Perineal hygiene in patients with pelvic fractures

Mohammad A. Hossain *, Rachel Pearce, Martin D. Bircher

St. Georges Hospital NHS Trust, SHO Orthopaedic Surgery, London SW19 0QT, United Kingdom

Accepted 9 July 2007

Introduction

St. Georges Hospital is a tertiary centre for complex pelvic and acetabular fractures, which receives patients from the South East region. During 2003 it was noted that an unacceptably high number of patients were arriving from their Base Hospital (BH) with soiled and contaminated perineal and sacral areas.

At that time, there were organisational problems with patient transfers. These delays coupled with fears of moving and handling patients had, we think, compromised basic nursing care.

During a national nursing study day on pelvic fractures in 2003, information was imparted to nurses from around the region on moving, handling and nursing care. We noted that many of the evaluation forms of the day commented that this information was too basic. However, we were surprised to still see the high number of patients with soiled perineum arriving for surgical treatment.

Summary

At the tertiary referral Orthopaedic Unit of St. Georges Hospital, it was noted that there was an unacceptably high number of soiled perineum in patients transferred from Base Hospitals. This not only exposed the patients to increased infection [Jepsen O. The effectiveness of preoperative skin preparations: an integrated review of the literature. AORN J 1993;58:477–82; Nix D, Ermer-Seltun J. A review of perineal skin care protocols and skin barrier product use. Ostomy Wound Manage 2004;50:59–67] but was also undignified and unacceptable for them. We decided to audit the problem with a view to finding out why this was happening and to improve the situation.

A 2-year study was carried out over three distinct phases (phase 1: February–June 2004, phase 2: July–November 2004, phase 3: February–November 2005). Observations of soiling were recorded in a questionnaire by the surgeon prior to surgery. Key system and clinical guidelines were implemented during the second phase, and the audit process was repeated.

The percentage of clean perineum in phase 1 was 32%, phase 2 68% and phase 3 99.5% indicating a clear improvement in the overall system.

KEYWORDS
Perineum; Hygiene; Pelvic fractures; Tertiary referral; Audit
Methods
An audit cycle was completed over three phases: February—June 2004, July—November 2004 and February—November 2005. In each phase of the audit the operating surgeon immediately prior to surgery for pelvic/acetabular trauma completed a questionnaire. Perineal cleanliness was assessed in terms of the presence of faeces, excoriations or sores.

After the initial audit period, the referral process between base hospitals and tertiary centre was changed to involve a nurse specialist. This ensured nurse-to-nurse contact with the base hospital, allowing advice to be given regarding the nursing care of these complex cases.

The audit process was repeated immediately after these changes were implemented, and then again the following year.

Results
There were 34 patients in phase 1 and 24 patients in phase 2, making 58 in total for 2004. Of these, 20 patients had pelvic ring injuries, 34 had acetabular injuries and 4 had a combination of the two. There were 15 females and 43 males, with an age range of 14—91 years.

In 2005, there were 118 patients in phase 3. Of these, 74 had acetabular fractures and 44 pelvic ring injuries. There were 26 females and 92 males, with an age range of 17—76 years.

Table 1 shows the incidence of perineal soiling in the three study phases. This is shown graphically in Fig. 1.

Fig. 2 shows the type of contamination of the 1st two phases of the study. In the final phase of the audit, 1 year later, only two cases in 118 had evidence of faeces at the time of surgery (Fig. 3).

Table 1  Shows the percentage clean and soiled perineum in the three phases of the audit

<table>
<thead>
<tr>
<th></th>
<th>Phase 1 (N = 34) (%)</th>
<th>Phase 2 (N = 24) (%)</th>
<th>Phase 3 (N = 116) (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soiled perineum</td>
<td>21 (61.7)</td>
<td>9 (37.5)</td>
<td>2 (0.02)</td>
</tr>
<tr>
<td>Clean perineum</td>
<td>13 (38.2)</td>
<td>15 (62.5)</td>
<td>116 (99.9)</td>
</tr>
</tbody>
</table>

Figure 1  The percentage of clean perineum in each phase of the 2 year audit.

Figure 2  The type and frequency of observed soiling at time of surgery during the first two phases of the audit.

In 2005, there were 118 patients in phase 3. Of these, 74 had acetabular fractures and 44 pelvic ring injuries. There were 26 females and 92 males, with an age range of 17—76 years.

Table 1 shows the incidence of perineal soiling in the three study phases. This is shown graphically in Fig. 1.

Fig. 2 shows the type of contamination of the 1st two phases of the study. In the final phase of the audit, 1 year later, only two cases in 118 had evidence of faeces at the time of surgery (Fig. 3).

(a) Faeces and excoriations noted prior to surgery, 6 days after initial injury. (b) Excoriations remain evident after cleaning.
Discussion

An initial audit confirmed our concerns regarding perineal hygiene. After receiving a small number of cases, it was obvious that there was a significant problem. Following meetings with the nursing staff, it was decided to involve a senior nurse at an earlier stage of the transfer. Previously, communication with nursing staff was not carried out on a routine basis. The transfer was usually doctor-to-doctor and was more focused on the injury and the need for transfer.

During nurse-to-nurse discussion between St. Georges and the BH information was gathered regarding the patient and advice was given to the BH regarding moving and handling of the patient. There appeared to be a fear of moving these patients because of concerns that this would increase their pain or displace the fractures. Telephone advice was not always accepted, but our results show quite clearly that our approach enhances patient cleanliness.

It is probable that early on the tertiary unit contributed to the problem in that there were often significant delays in patient transfer. Lack of intensive care beds, pelvic beds and theatre time often made transfers difficult to plan and execute efficiently. During these delays BH nursing staff appeared not to provide basic nursing care. It might be thought if a patient were being referred on to another unit then an extra effort would have been made to ensure that they arrived in the best condition. However, it is clearly very difficult to ensure adequate preparation of a patient when a transfer is delayed day after day.

There were further issues regarding the timing of transfers. Some patients were transferred in the early hours of the morning with beds becoming suddenly available at the end of a day. The BH did not have time to prepare the patient properly for transfer and the tertiary unit did not have time to prepare the patient for theatre.

A far more important clinical issue was also identified in three cases. During the first phase of the study, neither the doctors nor the nurses had examined the perineum of three patients properly and open wounds were missed. An open pelvic fracture carries a high mortality and delays in diagnosis further increases morbidity and mortality. Had the perineum been properly inspected these injuries would not have been missed.

The standards of care received by the patient at all hospitals involved, including our own unit, varied considerably. Many patients once they arrived at the unit were surprised to find nurses confident in moving and handling independently without the use of aids such as slides and hoists.

The three-cycle audit completed over the 2-year period shows the benefit of simple guidelines in preparing the patient for both transfer and surgery. Both nursing staff and medical teams need to recognise the importance of preoperative preparation of the patient as a whole especially with respect to hygiene and cleanliness. It is not acceptable to have patients waiting for an operation whilst wearing the same garments from their original injury date. A year on from the original study, there is over a 99% success rate in cleanliness and hygiene.

Changes brought in following the first audit

First, it was decided that all pelvic patients should be nursed in a single area and not scattered between wards. This led to review and restructuring of the nursing establishment and skill mix required for these patients. This justified an increase in nursing staff and an appropriate level of skill mix available to these patients (Summary Boxes 1 and 2).

Further to this, an experienced nurse was identified to co-ordinate pelvic transfers, which helped considerably as there was an increase in volume of calls the unit had started to receive.

With this more organised activity of transfers to the unit, there became an increased awareness of transferring patients as soon as possible, ideally arriving 48 h prior to their surgery date. This enabled staff to assess and prepare the patient thoroughly for the following days. Finally as a result of the above changes, handovers and exchange of information became of paramount importance with

---

Box 1. Key points in our liaison with the base hospital during the referral of the pelvic fracture patient

Summary advice given to base hospitals

1. Liaise with specialist centre at the earliest opportunity (ideally within the first 24 h)
2. Nursing and medical staff CAN move the patient (education about turning and transferring)
3. Regular perineal hygiene (consistent washing and turning)
4. Adequate analgesia is essential (basic paracetamol and opiates prescribed prior to PCA)
5. Monitoring bowel motions and use of laxatives (involves patient reassurance and education)
handovers taking place between the TH and ward-based nursing staff, medical staff and the pelvic coordinator.

Conclusions

We have identified a significant problem with perineal hygiene in this group of patients. By implementing the key changes described above, we have achieved and maintained a significant improvement in the standards of preoperative care received by patients with pelvic fractures in our region. We continue to educate less experienced staff from around the Southeast region with patient handling and basic care concepts.

The application of our practice in this unit is not confined to orthopaedics. It is the authors’ recommendation that all tertiary referral units adopt the simple and effective behaviour in communication and education we have demonstrated.

From a review of the literature on Medline, CINAHL and Pubmed databases (November 2005), our data is the first of its kind that applies to a population of patients with pelvic and acetabular fractures.

Conflict of interest statement

There are no conflicts of interest.

Acknowledgments

We would like to thank all surgeons and nursing staff who participated in this audit.

References