tein 1 (rhBMP-7) for the treatment of persistent fracture non-unions.

Patients and methods: Between October 2001 and August 2004, 24 patients with 25 persistent non-unions were treated with rhBMP-7 in our institution. Successful completion of treatment was defined as a painless full weight bearing (clinical union) and presence of bridging callous of two cortices visible on two X-ray views (radiological union). The mean follow up was 11.4 months.

Results: The mean age of the 24 patients (18 males) was 39.1 years. The mean number of operations performed prior to rhBMP-7 application was 3.4. In 16 patients, rhBMP-7 was inserted in combination with autologous bone graft and in one patient the application was repeated. In 19/25 (76%) cases, both clinical and radiological union occurred within a mean time of 3.9 months and 5.4 months, respectively. One patient underwent a below knee amputation, secondary to recurrence of deep sepsis. Five cases are still under review. One patient had re-application of rhBMP-7 for a femoral non-union. A patient with a clavicular non-union after treatment was asymptomatic but the radiological union was incomplete. The remaining three cases were initially open fractures. Two patients postoperatively developed superficial wound infection and were treated successfully with oral antibiotics. No other complications or adverse effects were encountered.

Conclusion: RhBMP-7 was used as a bone stimulating agent with or without conventional bone grafting with a success rate of 76%. This study supports the view that the application of RhBMP-7 is safe and a power adjunct to be considered in the surgeon's armamentarium for difficult fracture non-unions.

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Are Orthopaedic Surgeons accurate in assessing healing rates of fractures?

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Background: In optimal conditions, injured bone can be reconstituted without a scar almost to its original shape.

No clinical tests can predict delayed fracture healing. Early knowledge about the individual prognosis of a fracture could help prevent severe complications and enable the physician to modify therapy. Plain radiograph remains the standard method to monitor fracture healing, but it reveals delayed healing only late in the course. Currently, research is underway into methods of predicting early problems with fracture healing. This audit aims to assess the accuracy of a group of surgeons at predicting healing rates of fractures and in particular identifying non-unions.

Method: Case studies were collected from the hospital database and the internet, the outcome of each case was known. Twenty-six cases were used in all, which included 12 cases that went on to delayed/non-union. Each case included X-rays of the initial fracture and a brief history. The cases were then randomised and presented to 10 surgeons (of varying grades) who were asked to predict the time to union for these fractures and identify those which could go on to delayed/non-union. The results were then compared to the actual outcome of each patient.

Results: There is moderate evidence that surgeons are better at predicting the healing time for normal healers than delayed unions. Though in both cases surgeons, on average underestimate the time to heal.

There is strong evidence that mean difference to time to heal is different between junior and higher specialist trainees. Junior surgeons also underestimate to a greater extent.

Overall only 24.2% of the predictions of delayed union made were correct, whereas 90% of the predictions of normal healing were correct.

Discussion: This study suggests that Orthopaedics Surgeons' prediction of healing times of fractures improves throughout training. However, collectively non-unions are poorly predicted from X-rays alone.

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Outcome following surgery for proximal femur fractures in patients with recent myocardial infarction

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The mortality following surgery in patients with a recent MI is high. Standard advice is to wait for a minimum of 6 months. In urgent situations, this may not be possible. From January 2003 to August 2004, 10 patients were admitted with fracture neck of femur and a recent MI proven by ECG changes or raised troponin. There were seven females. The mean age was 79.5 years (59—95 years). The premorbid mobility and co-morbidities were noted. Echocardiography was done in all patients preoperatively to assess the cardiac function. All patients were seen by physicians and anaesthetist pre-operatively. The mean

time from infarction to operation was 11.5 days (3—23 days). The patients underwent either Thompsons hemiarthroplasty or DHS. The anaesthetic was performed by a consultant. Most patients received spinal anaesthesia (7/9). The anaesthetic records could not be found for one patient. Six patients died within a month and one patient died within 6 month of operation. Despite thorough preoperative work-up and consultant anaesthesia, the mortality following surgery for proximal femur fractures in patients with recent myocardial infarction is 70% at 6 months. To our knowledge, there are no published mortality figures for this situation. This is much higher than the reported mortality following proximal femur fracture.

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Randomised trial of cemented versus uncemented hemiarthroplasty for displaced intracapsular fractures

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To compare uncemented Austin Moore Prosthesis and cemented Thompson in respect to complications and functional outcome.

Prospective randomised controlled trial of 200 displaced intracapsular hip fractures.

All operations performed or supervised by one orthopaedic surgeon and all by a standard anterolateral approach. Patients were followed up for one year in hip fracture clinic and by phone. Patients' pain and mobility assessed by a nurse blinded in the type of prosthesis.

Operative complications included nine femoral fractures in the Austin Moore group. One retained cement in the joint and one intra-operative cardiac arrest in the Thompson group.

Post operative complications were similar in both groups including pressure sores, haematomas and infections. Three patients in the cemented Thompson group required subsequent operations against five patients in the Austin Moore Group At follow-up assessment at one year, pain was significantly less for cemented Thompson compared to uncemented Austin Moore (p 0.02).

Reduction in mobility was also significantly less with the Thompson group (p 0.003).

Change in residential status was similar in both groups.

In summary cemented Thompson causes less pain and less deterioration in mobility compared to uncemented Austin Moore in intracapsular hip fractures.

The continued use of an uncemented Austin Moore cannot be recommended.

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A prospective audit of hip dislocation following Thompson's hemiarthroplasty in 931 patients with fractured neck of femur

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Dislocation following Thompson's hemiarthroplasty is an important complication causing significant morbidity and utilization of resources. The aim of this audit was to determine the rate of dislocation within our trauma unit and the factors implicated.

Data for 931 patients admitted between 1-3-2003 and 28-2-2005 to our trauma unit with a fractured neck of femur was prospectively collected. 391 had a Thompson's hemiarthroplasty.

Data collected included: fall details, co-morbidity, mobility and independence, use of fall drugs, operative details, surgical complications and outcome. Radiographs were reviewed.

Mean time to hemiarthroplasty was 4.69 days (1—9). Delays (>1 day) were frequently due to lack of theatre time. An anterolateral/lateral approach was used. Surgery was performed by a SpR in all but one case which was performed by a consultant. The first assistant was a consultant in 5, SHO in 4 and no assistant in 4 cases.

13 patients (3%) had a dislocation during the study period. 11 were female and 2 male. Mean age was 81 years (70—97). A mechanical fall at home was the most common cause of dislocation. 12 patients had co-morbidities and 6 used 'fall risk' drugs.

Most dislocations were treated by closed reduction and the mean hemiarthroplasty-dislocation interval was 1 month (1—65 days). 8 patients required multiple procedures and 3 developed deep infection. 7 patients who had dislocated died within the study period. 5 of the 7 patients died within 3 months of re-operation. Of these 5 patients, 4 had multiple procedures.

This audit found the dislocation rate in our unit to be inline with other reported studies. It highlights the co-morbidities which must be addressed alongside the hip and draws attention to lack of theatre time as a cause of operative delay. Despite Consultant involvement at surgery dislocations do occur and this audit demonstrates the significant morbidity which follows.

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