



Non-operative treatment of elderly patients with femoral neck fracture

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Surgery is the routine management for elderly individuals with femoral neck fracture, in order to reduce the morbidity and the mortality and to relieve pain. Sixteen elderly patients with displaced femoral neck fractures who were unfit for surgeries were treated conservatively. The mortality in this group was not higher than reported following surgical management. Close nursing care, physiotherapy and pain management helped in improving the status and function of these patients.

When non-operative treatment of femoral neck fracture is deemed necessary in elderly patients, an intensive medical input is necessary to alleviate pain and enable them to return their function near to pre-injury status.

Keywords : elderly ; femoral neck ; fracture ; non-operative ; outcome.

INTRODUCTION

Fractures of the neck of the femur are very common in the elderly population. They have a significant impact on the National Health Service and on society in general. Treatment of these fractures is generally operative, either with internal fixation or hemiarthroplasty. In certain circumstances these fractures are managed non-operatively. We reviewed the outcome of these patients, treated in our institution.

PATIENTS AND METHODS

The information technology department has registered 1,420 patients who were admitted in the orthopaedic section of Airedale General Hospital with a fracture of the neck of the femur from 1995 to 2002. Among these patients only 21 (1.47%) were managed without operation, whereas the majority had surgery in the form of hemiarthroplasty or cannulated screw fixation for intracapsular fracture of the neck of the femur, and dynamic hip screw fixation for extracapsular fracture of the neck of the femur. Five patients with impacted undisplaced fractures of the femoral neck treated non-operatively were excluded from the study. There were 16 female patients with a mean age of 80 years (range : 76 to 98). All these patients had a displaced femoral neck fracture, intracapsular in 14 and extracapsular in 2. Three of these patients were known to be demented, they all had cardiovascular disease, and 4 of them were non-insulin dependent diabetic. The reason for cancellation of the operation was unfitness to spinal or general anaesthesia in

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14 patients ; in addition to this, two patients refused surgery.

Once the decision was made, after an average period of 4 days of failed attempts to optimise the associated comorbidities, and following consultation with the patient and family, strong analgesics were administered and mobilisation was commenced for patients with intracapsular fracture, with the help of physiotherapy ; in one occasion an intra-articular hip catheter was inserted for pain relief. Patients with extracapsular fracture were kept on bed rest for 6 weeks. All these patients were provided with pressure sore beds. Once safe, they were either discharged home when support was available, or transferred to a nursing home. Average length of stay in the hospital was 2 weeks (range : 1 to 7).

RESULTS

The follow-up ranged from 9 months to 4 years, with a mean of 39 months. Functional assessment was performed using the SF-36 questionnaire. Radiological assessment was performed for extra-articular fractures ; these fractures healed in a mean period of 4 months (range : 3 to 6) ; as the intention was to treat the intracapsular fractures like Girdlestone operations, no radiological assessments were performed. These patients were followed up on 3-monthly basis in the outpatient clinic.

In this series, four patients died, two while in hospital, one after 9 months and one after 3 years. Functional assessment revealed that the majority of surviving patients were able to look after themselves with some difficulty. Only two patients were not happy with the outcome.

Nine patients from nursing home went back to the nursing home, two patients from a residential home were transferred to a nursing home and the remaining went to sheltered accommodation.

DISCUSSION

Non-operative treatment is acceptable for undisplaced femoral neck fracture. In a prospective study, 170 impacted femoral neck fractures were treated by early mobilisation and weight-bearing. The overall mortality at one year was 16%. In the 167 patients who were followed up until fracture healing or secondary instability, 143 fractures

(86%) united. Instability occurred only in patients over 70 years of age, and in younger patients with a short life expectancy. Stepwise logistic regression analysis indicated that poor general health and old age (over 70 years) were risk factors. None of the other variables, such as the Garden index, Pauwels' type, and time to full weight-bearing had any influence on the development of secondary instability. Delayed operation after secondary instability caused no increase in mortality, non-union or avascular necrosis. Functional treatment of all patients with impacted femoral neck fractures seems therefore to be justified (3).

There is a major difference in outcome on comparing undisplaced and displaced femoral neck fractures in elderly patients treated with internal fixation. The rate of fracture healing complications in patients with undisplaced fractures was low, and patients with healed fractures regained their pre-fracture quality of life level. The rate of fracture healing complications and reoperations in patients with displaced fractures was high, and even in patients with uneventfully healed fractures, there is a substantial decrease in the quality of life (5).

Occasionally, we encounter unfit patients in which surgical intervention and anaesthetics are deemed risky, forcing the clinicians to pursue non-operative treatment. This may be justified knowing that the outcome of surgery probably may be worse.

The moral concern however is the morbidity and mortality associated with non-operative treatment of femoral neck fracture.

The cumulative mortality was found to be 20% at 4 months after femoral neck fracture in elderly individuals treated by surgery, while the quality of life improved in the follow-up period of 4 months (6). The overall one-year survival rate following femoral neck fracture in the elderly was found to be 55.9% ; it was 59.1% for women and 52.3% for men (2). The walking recovery rate was 55.8%. The most important factors affecting life expectancy were preexisting poor medical, functional and cognitive scores. Preoperative medical conditions are useful indicators for determination of functional prognosis and survival (2).

In our small series, 2 out of 16 patients treated non-operatively died within 4 months of injury

(12.5%) and the overall mortality at 4 years was 25%. The mortality rate therefore is not any worse than reported in literature for patients whose fracture has been treated surgically (2,3,5,6). In regards to the quality of life, the functional assessment revealed that, in our series, the majority of the patients were able to look after themselves, although with some difficulty. Only two patients were not happy with the outcome. On the other hand, the quality of life reported in literature for elderly individuals with femoral neck fracture treated operatively was also worse, 4 months after injury, than the quality of life reported in a reference population (6).

The other moral concern is the increased pain elderly patients have when treated conservatively after femoral neck fracture. Patients with preserved mental function feel more pain than patients with poor mental function; also patients feel less pain when they were taking regular analgetics before fracture (4). Conservative treatment of elderly individuals with femoral neck fracture should include a good nursing care. The amount of analgesic drugs given to the patients in a survey (4) seemed inadequate for their levels of perceived pain; accordingly regular measurement by nurses of the degree of pain felt by patients is recommended, and closer medical review of the medication being prescribed is necessary to achieve adequate pain relief while avoiding side effects.

CONCLUSION

This study is too small to allow for any definite conclusion. Functionally these patients did well. No

patient died of her fracture, although it was a contributory factor in two cases. The outcome cannot be compared with the operative group, because the selection is not the same. A multiregional study is required to draw any definite conclusion. When patients with intracapsular femoral neck fracture are treated non-operatively, the hip joint in essence will function like a Girdlestone pseudoarthrosis, the outcome of the latter operation has been satisfactory when used as a salvage operation for failed implants in the hip in the elderly population (1).

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