

*Department of Orthopaedic and Trauma Surgery,
Dublin, Ireland, UK*

MR imaging is an important modality in non-invasive evaluation of osseous and soft-tissue structures in the post-traumatic knee. However, it is sometimes impossible to determine with confidence if a focus of high signal intensity in the meniscus is confined to the substance of the meniscus or extends to the joint surface. This is a critical differentiation because the latter represents meniscal tears that can be treated arthroscopically, whereas the former represents degeneration or normal variants not amenable to arthroscopic intervention.

The aim of this study was to investigate occurrence of such borderline findings, specifically in relation to the posterior horn of the medial meniscus and to correlate with arthroscopic results.

Sixty-four patients with suspected post-traumatic internal derangements of the knee who underwent MR imaging prior to arthroscopy were evaluated retrospectively. There were 48 males and 16 females, mean age 28.2 years. Tears of the posterior horn of the medial meniscus were diagnosed unequivocally (Grade 3 signal) in 18 patients and equivocally (Grade 2/3 signal) in 10 patients. Arthroscopic correlation revealed 16 tears (89%) in the unequivocal group and one tear (10%) in the equivocal group.

Meniscal tear is unlikely when MR shows a focus of high signal intensity in the posterior horn of the medial meniscus that does not unequivocally extend to involve the joint surface. A trial of non-operative treatment is recommended in such cases. MR is a useful diagnostic tool, however, it should be used selectively, with history and clinical examination in evaluating internal derangements of the knee.

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Results of collagen covered autologous chondrocyte implantation (ACI-C) for symptomatic osteochondral defects in the knee

S.P. Krishnan, J.A. Skinner, W. Bartlett, R.W.J. Carrington, A.M. Flanagan, T.W.R. Briggs, G. Bentley

*Royal National Orthopaedic Hospital, Stanmore,
UK*

We evaluated the clinical results of autologous chondrocyte implantation using collagen type 1/III membrane (ACI-C) which was performed for the treatment of symptomatic osteochondral defects of the knee.

One hundred and ninety nine patients, who underwent ACI-C as part of a prospective trial, were assessed clinically by their modified Cincinnati scores up to 4 years from the time of surgery. Arthroscopic assessment and biopsy of the neo-cartilage was also performed whenever possible. The mean preoperative Cincinnati score was 41.7 and at 1, 2, 3 and 4 years follow-up were 62.0, 61.2, 58.0 and 61.2, respectively. The maximum improvement in clinical scores occurred within the first year following ACI (20 points). Overall, the proportion of patients with excellent and good results was 65.8% at 1 year and 60.4% at 4 years.

The clinical results showed that patients with knee symptoms for less than 2 years at the time of surgery showed better results ($p = 0.01$). Those with less than two previous surgical procedures on the knee had superior clinical results when compared to those with three or more procedures ($p = 0.03$). Trochlear and lateral femoral condylar defects yielded better clinical results ($p = 0.05$) than other sites in the knee.

Patients who had hyaline-like neo-cartilage on biopsy tended to show more durable clinical scores at 3 and 4 years but these differences were not statistically significant ($p = 0.44$).

Older patients ($p < 0.001$) and those with a low preoperative Cincinnati score ($p < 0.001$) had poorer results. The percentage of patients with excellent and good results was significantly low among those with previously failed ACIs and mosaicplaties ($p = 0.05$). Those with multiple site implantations showed lower mean Cincinnati scores (mean = 56.4) when compared to those with single site implantation (mean = 64.2, $p = 0.04$).

Patient gender ($p = 0.20$) and the size of defect ($p = 0.97$) did not significantly influence the outcome.

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Snowsports injuries among orthopaedic surgeons

I. Packham, R. Trehan, P. Magnussen

*Department of Trauma & Orthopaedics, London,
UK*

Introduction: Snowsports are becoming increasingly popular. As a consequence the burden of related injuries is growing.

Objective: To assess the incidence of snowsport related injuries among orthopaedic surgeons.

Method: Questionnaires concerning involvement in snowsports and any associated injuries were administered to all Consultant and Specialist Registrars within the South West Thames region. Results

were available for 69 Consultants (82%) and 40 Registrars (98%).

Results: Seventy three percent of orthopaedic surgeons participated in snowsports (70% Alpine skiing and 14% snowboarding). The average experience was 16 years for skiing and 5 years for snowboarding. 62 skiing and 7 boarding injuries were reported. Injuries were sustained on average every 19.6 years skiing and 10.6 years boarding. 26% of snowboarders had sustained a forearm or carpal fracture. Medial collateral knee (22%) and ulna collateral thumb (16%) ligaments were the most frequent skiing injuries. Injuries led to an average of 0.7 days off work per year boarding and 0.2 days per year skiing.

Conclusion: There is a high level of participation in snowsports among orthopaedic surgeons. A significant number of injuries are sustained, some of which are potentially serious and may affect the ability to work. Snowboarding would appear to be associated with a much higher risk of injury than alpine skiing. While snowsports would appear relatively safe, surgeons participating in such activities should be aware of the risks and take steps to minimise them.

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Antegrade humeral intramedullary nailing: Nervous about distal locking

L. Van Rensburg, A. Shah, C.R. Constant

Department of Trauma & Orthopaedics, Cambridge, UK

Antegrade humeral intramedullary nailing with distal locking risks injury to the radial nerve (lateral to medial locking (LM)) and risks injury to the cutaneous extension of the musculocutaneous nerve (anterior to posterior locking (AP)).

In previous studies, the exact course of the radial nerve has been measured in relation to the lateral epicondyle, and it has been suggested that external rotation of 20° when undertaking distal locking may decrease the incidence of nerve injury.

With this in mind, the nerves about the distal humerus were examined in 12 limbs (6 paired cadaver arms).

Using the manufacturers standard technique and instrumentation for the "Polarus plus nail", antegrade humeral nailing was performed on 12 limbs.

Initially distal locking was performed in the standard fashion AP and LM. This was then repeated with the nail externally rotated 20°.

The results showed that external rotation of 20°:

1. Decreases the risk of injury to the radial nerve (LM locking).

2. Increases the risk of injury to the musculocutaneous nerve (AP locking).

The increased risk of injury to the musculocutaneous is due to its shallow oblique course across the anterior aspect of the humerus.

Further observations include:

1. The more distal the LM locking the safer the radial nerve, irrespective of the rotation of the nail.
2. The margin of safety in AP locking increased the more distal the locking in the AP plane with the nail in neutral rotation. However, with external rotation this was not the case.
3. Internal rotation of 20°, put the radial nerve at increased risk, but made distal AP locking safer.

However on the "Polarus plus" nail proximal locking has an oblique option and with internal rotation of 20°, proximal oblique locking occurred through the bicipital groove.

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Early results of the T2 proximal humeral nail in treatment of 3 and 4 part fractures of the proximal humerus

H. Pullen, R. Bhatia, M. Pritchard, C. Hodinott

Introduction: Proximal humeral fractures are a common debilitating injury accounting for 4–5% of all fractures. Currently treatment of these fractures has included conservative, ORIF and joint replacement. The T2 proximal nail is a new fixation device, which requires minimal dissection and allows early rehabilitation.

Method: Twelve patients (4 male; 8 female), mean age 62 years (range 41–76) with Neer 3–4 part fractures underwent fixation with the T2 proximal humeral nail. All patients were operated on by one of two specialist shoulder surgeons and followed-up in clinic. The mean follow-up time was 12 weeks (range 7–23).

Results: All fractures had united radiologically at 8 weeks. At time of follow-up the average ASES score was 64 (range 27–100). All patient's incisions healed satisfactorily with no complications. Pain on the visual analogue score was <3 in 75% of patients with 33% reporting no pain at follow-up. One patient has had the nail removed after union due to impingement of the metal work.

Conclusion: Early results of use of the T2 proximal humeral nail are promising in this difficult fracture.