

# Proceedings of the Finnish Orthopaedic Society

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## Synovectomy of the wrist

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Synovectomy of the wrist was performed in 77 patients (97 wrists) during 1968-1981. The mean age of the patients was 44.9 (18-77) years. Clinical and radiographic follow-up evaluations (90 wrists) or follow-up evaluation by questionnaire (seven wrists) were made by the authors in 1982. The mean length of follow-up was 8.5 years.

Eight wrists were arthrodesed during the follow-up. Among the remaining wrists (89 cases), pain was absent or nearly absent in 39 per cent, less than before the operation in 49 per cent and unchanged or worse in 12 per cent. The respective percentages for the presence of swelling were 47, 36 and 17 per cent. The range of dorsiflexion was between 0° and 70°, (average 27.9°). The range of volar flexion was between 0° and 75°, (mean 28.2°). The average ulnar and radial side motions were 12.9° and 5.4° respectively.

The results (patient's opinion) were good in 53, fair in 32 and poor in 15 per cent. The overall objective results were good in 60, fair in 19 and poor in 21 per cent. In conclusion, we recommend surgical synovectomy of the wrist for alleviation of pain and swelling in rheumatoid arthritis, despite the possible deterioration shown by radiographs.

## Secondary radial nerve paralysis associated with fractures of the shaft of the humerus

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A series of 17 patients with secondary complete radial nerve paralysis, emerging after closed reduction of a fracture of the humeral shaft, was analysed. The mean age of the patients was 34 (6-79) years. The fracture was in the middle third in six and in the distal third in 11 patients.

Exploration of the radial nerve and internal fixation of the fracture within 3 weeks of the accident were performed in 10 patients. Conservative treatment and later exploration, if needed, was the therapeutic approach in the remaining seven patients.

Complete recovery of the radial nerve function occurred in 80 per cent of the patients, with no difference between patients with conservative treatment and patients with early exploration. At exploration the continuity of the radial nerve was preserved in all operated patients. The only common denominator in the patients with no recovery of the function of the radial nerve was abundant callus. Consequently a secondary radial nerve paralysis complicating a humeral shaft fracture cannot be regarded as an absolute indication for early surgery.

## Fresh rupture of the tendon of the quadriceps femoris muscle

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During the 10-year period 1972–1981, 18 patients were admitted to the department with a fresh rupture of the tendon of the quadriceps femoris muscle. All the injuries were closed. Of these, 12 patients were seen at personal follow-up examination on average 5.3 (2–10) years after the original injury.

The mean age of the patients at the time of the accident was 57 (41–79) years. No other predisposing factors than obesity in six patients, were present. The method of repair was tendorrhaphy alone in six, additional Souderi plasty in three and wire fixation according to McLaughlin in another three patients. The rupture was so distal in six patients that channels had to be drilled in the patella for the sutures.

At follow-up the over-all result was classified as good in seven, fair in four and poor in one patient. Calcification of the tissues close to the previous rupture was seen in four patients. In only three patients was the quadriceps muscle significantly weaker than on the uninjured side, while in four cases it was actually stronger in dynamometry. In conclusion, a fresh rupture of the quadriceps tendon can be successfully treated by immediate surgery and a careful postoperative muscle training programme.

## Surgical outcome of ununited clavicular fracture

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Twenty-five ununited, primarily conservatively treated clavicular fractures were treated operatively. The follow-up period averaged 3.5 years, the minimum being at least 1 year. In all cases the pri-

mary displacement was at least equal to the clavicular width. This appeared to have an influence on the occurrence of non-union.

The fracture eventually united after surgery in 20 cases but in two cases remained ununited. In another two patients partial resection of the medial fragment was performed. In one case the operation had to be interrupted due to damage to the subclavian vein. The results after rigid plating and cancellous bone grafting were considered satisfactory, the overall union rate being 91 per cent.

The subjective outcome was classified as good in 17 patients, fair in six and poor in two cases. Four patients had shortening of the clavicle and abduction weakness of the arm. Shortening of the clavicle should be avoided in surgery of clavicular non-union.

## Severe thoracolumbar spinal injuries reduced and fixed with Harrington instrumentation

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In 85 patients an unstable vertebral fracture or fracture-dislocation of the thoracic or lumbar spine was reduced and fixed by Harrington distraction rods during the years 1977–1982. Neural involvement was present on admission in 67 (79 percent) patients. In most cases the operation could be performed within 3 days of the accident. Simultaneous posterolateral fusion of three segments was done during the last 4 years as a routine procedure. After operation the patients were kept in bed for 6 weeks.

The minimum follow-up time in this study was 1 year. An improvement of the neurological status, classified according to Frankel, was seen in 39 patients, which, of course, was not necessarily always due to the surgical intervention. In only seven patients was there a residual deformity of more than 15 degrees of kyphosis. Postoperative dislodgement of the hooks or rods occurred in 35 per cent during the first years of the period under review when no fusion was done, but in only 8 per cent with a simultaneous posterolateral fusion.

# Proceedings of the Finnish Orthopaedic Society

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## Immediate radial nerve paralysis associated with fractures of the shaft of the humerus

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A series of 61 patients with immediate complete radial nerve paralysis complicating a fracture of the humeral shaft was analysed. The mean age of the patients was 36 (13–79) years. There were 11 open fractures. In two patients the fracture was in the proximal third, in 31 in the middle third and in 28 patients in the distal third of the diaphysis.

Early (within 3 weeks of the accident) exploration of the radial nerve and internal fixation of the fracture was done in 27 patients. Later (average 17 weeks) exploration was performed in 12 patients. The treatment was conservative for the remaining 22 patients. The mean follow-up time was 3 years.

Complete recovery of the nerve function was seen in 46 patients (75 per cent). The time required for recovery was shortest (mean 10 weeks) with early exploration. Conservative treatment, however, was estimated to have been probably sufficient in 70 per cent of all the patients.

In conclusion, a 3-month wait before exploration is advisable, except for oblique and spiral fractures. These often have a butterfly fragment in the distal third increasing the risk for entrapment or laceration of the radial nerve.

## The effect of polysulphated glycosaminoglycan on arthrosis of the knee in the rabbit produced by immobilization

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The possible preventive effect of polysulphated glycosaminoglycan on experimental arthrosis was investigated. Progressive arthrosis was caused by immobilizing the right knee of 39 adult rabbits for 5 weeks followed by an 8-week remobilization period. During the 5-week immobilization period and the first week of remobilization, 11 rabbits were given 4 mg polysulphated glycosaminoglycan (Arteparon®) intra-articularly twice a week. The remaining 28 rabbits served as immobilized but untreated controls.

The studied parameters were: joint thickening, joint stiffening and radiographically detectable arthrosis. The assessment was made immediately after the immobilization period and at 9 and 13 weeks. Polysulphated glycosaminoglycan seemed to have a significant protective effect on all the studied parameters. A full range of movement returned in 73 per cent of the treated knees but in only 39 per cent in the controls.

## Rupture of the patellar tendon

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Rupture of the patellar tendon is rare. During 10 years, 1971–80, five patients with a fresh subcutane-

ous total rupture of the patellar tendon were seen at the department. The mean age of the patients was 42 (19–73) years. There were two patients with a predisposing factor: one, a top-level high-jumper, had received a glucocorticoid injection at the tendon just a few weeks before, and another patient was suffering from LED.

The diagnosis was made immediately in all cases and the surgical repair was performed as an emergency procedure. Non-absorbable suture material in-

serted through drill channels was used in one patient reinforced with additional steel wire.

At follow-up examination at least 3 years after the injury, the functional result was regarded as good in three and satisfactory in two patients. The high-jumper's best result after the injury was 219 cm even though a veritable megapatella had developed by osseous overgrowth of the distal pole of the patella. We have found no similar case in the literature.

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