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Early results of the Ceraver screw cup in total hip replacements

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Early results obtained with the self-tapping hemispheric Ceraver screw cup with a cemented femoral component were submitted to a retrospective study. The material comprised 80 hips in 70 patients with a mean age of 56 years and a mean follow-up of 21 months. The Ceraver cup was implanted in combination with a Landos or Protek femoral component via a posterolateral or lateral approach.

Some 80 percent of the patients expressed satisfaction with the result. After the operation the Harris hip score rose from 48 to 80. At follow-up, 41 percent of the patients still complained of distinct pain; the improvement in the Harris hip score must therefore be attributed in a proportion of the patients to improved function of the treated hip rather than to alleviation of pain. A striking finding was that 5 patients were more satisfied with the result of a previously implanted cemented prosthesis in the contralateral hip. All the patients with rheumatoid arthritis had good to very good subjective results. A study of the radiographs revealed a direct correlation between the degree of preoperative sclerosis in the acetabulum and the moderate to poor results at follow-up. No parameters could be established for a conclusion regarding the quality of fixation of the screw cups.

Our conclusion is that the Ceraver screw cup does not yield acceptable results regardless of indications. Further differentiation of indications (rheumatic patients, bone quality) seems required.

Experiences with the Mecron screw cup

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A prospective study of the Mecron screw cup as an uncemented acetabular component in total hip replacement was started in June 1984. The Mecron is a spheric, self-tapping screw cup made of titanium. Indications for implantation in this prospective study were age under 70 years, protrusion of the acetabulum, and revision operations. The Mecron screw cup was used in a hybrid system in combination with a Stanmore femoral component. The Harris hip score was used at postoperative check-ups after 6 weeks, 3 months, 6 months, and annually. Since June 1984, 325 screw cups have been implanted in 297 patients. Complications were a lesion of the sciatic nerve (1 case), a deep infection necessitating removal of the prosthesis (1 case), and a dislocation (11 cases). One patient required revision in view of loosening of the prosthesis. The group of 73 patients with a follow-up of over 3 years had a mean Harris hip score of 93.4. The mean score after 3 years in patients submitted to a revision was 91.7. The bone scan became negative between the 6th and the 12th month after operation.

Abrasion of polyethylene cups in total hip replacement: metal versus ceramic hips

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Subsequent abrasion of the polyethylene is regarded by several authors as one of the causes of aseptic loosening of hip prostheses. Radiographs of 40 patients that had received a metal hip between 1978 and 1980 were compared with those of 40 patients that had received a ceramic hip from the same surgeon during the same period. The two groups were well matched as regards age, preoperative diagnosis, and sex ratio.

Polyethylene abrasion was measured radiographically by the method described by Scheier and Sandel and as modified by Buchhorn. For all the prostheses, it was also established whether in the course of time there had been a clinically demonstrated loosening or revision, or whether there had been radiographic indications of loosening.

Results: After an average follow-up of 10 years, there was a significant difference in the decrease of polyethylene thickness. In the ceramic group the abrasion averaged 0.26 mm versus 0.96 mm in the metal group. However, the two groups did not differ in number of clinically demonstrated or radiographically suspected loosenings.

Conclusion: Ceramic hips show significantly less polyethylene abrasion than metal hips; whether or not this ensures fewer aseptic loosenings in the long run will have to be established in larger series of cases with a longer follow-up.

Is the radial tunnel syndrome really a compression neuropathy?

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The radial tunnel syndrome is a pain syndrome of the proximal forearm ascribed to compression of the radial nerve at the site of entry of the posterior interosseous nerve into the supinator muscle. Nerve compression usually involves delayed conduction in the nerve. However, conduction tests did not reveal any conduction delay in the posterior interosseous nerve at the level of the radial tunnel. Werner et al. (1980) contend that conduction delay is demonstrable for some time after forceful supination.

We examined 16 patients who fully met the clinical criteria for a radial tunnel syndrome. Conduction tests were performed using surface electrodes for stimulation and recording. The muscle potential was recorded before, during, and after 1 minute of supination at 50 percent of maximum force. Normal values were obtained in 36 asymptomatic test subjects. Only 1 of the 16 patients was found to have a significant delay in conduction. In the remaining 15 patients with clinically suspected compression of the radial nerve, compression was not confirmed.

Our findings justify that there is doubt about the presence of a compression neuropathy in these patients.

The value of NMR in diagnosing osteochondritis dissecans

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The value of NMR in diagnosing osteochondritis dissecans was investigated in a prospective study. Twenty-seven consecutive patients (mean age 19 years) with osteochondritis dissecans (of the knee in 17 and of the ankle in 10 cases) were examined clinically, radiographically and by NMR prior to arthroscopy. NMR was initially performed with a 0.15 tesla 2035 superconductive magnetic resonance imager; from May 1988 on, a 1.0 tesla imager was used. The sequences used were the following: spin-echo sequences (SE 500/20), short-time inversion recovery images (STIR 1600/100), and phase-contrast images (FEDIF 500/10). In knees, as well as in ankles, the radiographic findings did not correlate with intraoperative findings. NMR assessment of the cartilage condition yielded 8 positive, 17 negative, and 2 false-positive results. Apart from the good correlation between NMR and arthroscopy, we found that the extent of the osteochondritis dissecans focus was perfectly reflected by the STIR image. Moreover, NMR was found to reveal the pathologic changes at an earlier time than radiographic examination. In view of these advantages, our conclusion is that NMR is indispensable in the diagnosis of osteochondritis dissecans.

Arthroscopic repair of Bankart's lesions

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Patients and methods: In a prospective study, all the patients eligible for arthroscopic repair of a Bankart lesion are submitted to CT arthrography. Demonstration of a Bankart lesion is followed by arthroscopic repair. The arthroscope is introduced via a posterior approach; instrumentation is effected via an anterior working cannula situated between the subscapular and the biceps tendon. The anterior edge of the glenoid fossa is freshened, whereupon the capsule is sutured onto this edge transglenoidally. Postoperative management: a Velpeau bandage for 4 weeks and abstention from sports during a 3–6-month period.

Results: In all 8 patients the radiologically diagnosed Bankart lesion was confirmed and sutured in the manner described. One patient developed transient neurapraxia of the brachial plexus after the operation. Seven patients were freed from symptoms. Redislocation occurred after an adequate trauma in 1 patient.

Conclusion: Although the procedure is technically dif-

ficult, it would certainly seem useful in the treatment of recurrent shoulder dislocations. However, the follow-up is too short to warrant definite conclusions.

Leg-lengthening procedures: results and complications

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A retrospective study was conducted of 46 leg-lengthening procedures performed on 28 patients during the period 1980–88. Data were obtained from the medical and radiologic records.

Indications for 24 femur-lengthening operations (17 diaphyseal and 7 metaphyseal) and 22 tibia-lengthening operations (6 diaphyseal, 9 metaphyseal, and 7 by means of distraction epiphysiolysis) included achondroplasia (12 cases) and leg-length differences due to congenital anomalies, poliomyelitis, postarthritic conditions, and vascular disorders (34 cases).

The lengthening attained in achondroplasia averaged 17.5 cm; in the other group, complete correction was achieved in 44 percent, while a partial correction (mean correction 51 percent) was achieved in 56 percent. Problems encountered were pin infection (16), neurapraxia of the peroneal nerve (7), diminished muscular strength (4), and transient restriction of movement in the hip, knee, and ankle (36). Complications were osteomyelitis (1), permanent dysfunction of the peroneal nerve (1), dislocation (subluxation) of the hip and knee (4), and osseous complications, such as delayed union, fracture, axis deviations, and loss of length (total number: 43). Additional surgery was required in 88 instances (in 52 to treat a complication).

Our conclusion is that leg-lengthening procedures are not simple. Although the final results are usually satisfactory, there is a considerable postoperative morbidity. It seems advisable to perform leg-lengthening procedures only at specialized centers.

Rupture of the greater pectoral muscle

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Rupture of the greater pectoral muscle is a rare condition not widely known in orthopedic practice. In the world of professional body builders, this rupture is less exceptional (it is known as "pec tear"). In the treatment of athletes with this injury, the cosmetic result is of importance, along with restoration of function and strength.

Pathogenic mechanism, diagnosis, and treatment are discussed and illustrated with reference to a case of rupture of the greater pectoral muscle in a professional body builder.

Treatment of athletes with this injury should be surgical. For less active, older patients a conservative strategy may be taken into consideration.

A low molecular weight heparinoid (Org 10172) in the prevention of deep vein thrombosis (DVT) following total hip replacement

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Study objective: To assess the safety and efficacy of a low molecular weight heparinoid (Org 10171) in patients undergoing elective total hip replacement.

Design: Randomized placebo-controlled double-blind trial.

Setting: Three orthopedic departments in teaching hospitals.

Patients: Of 218 consecutive patients, 196 completed the study according to the protocol and were analyzed. Org 10172 was administered to 97 patients, whereas 99 received a placebo. Dropouts were evenly distributed in the two groups.

Interventions: A twice daily subcutaneous injection of 750 anti-Xa units of Org 10172 or saline was started before operation and continued for 10 days. Bilateral phlebography was performed in all the cases on the 8th and the 10th day after operation.

Measurements and main results: A highly significant difference ($P \leq 0.001$) in overall occurrence of DVT was observed between the nontreated and the treated group (57 vs. 15 percent); 95 percent CI: 46–67 percent and 9–24 percent, respectively; risk reduction 74 percent. This reduction was observed for both proximal DVT (25–8 percent; $P \leq 0.005$) and distal DVT (31–7 percent; ($P \leq 0.001$). One patient in the placebo group developed clinical symptoms of pulmonary embolism, but the perfusion scan was normal. No major hemorrhage occurred. Drain loss and transfusion requirements in the two groups were comparable. Six patients in the Org 10172 group developed minor wound hematomas that did not necessitate reoperation or prolonged hospitalization.

Conclusion: A twice daily subcutaneous injection of 750 anti-Xa units of Org 10172 starting before operation is an effective and safe way of preventing DVT following total hip replacement.