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**Rahusen FT, Brinkman JM, Eygendaal D.**

**Arthroscopic treatment of posterior impingement of the elbow in athletes: a medium-term follow-up in sixteen cases.**

**J Shoulder Elbow Surg. 2009 Mar-Apr;18(2):279-82.**

**PubMed PMID: 19218052.**

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**HYPOTHESIS:** Evaluate the effectiveness of arthroscopic treatment of posterior impingement in the athletes elbow.

**MATERIALS AND METHODS:** 16 elbows were included. An arthroscopic debridement of the posterior fossa of the elbow was performed. All Patients were evaluated preoperatively and after an average of 38 (30-53) months using range of motion, the Modified Andrews Elbow Scoring System (MAESS), VAS in rest and after provocation.

**RESULTS:** The average flexion increased from 138 degrees to 140 degrees. The extension deficit of 8 degrees preoperatively increased to a deficit of average 2 degrees ( $P < 0.05$ ). The MAESS increased from average preoperative to excellent postoperative ( $P < 0.05$ ). The average VAS in rest decreased from 3 to 0 and during sporting activities the VAS decreased from 7 to 2 ( $P < 0.05$ ).

**DISCUSSION AND CONCLUSION:** In this series, arthroscopic debridement of the posterior fossa in athletes with posterior impingement is a procedure that showed excellent mid term results and can therefore be recommended.

**LEVEL OF EVIDENCE:** Level 4; Retrospective case series, no control group.

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**Rahusen FT, Brinkman JM, Eygendaal D.**

**Results of arthroscopic debridement for osteochondritis dissecans of the elbow.**

**Br J Sports Med. 2006 Dec;40(12):966-9.**

**Epub 2006 Sep 15. PubMed PMID: 16980533; PubMed Central PMCID: PMC2577458.**

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**OBJECTIVE:** To determine the clinical outcome of arthroscopic debridement for osteochondritis dissecans of the elbow.

**METHODS:** A prospective cohort study was started in 2000; between 2000 and 2005, 15 patients (six male, nine female, mean age 28 years (range 16-49)) were treated for osteochondritis dissecans of the elbow with arthroscopic debridement. The lesion was graded during surgery using the classification of Baumgarten. The dominant side was operated on in seven of 15 patients, and all patients were involved in a sport in which the elbow is used extensively. Elbow function was assessed before and after surgery using the modified Andrews elbow scoring system (MAESS); pain was scored on a visual analogue scale (0, no pain; 10, severe pain). Evaluation was performed an average of 45 (range 18-59) months after surgery. Statistical analysis (Student's t test) was carried out using SPSS statistical software.  $p < 0.005$  was considered significant.

**RESULTS:** There were no complications. The range of motion did not improve significantly. The mean MAESS score improved from 65.5 (poor) before surgery to 90.8 (excellent) after ( $p < 0.001$ ). The mean level of pain at rest decreased from 3 to 1, and the level of pain after provocation decreased from 7 to 2 ( $p < 0.001$ ). All patients were able to return to work 3 months after surgery, and 80% were able to resume their pre-injury level of sport activity.

**CONCLUSION:** The clinical outcome after arthroscopic debridement for osteochondritis dissecans of the elbow shows good results, with pain relief during activities of daily living and sport. The function of the elbow, as reflected by the MAESS score, improved from poor to excellent. All patients in this series will be reviewed after 5 years to determine long-term results.

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**Brinkman JM, Rahusen FT, de Vos MJ, Eygendaal D.**  
**Treatment of sequelae of radial head fractures with a bipolar radial head prosthesis: good outcome after 1-4 years follow-up in 11 patients.**  
**Acta Orthop. 2005 Dec;76(6):867-72. PubMed PMID: 16470444.**

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**BACKGROUND:** In the presence of additional disruption of the distal radioulnar ligaments, the interosseous membrane, or the lateral- and/or medial collateral ligament, radial head fractures treated by resection will result in valgus elbow instability, proximal radial migration and/or posterolateral rotatory instability. Radial head replacement has been used to treat or prevent this. We report our experience with the Judet CRF II radial head prosthesis.

**PATIENTS AND METHODS:** We treated 11 patients with a bipolar radial head prosthesis because of elbow instability after previous treatment for Mason-Johnston type III or IV radial head fractures. The outcome was assessed clinically using two standardized elbow function assessment scales, and radiographically after a mean follow-up of 2 years.

**RESULTS:** Clinical outcome was either good or excellent in all patients; all elbows were stable. Radiographically, there were no signs of loosening, fracture or heterotopic ossification. 2 patients required reoperation for subluxation of the prosthesis; both were treated by reducing the size of the modular head of the prosthesis. There was erosion of the capitellum in 1 patient.

**INTERPRETATION:** Bipolar radial head replacement can be used successfully for treatment of the sequelae of radial head fractures. The long-term outcome is, however, unknown.

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**Rahusen FT, Weinhold PS, Almekinders LC.**  
**Nonsteroidal anti-inflammatory drugs and acetaminophen in the treatment of an acute muscle injury.**  
**Am J Sports Med. 2004 Dec;32(8):1856-9. PubMed PMID: 15572312.**

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**BACKGROUND:** Nonsteroidal anti-inflammatory drugs are frequently used to treat muscle injuries in athletes. It is not known whether the anti-inflammatory effects of these drugs are important or whether their effectiveness is a result of their central analgesic effect.

**HYPOTHESIS:** The effects of nonsteroidal anti-inflammatory drugs are no different than the effects of an analgesic (acetaminophen) without anti-inflammatory action in an experimental, acute muscle contusion model.

**STUDY DESIGN:** Controlled animal study.

**METHODS:** A standardized, unilateral, nonpenetrating injury was created to the tibialis anterior muscle of 96 adult male mice. Four treatment groups were used: group 1, placebo treatment; group 2, treatment with rofecoxib, a nonsteroidal anti-inflammatory drug with cyclooxygenase-2 selectivity, and treatment after the injury; group 3, rofecoxib treatment starting 24 hours before the injury; and group 4, acetaminophen treatment after

the injury. The muscle and the contralateral normal muscle were evaluated at 2, 5, and 7 days after injury by grading of gait, wet weight as a measure of edema, and histologic evaluation.

**RESULTS:** Group 1 had significantly more gait disturbances at day 2 than all other groups ( $P < .05$ ). No differences were found at days 5 and 7. Wet weights showed an increase at day 2 in group 1 ( $P < .01$ ). Again, no differences were found at days 5 and 7. Histology revealed similar inflammatory changes at day 2 in all groups, with regeneration of muscle fibers at days 5 and 7.

**CONCLUSIONS:** The results indicate that rofecoxib as a nonsteroidal anti-inflammatory drug and acetaminophen as a non-nonsteroidal anti-inflammatory drug analgesic have similar effects. The lack of differences in wet weights and histology suggests that the anti-inflammatory effects of rofecoxib are not an important feature of its action.

**CLINICAL RELEVANCE:** The routine use of nonsteroidal anti-inflammatory drugs in muscle injuries may need to be critically evaluated because low-cost and low-risk analgesics may be just as effective.

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**Almekinders LC, Pandarinath R, Rahusen FT.**

**Knee stability following anterior cruciate ligament rupture and surgery. The contribution of irreducible tibial subluxation.**

**J Bone Joint Surg Am. 2004 May;86-A(5):983-7. PubMed PMID: 15118041.**

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**BACKGROUND:** Knee stability after anterior cruciate ligament reconstruction is generally determined by measuring total anteroposterior tibial motion. In spite of a decrease in excessive anteroposterior tibial motion after anterior cruciate ligament reconstruction, problems can still develop. In the present study, we sought to define the tibiofemoral relationship more accurately with use of stress radiographs of human knees after anterior cruciate ligament rupture and after anterior cruciate ligament reconstruction.

**METHODS:** A previously described radiographic technique was used to evaluate the position of the tibia relative to the femur with the application of an anteriorly directed tibial force and subsequently with the application of a posteriorly directed tibial force. Tibial position and total tibial translation were calculated from these radiographs. In addition, KT-1000 measurements were obtained. Three groups of patients were studied: Group 1 included twenty-eight patients with an untreated anterior cruciate ligament rupture, Group 2 included nineteen patients who had undergone a clinically successful anterior cruciate ligament reconstruction, and Group 3 included twenty-five control subjects with normal knees.

**RESULTS:** KT-1000 testing showed that the average side-to-side differences in Group 1 (5.8 mm) and Group 2 (2.7 mm) were significantly different from that in Group 3 (0.8 mm) ( $p < 0.01$  and  $p < 0.05$ , respectively). Stress radiographs showed that the average total tibial translation in Group 1 (9.8 mm) was significantly different from those in Group 2 (5.6 mm) and Group 3 (4.3 mm) ( $p < 0.05$  and  $p < 0.001$ , respectively). Within Group 1, knees with radiographic signs of osteoarthritis were more stable, with an average total tibial excursion of 6.8 mm. The improved stability of the reconstructed knees in Group 2 and the osteoarthritic knees in Group 1 was not entirely the result of decreased anterior tibial translation; it was, in part, due to an irreducible anterior subluxation of the tibia. A posteriorly directed stress in these knees did not reduce the tibia to the anatomic position relative to the femur; the osteoarthritic knees in Group 1 were 9.9 mm short of full reduction and the knees in Group 2 were 3.1 mm short of full reduction ( $p < 0.01$ ).

**CONCLUSIONS:** Irreducible tibial subluxation can be present in the knee following surgical reconstruction of the anterior cruciate ligament. Osteoarthritic changes following an untreated anterior cruciate ligament rupture are also associated with uncorrectable tibial subluxation along with a decrease in instability. The irreducible tibial subluxation could explain why osteoarthritic changes still may develop in stable, reconstructed knees in spite of the improved stability. Currently used arthrometric measurements, such as KT-1000 scores, do not measure this phenomenon.

**Roumen RM, Rahusen FT, Wijnen MH, Croiset van Uchelen FA.**  
**"Dog ear" formation after double-stapled low anterior resection as a risk factor for anastomotic disruption.**  
**Dis Colon Rectum. 2000 Apr;43(4):522-5. PubMed PMID: 10789750.**

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**PURPOSE:** The aim of this study was to investigate the possible deleterious effect of the lateral intersecting margins (so-called dog ears) on anastomotic disruption after experimentally performed double-stapled anastomoses.

**METHODS:** Two groups of double-stapled side-to-end anastomoses were performed using pig small intestines. Group A consisted of 35 circular anastomoses and Group B of 32 double-stapled anastomoses with a bilateral dog ear. In both groups bursting pressures were tested using a water-filled, pressure-controlled automatic pumping system (Hamou Endomat), and special attention was paid to the location(s) in the anastomoses where the disruption(s) occurred.

**RESULTS:** In Group A bursting pressures were significantly higher than in Group B (median pressure, 90 vs. 60 mmHg;  $P < 0.001$ , Mann-Whitney U test). Remarkably, in Group B in 13 cases (42 percent) the first disruption occurred at the corner of a dog ear.

**CONCLUSIONS:** We conclude that the lateral intersections of double-stapled anastomoses are a structural weak spot and that the currently most often applied double-stapled anastomosis is a less effective type of anastomosis than a complete circular one. Resolving this technical problem might help to reduce the number of anastomotic disruptions after low anterior resections.