defined rationale, aims and objectives.

The objective was that patients being treated for hip fractures did not feel constipated. This gives a broad indication of good practice. To provide more detail of how to achieve this, criteria were needed (Patel et al 2010). By using structure, process and outcome, rather than merely focusing on outcome, it was possible to track back and find the root of a problem should outcome not be met. This was useful here, as the standards described above were not being achieved despite attempts to change practice. While it is important to have an objective measure for the purpose of audit, constipation is subjective to the individual. The time between bowel movements must be considered against other factors, for example, stool consistency, straining and gastrointestinal symptoms.

It was noted that defining constipation was difficult because it meant different things to different people. Petticrew et al (1997) suggested that despite symptoms such as straining being relatively common, they might be transient, causing further confusion when offering a definition. Harari (2002) asserted that there was no universally accepted or understood definition of constipation. Each of us knows what we mean by constipated, but this depends on our own experience and expectations. It is generally accepted that the passing of at least three stools a week without straining may be considered as normal function (Edwards et al 2003). Symptoms of constipation including stomach aches and cramps, feeling bloated and sick with a loss of appetite all inhibit attempts at rehabilitation after surgery.

The 40 patients included in the audits were admitted consecutively with a diagnosis of hip fracture. All were 60 years of age and above. They were under the care of an orthogeriatrician and an orthopaedic surgeon.
Patients had been admitted at least six days previously. This ensured that enough time had passed to ascertain their bowel habit and identify any potential problems. It was not always possible to capture the information for every patient on day six. There was some variation – the longest number of days from admission was 20. Some patients had transferred from the unit or died before day six. The audit continued until there were 40 participants in each sample.

Three trauma wards were involved in the audit. A junior member of the medical orthogeriatric team completed the initial audit in 2010. One registered nurse was responsible for completing the second and third audits. Nursing and medical notes were used to gather most of the necessary information. A verbal descriptor scale was also used to gain some information. Stewart and Rao (2003) advocated this as a method that avoided the use of leading questions. Each individual audit tool was completed promptly and accurately using this combination. Grainger (2010) recommended that clinical audits should be undertaken quickly and their findings made brief and user-friendly, so that they can be incorporated into clinical care with ease.

Results

Recording bowel movements Documentation of the frequency of bowel movements was always good. This had been recorded for all patients in all audits (Table 1). Unfortunately the recorded information was not always acted on. In the initial audit, none of the patients had a stool-type chart and a recommendation was made that all patients admitted should have a stool-type and frequency chart that would be regularly reviewed.

The second nurse-led audit identified that patients had frequency of bowel movements recorded between two and ten times daily on two or three different charts. A total of 45% \((n=18)\) patients had information recorded on different charts that did not correspond. This demonstrated that despite much documentation, some information was inaccurate. When stool type was documented the average longest time between bowel movements was 3.4 days. When stool type was not documented, the average longest time was five days. Although numbers were small, patients with a chart describing frequency and stool type were less constipated than those without such a chart.

In the first audit none of the patients had a record of stool type. By the third audit all patients had a chart incorporating the Bristol Stool Form Scale (where stool type and frequency were recorded) and an observation chart where stool frequency was documented. There was 95% accuracy between records.

Laxative prescription Laxative prescription was high at the time of all three audits. Prescription of laxatives on admission or the following day had improved significantly since the initial audit. The second and third audits assessed compliance with uptake of laxatives as well as their prescription. Across all audits an average of 90% \((n=36)\) of patients with a regular laxative prescription demonstrated good practice. However, in more than 75% \((n=30)\) of cases some doses had been omitted because patients had refused them. This showed a continued need to encourage uptake in patients still requiring laxatives to avoid constipation and its symptoms.

Frequency of bowel movements As the audit results focused on the entire hospital stay, a period of four days was used to measure constipation.

<table>
<thead>
<tr>
<th>Measure</th>
<th>2010 (n) (%)</th>
<th>2011 (n) (%)</th>
<th>2013 (n) (%)</th>
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</thead>
<tbody>
<tr>
<td>Stool frequency recorded?</td>
<td>40 (100)</td>
<td>40 (100)</td>
<td>40 (100)</td>
</tr>
<tr>
<td>Stool chart used?</td>
<td>0 (0)</td>
<td>14 (35)</td>
<td>40 (100)</td>
</tr>
<tr>
<td>Laxative prescribed at the time of audit?</td>
<td>37 (93)</td>
<td>36 (90)</td>
<td>35 (88)</td>
</tr>
<tr>
<td>Laxative prescribed on admission or the following day?</td>
<td>23 (58)</td>
<td>34 (85)</td>
<td>34 (85)</td>
</tr>
<tr>
<td>Four or more days between bowel movements since admission?</td>
<td>37 (93)</td>
<td>36 (90)</td>
<td>15 (38)</td>
</tr>
<tr>
<td>‘As-needed’ oral opiates prescribed?</td>
<td>3 (8)</td>
<td>34 (85)</td>
<td>38 (95)</td>
</tr>
<tr>
<td>Medical and nursing staff aware of patient’s current bowel habit?</td>
<td>20 (50)</td>
<td>24 (60)</td>
<td>30 (75)</td>
</tr>
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</table>
This would allow up to 36 hours pre-operatively for medical optimisation, day of surgery and first day post-operatively. While frequency of bowel movements is not the only indicator of constipation, it does provide a useful measure of incidence. In the initial audit, 93% (n=37) of patients had not had their bowels opened for four days or more at some stage of their admission. In the second audit there was a small improvement to 90% (n=36). The third audit found stool charts were in use for all patients and 38% (n=15) had not had their bowels opened for four days or more at some time during their admission. This demonstrated an improvement in bowel care.

**Opiate prescription** There was a large increase in the prescription of ‘as-needed’ morphine solution from the initial audit. This allowed opiates to be given as necessary, rather than on a regular basis without full consideration of their appropriateness. In the second audit 18% (n=7) more patients had their opiate prescriptions discontinued and 38% (n=15) in the third. This showed a greater awareness of the need to review opiate analgesia. Patient satisfaction with analgesia provision was good in the first audit, but improved nonetheless. Table 2 shows that regular review of analgesia and discontinuation of opiates had a positive effect on patient satisfaction and pain control.

**Staff awareness of bowel habit** Some nursing staff were reluctant to introduce stool charts because they were seen as yet ‘more paperwork’. Medical staff advocated this change, therefore nursing staff might have felt excluded from the process. Broome (1998) blamed hierarchical structures in the NHS for lack of co-operation and communication across professions when implementing change.

Nursing and medical staff had an improved awareness of patients’ bowel habits with each successive audit.

**Discussion**

The planning phase in the implementation of stool charts for all patients was reached after the initial audit. To move to the action phase it was necessary to gain support from nursing staff (Carson 2005), after which the integration into practice phase could then occur. Nursing staff tend to accept change more readily when they take ownership of it (Wright 1999). The importance of accurate records to provide effective bowel care became more apparent during the weekly hip fracture multidisciplinary team meeting held on this unit.

<table>
<thead>
<tr>
<th>Measure</th>
<th>2010 n (%)</th>
<th>2011 n (%)</th>
<th>2013 n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient satisfied with analgesia</td>
<td>36 (90)</td>
<td>38 (95)</td>
<td>39 (98)</td>
</tr>
<tr>
<td>Pain score at rest: none or mild</td>
<td>36 (90)</td>
<td>37 (93)</td>
<td>38 (95)</td>
</tr>
<tr>
<td>Pain score on movement: none or mild</td>
<td>33 (83)</td>
<td>33 (83)</td>
<td>34 (85)</td>
</tr>
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</table>

There is some ambiguity when defining constipation. Individuals’ bowel habits can vary, which makes a single definition of constipation difficult to work with in clinical practice. Kyle (2011) argued that patients identify constipation on the basis of their symptoms, whereas healthcare professionals define constipation in terms of bowel frequency. This appeared to be the case when carrying out these audits. It also helped to explain the disparity of patients feeling their bowel habit was normal, when doctors and nurses thought they were constipated.

Some of the documentation when the first and second audits took place was kept in patients’ nursing notes and therefore not routinely accessed by medical staff. Bowel habit was recorded up to ten times each day on three different charts; this was in addition to specific records in nursing and medical notes. Audit revealed that constipation was still not recognised at times despite profuse documentation. Any record of bowel habit needs to be accessible to all, meaningful and accurate. At the time of the final audit, documentation was more streamlined. Bowel habit was recorded in terms of frequency on the observation chart and in terms of frequency and type on the actual stool chart. As a result of this the team were much more aware of individuals’ bowel habits.

There are no nationally recognised guidelines for laxative prescription. Local good practice was deemed to be that patients would have a laxative prescription at the time they went to surgery. Re-audit found that 90% (n=36) of these patients had a prescription for regular laxatives. Medical staff perceived that if laxatives were prescribed regularly, they would be taken. However, a significant number of patients refused to take them. Now that this has been identified as an issue affecting patient care, nursing staff are well placed in the future to ensure that patients are given appropriate information to make an informed decision about necessary laxatives.

**Conclusion**

The three audit cycles examined the standards of bowel care for patients with hip fracture. The aim
was to ascertain whether improvements had been made in preventing constipation. Staff knowledge of patients’ bowel habits, the monitoring of stool type and the prescription and administration of opiate analgesia and laxatives were considered.

A literature review concluded that constipation in older people is difficult to define because it means different things to different people. Older people tend to describe constipation in terms of symptoms, whereas healthcare professionals are generally more focused on the frequency of bowel movements. After literature review, it became apparent that there was a lack of meaningful evidence in this area. Due to the diverse definitions, available evidence has a wide variety of perspectives. The definitions and baselines can make comparison of existing evidence difficult.

The use of stool-type charts has changed practice. Rather than recording bowel movement purely on the basis of frequency, monitoring the amount and consistency provides a more accurate picture of whether a patient is constipated. It allows a dialogue to open between patient and nurse on the importance of not becoming constipated and taking any necessary laxatives. The timely prescription of prophylactic laxatives should continue. This area of practice is effective, but is reliant on patients’ compliance in taking laxatives. Annells and Koch (2002) and Mihaylov et al (2008) have shown that patients are keen to be involved in decisions about their bowel care. It is important in future to ensure that continued appropriate patient education is offered. While the prescription of laxatives is important, a motivated ward team encouraging their uptake is vital. All patients now have a comprehensive record of bowel movements.

There is an improvement in patient satisfaction with their pain relief; almost all patients now have an as-required oral opiate prescription. Few patients thought their current analgesia was not adequate. Opiates are being given as necessary, rather than on a regular basis without full consideration of their need. More patients had their opiate prescriptions discontinued when no longer needed. This shows a greater awareness of the need for regular review of analgesia.

Patients with hip fracture are now significantly less constipated. Nursing and medical staff have increased awareness: 75% now identify patients’ bowel habits without consulting charts. The records that are kept are now 95% accurate should charts need to be checked. The results are of wider interest, as patient experience has been greatly improved.

References


