

AN AUDIT OF HIP FRACTURE MANAGEMENT THE IMPACT OF A PROFORMA PATHWAY

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Background

Fractured neck of femur has a mortality rate of 10% at one month after injury, 20% at four months and 30% at one year. Morbidity following a fractured neck of femur is also high. Hip fractures account for 87% of the total cost of all fragility fractures and are therefore the most expensive fractures associated with osteoporosis. Approximately 70,000 patients present each year in England at a cost to the NHS of at least £384 million. The average age of patients with fractured neck of femur is over 80 years and many of these patients have significant co-morbidities that may delay their surgery and recovery.

The recent publication of the British Orthopaedic Association (BOA) and British Geriatric Society (BGS) 'Blue Book'¹ guidelines for care of patients with fragility fractures has defined a gold standard for the care of these patients (summary below). This has highlighted the areas of care that are commonly suboptimal and defined the requirements of a Department providing 'ideal' care. In addition, the development of the National Hip Fracture Database (NHFD)² and the resultant requirements for data collection and monitoring encourage the development of a collection tool.

Many orthopaedic departments have a care pathway for patients following fractured neck of femur. However, as far as we are aware, none of these have been developed to meet the requirements of the BOA / BGS guidelines and to provide a suitable data collection tool for the NHFD. We used these guidelines as standards for care in the creation of a proforma pathway for the management of patients following fractured neck of femur (NOF). This proforma includes an A&E fast-tracking protocol as well as records of history, examination findings, investigation results and specialist consultations (Appendix 1).

Prior to the introduction of the pathway, an audit of care following fractured NOF was performed which not only compared against the Blue Book standards but also included other measures of documentation and management which we considered vital. Following the introduction of the proforma the audit was repeated to both assess its impact and highlight any areas requiring further improvement.

Summary of BOA / BGS Blue Book recommendations:

All patients with hip fracture should be:

- admitted to an acute orthopaedic trauma ward within 4 hours of presentation
- should have surgery within 48 hours of admission once optimised, and during normal working hours
- assessed and cared for with a view to minimising their risk of developing a pressure ulcer
- managed on an orthopaedic ward with routine access to acute orthogeriatric medical support from the time of admission
- started on anti-resorptive therapy to prevent future osteoporotic fractures
- offered multidisciplinary assessment and intervention to prevent future falls

Aim

To assess the impact of a proforma pathway on the care of patients following fractured neck of femur at Maidstone General Hospital compared to the gold standard set out in the British Orthopaedic Association and British Geriatric Society Blue Book – The Care of Patients with a Fragility Fracture.

Objectives

- Initial audit of care prior to the introduction of the proforma
- Development of a multidisciplinary care pathway and proforma following BOA Standards for Trauma (BOAST)³ and National Hip Fracture Database (NHFD) guidelines
- Re-audit of care following implementation of the proforma
- Identification of areas where further development would improve outcomes

Standards

- BOA / BGS Blue Book - The Care of Patients With Fragility Fracture¹
- BOAST guidelines - Hip Fracture in the Older Person³
- Standards for data entry to the NHFD²

Methods

An initial audit of care was performed. The medical records of 62 consecutive patients admitted with a fractured neck of femur were reviewed retrospectively using the variables below, in order to assess the level of care as compared to the gold standard. Patients who were admitted with fractured NOF between 1st March and 31st May 2008 were selected for inclusion. Patients who had not sustained a fragility fracture (e.g. high energy trauma, young patients) were excluded.

The proforma was developed with multidisciplinary input, discussed at Clinical Governance, agreed at Departmental level and was then implemented in June 2008. The pathway was made available in hard copy and accessible via the Trust intranet. Data was collected for the NHFD and also for the re-audit of patient care. 48 patients were consecutively included in the re-audit from June 2008. Notes were reviewed retrospectively.

The variables tested are listed below. Data was collected from the patients' records, entered onto a data collection form (Appendix 2) and then analysed with Microsoft Excel. Direct comparison and statistical analysis (Chi squared test) were performed for the two groups of patients. Mortality data in both groups reflects all cause, in hospital, mortality in all patients admitted with NOF fracture (not limited to study group).

Variables

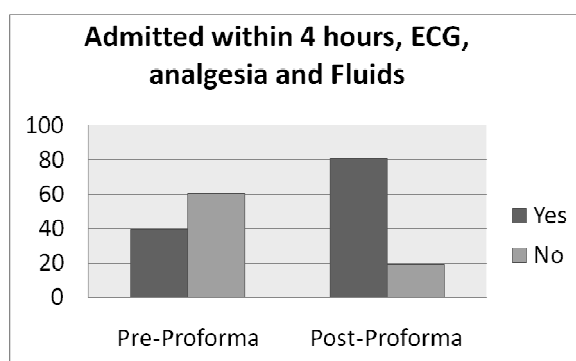
- Time to admission (>4 hours)
- Time to surgery (>48 hours)
- Resuscitation status documentation
- Medical delays (>48hours)
- Mortality rates
- Osteoporosis treatment and referral
- Falls assessment and clinic referral
- Pressure area assessment
- A&E investigation and management
- History, documentation and prescription by SHOs

Results

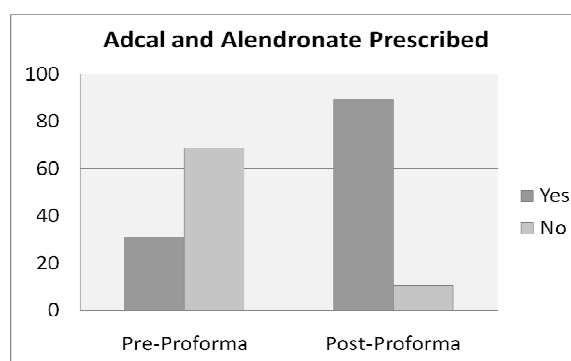
Comparison of the two audit groups shows dramatic and highly statistically significant differences in a number of areas of patient care, notably: mortality rates; appropriate A&E investigation and treatment; documentation of correct diagnosis and social history; mental test scoring; time to ward admission; time to surgery and osteoporosis treatment.

However, some areas showed little or no improvement: referral to falls clinic; resuscitation status documentation and pressure area assessment.

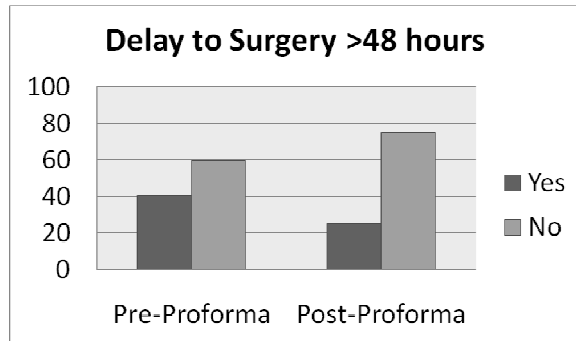
The bar graphs show the percentages of patients that either did or did not achieve any given standard, both pre- and post-proforma. The numbers of patients in each category are listed below the graphs along with respective p-values.



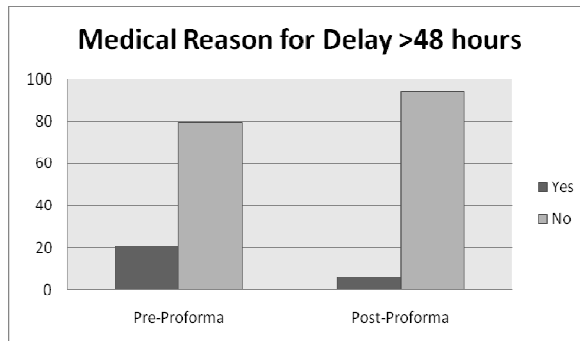
Pre 24y/38n, Post 38y/10n ($p<0.01$)



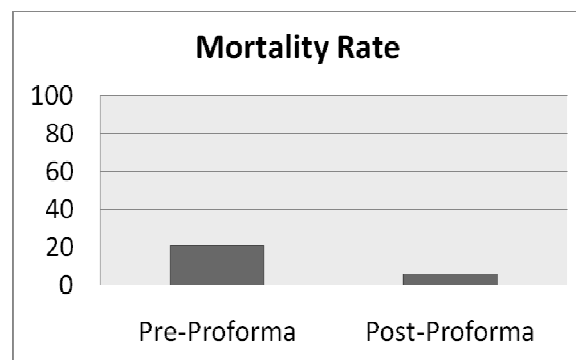
Pre 19y/43n, Post 43y/5n ($p<0.01$)



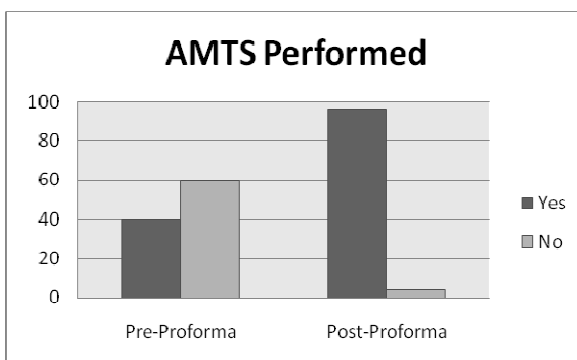
Pre 25y/37n, Post 12y/36n ($p<0.01$)



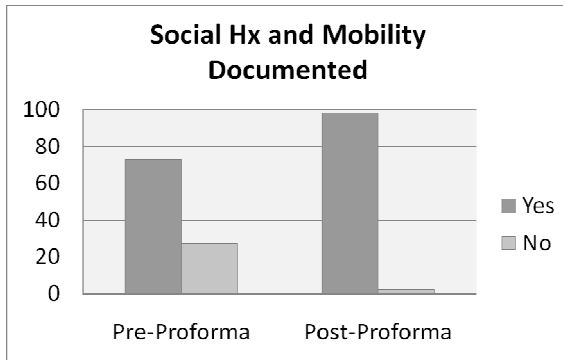
Pre 13y/49n, Post 3y/45n ($p<0.01$)



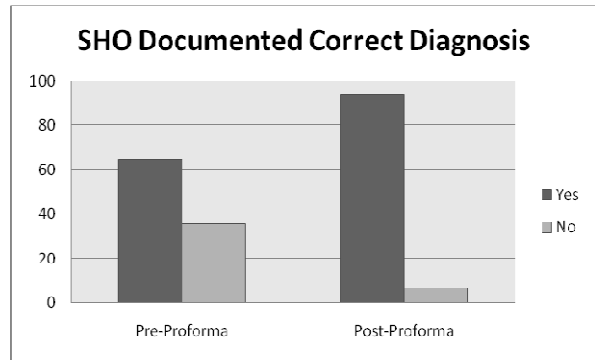
$p<0.01$



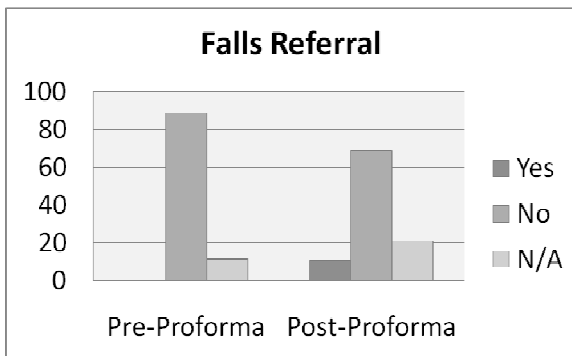
Pre 25y/37n, Post 46y/2n ($p<0.01$)



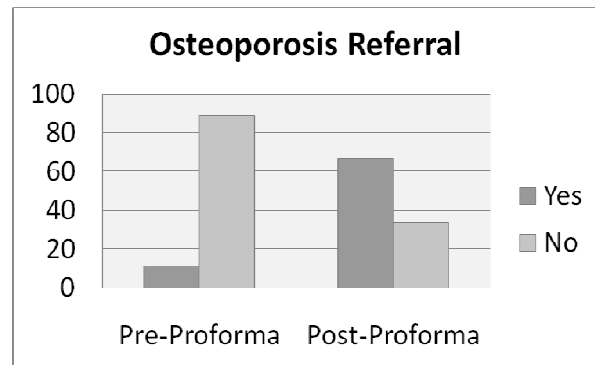
Pre 45y/17n, Post 47y/1n ($p<0.01$)



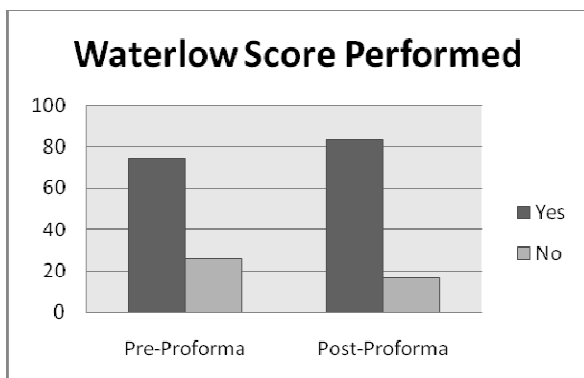
Pre 40y/12n, Post 45y/3n ($P<0.01$)



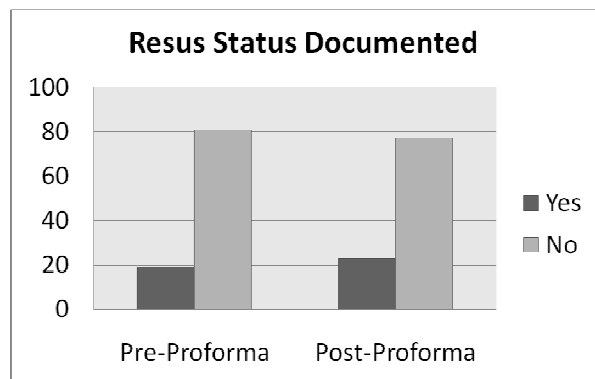
Pre 0y/55n/7na, Post 5y/33n/10na ($p<0.01$)



Pre 7y/55n, Post 32y/16n ($p<0.01$)



Pre 46y/6n, Post 40y/8n ($p0.02$)



Pre 12y/50n, Post 11y/31n ($p0.06$)

Discussion

The lack of a ring fenced, dedicated trauma ward leads to patients being admitted to outlying wards following fractured neck of femur. These wards are less likely to be as well equipped to deal with the unique requirements of these patients, which may explain the consistent problems with pressure area care and delay in discharge.

A strong recommendation for gold standard care is the provision of an orthogeriatric service with regular medical review both pre- and post-operatively. Currently no such dedicated service exists at Maidstone and this affects the treatment of acute medical problems, the provision of falls investigation and osteoporosis treatment. The falls clinic does not accept referrals for patients with dementia and therefore a large proportion of patients at high risk are not treated.

Following this audit, a business case is being put forward for the development of the orthogeriatric service and the provision of ring fenced beds on a dedicated orthopaedic trauma ward for fractured neck of femur patients. Work is also being undertaken to improve theatre efficiency and increase capacity in order to avoid delays to surgery.

The introduction of the pathway has clearly benefitted the management of this difficult problem. There have been several significant improvements and with ongoing development, managerial support and a multidisciplinary approach, these will hopefully improve further.

Recommendations

- Provision of a dedicated trauma ward with ring fenced beds for patients with fractured neck of femur in order to minimise the number of outlying patients, optimise the quality of care delivered by the Multidisciplinary Team and maximise the efficiency of the service.
- Ensure universal implementation of the fast track process and pathway by Accident & Emergency staff to allow admission to the ward within 4 hours of presentation.
- To further improve the utilisation of the trauma theatre as part of the Trust-wide Theatre Efficiency programme in order to reduce delays and cancellations.
- To provide Consultant led all-day trauma lists on selected days to enable any backlog of patients to be cleared.
- Acute medical input should be provided on admission to patients with co-morbidities.
- The introduction of a dedicated Orthogeriatric Service to help with management of acute medical problems, rehabilitation, osteoporosis treatment and Falls Clinic follow-up.
- Consultant Orthopaedic Surgeon and Consultant Orthogeriatrician involvement in the weekly Multidisciplinary Team meetings.
- Standardisation of the Falls Clinic referral system.
- Resuscitation Status should be documented on admission by doctors of appropriate seniority and experience. There should be subsequent regular and frequent review.
- Closer monitoring and documentation of pressure areas.
- Continual re-audit and input of data into the National Hip Fracture database.

Action Plan

- Pilot trial of ring-fencing of trauma beds for fractured neck of femur patients to be implemented. T&O and Bed Management. August 2009. Discussed as part of Rapid Improvement Project.
- Discussion with Accident & Emergency Consultants and Management to gain full support of streamlined fast-track pathway. L David. Current. Actioned and agreed.
- Screening and readmission of suitable 'semi-elective' patients onto elective lists where appropriate in order to maximise trauma theatre capacity. All T&O Doctors, T&O and Theatre Management, Planned Care Office. Ongoing. Discussed and agreed at Clinical Governance and Directorate Meetings.
- To increase trauma theatre capacity and to consider all day trauma lists. Starting on Mondays and increasing depending on demand. L David, T&O and Theatre Management. August 2009. Discussed and agreed at Clinical Governance and Directorate Meetings.
- Audit of medical referrals and reviews on trauma patients to quantify the demand for acute medical input. D Butt, L David. Ongoing. July 2009. Data collected.
- The appointment of a Consultant Orthogeriatrician has been discussed and agreed in principle. A joint business case is currently being developed by the Trauma & Orthopaedic Surgery and Medical Directorates. September 2009. Clinical Directors and Senior Management. Ongoing.
- Consultant Orthopaedic & Orthogeriatric involvement at MDT. L David. Current. To continue.
- Introduction and implementation of criteria and guidelines for Falls Clinic referral. Standard referral letter to be drafted to maximise efficiency and compliance. D Butt, L David. July 2009. Discussed and agreed at Clinical Governance.
- Discussion of Resuscitation Status documentation at Clinical Governance. Searching of available guidelines and implementation within Department. N Husain, G Slater. June 2009. Discussed at Clinical Governance.
- Audit of pressure area documentation and incidence of pressure sores, with comparison against NHFD results. D Butt, B Proctor & Tissue Viability Nurse. Six Months. Discussed with TVN and NHFD.
- Continual data input into NHFD and re-audit to regularly complete the audit cycle. Regular feedback from NHFD with comparison against national peers. Separate audit of specific problem areas identified. B Proctor, L David, G Slater. Six-monthly audit. Ongoing monthly discussion at Clinical Governance meetings.

References

1. British Orthopaedic Association – British Geriatric Society Blue Book. The Care of Patients with Fracture. Getty J, Crome P. September 2007.
2. National Hip Fracture Database. www.nhfd.co.uk
3. British Orthopaedic Association Standards for Trauma (BOAST) Guidelines. Hip Fracture in the Older Person. September 2008.
4. NHS Institute of Innovation & Improvement. Rapid Improvement Programme. Focus On: Fractured Neck of Femur. 2008-2009.