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Fractures of the distal femoral diaphysis treated with Rush pins

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Over a 7-year period 39 patients with fractures of the distal femoral diaphysis were treated with intramedullary nailing using two Rush pins inserted through the femoral condyles. Two fractures were open and seven were comminuted. In 24 cases a closed nailing technique was used. At follow-up, one patient had more than 1½ cm shortening, and two patients had more than 10° of malalignment. No patients had more than 15° of malalignment. There were two deep infections, one with pseudarthrosis; both were healed after 2 years. Nine patients showed limited flexion of the knee. In five of these the pins had been improperly inserted. This method of osteosynthesis may give good results with minimal surgical trauma, but the technique is difficult and its limitations must be fully appreciated.

Fractures of the femoral shaft treated operatively

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A retrospective investigation of the results of operative treatment for fractures of the femoral shaft was undertaken, paying special attention to the patients operated with the Rush technique. The material comprised 108 fractures, 99 of which were operated.

Seventy-six were operated with Rush pins. The operation mostly took place 5–12 days after the trauma. Eighty-four per cent healed in less than 6 months, eight patients took more than 9 months to heal roentgenologically, but all fractures except one healed. The infection rate was 4 per cent.

Technical problems were encountered in 20 per cent of the Rush pin procedures. There was a relatively high number of patients with impaired motion of the knee and shortening of the leg.

Lamellar osteotomy in nonunion of long bones

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Forty-one consecutive patients with non-union of diaphyseal fractures of long bones were treated by lamellar osteotomy using the method of Jarry & Unthoff. Twenty-seven were tibial fractures, eight were fractures of the femur and six of other bones. The time elapsing from fracture to osteotomy ranged from 4 to 41 months. Union occurred in 34 cases (83 per cent) with an average healing time of 4 months (range 2.5–11 months). Six of the remaining seven non-united fractures were reoperated by the same technique and healed within 7.2 months on average. Minor complications were observed in three cases.

Pseudarthrosis of the tibia treated with cortical sliding graft

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From 1969 to 1980, 20 patients with pseudarthroses of the tibia were treated with a cortical sliding graft

and cancellous bone grafting. Twelve of the pseudarthroses were of the hypertrophic type and eight of the atrophic type. Eleven hypertrophic and five atrophic pseudarthroses showed primary healing after the operation. Two atrophic pseudarthroses were reoperated, whereupon healing was achieved. Two pseudarthroses, one from each group, did not heal because of previous or acquired infection. On average, 15 weeks were required for the consolidation of the hypertrophic and 45 weeks for the consolidation of the atrophic pseudarthroses.

Vertebral osteotomy for the correction of severe kyphosis in ankylosing spondylitis

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The earlier technique which involved a wedge resection of the posterior structures in the upper part of the lumbar spine resulted in the opening of one or more discs in front, after lordosing of the lumbar spine.

The author's technique involves a posterior wedge resection, removal of the pedicles and removal of bone from the back of the vertebral body.

The result after lordosing with this technique is a compression fracture of the posterior part of the second lumbar vertebra.

Eleven patients were operated with this technique with good results.

Total hip replacement a.m. Charnley, a ten-year follow-up

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One hundred and twenty-five hips with the original Charnley prosthesis *in situ* had a clinical and radiological follow-up 10 years or more after the operation. Eighty-six per cent were without pain and more than half had a normal walking function and range of movement. The radiological assessment showed that 29 per cent of the hips had signs of loosening of one or both components. A high incidence of loosening was found in males under 60 years of age at the operation, in hips with a large medullary canal or with a poor distribution of the cement at the tip or along the lateral border of the stem of the femoral component. Two-thirds of the patients with radiologically loose components were without pain, but their walking function was somewhat reduced. It is concluded that younger and physically active patients should be followed radiologically so that a loose symptom-free prosthesis should not reduce bone stock and thus put revision arthroplasty at risk.

Prophylaxis against thromboembolic complications in Charnley hip arthroplasties without medication

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The results of 8 years of thromboembolic prophylaxis without medication in Charnley hip arthroplasties were evaluated. The study involved 955 hips in 819 patients. The peroperative venous flow was stimulated through passive movements of the ankle joint. All patients used Flowtron® leggings, a non-invasive pneumatic intermittent compression device, on the unoperated leg during the operation and on both legs during the first 24 h after the operation. The patients were mobilized on the second postoperative day, bearing weight on the operated leg.

Ninety-six per cent of the hips operated followed this program. Thromboembolic complications were encountered in 3.8 per cent and there was one fatal pulmonary embolism.

Distal realignment a.m. Trillat in patellofemoral instability and malalignment

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Thirty-seven consecutive patients suffering from patellofemoral instability or malalignment were divided into three groups. Twelve patients had patellofemoral instability, 17 patients had patellofemoral instability and clinical chondromalacia of the patella and eight patients had patellar malalignment (abnormal Q-angle and/or patella alta) and clinical chondromalacia.

All patients in the first group had good or excellent results while 68 per cent in the second group achieved satisfactory results. In contrast, only 25 per cent ($P < 0.002$) of patients in the third group had satisfactory results.

Reconstruction of the anterior cruciate ligament using the Eriksson procedure

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Over a period of 1½ years, 16 patients with chronic anterior instability of the knee underwent reconstruction of the anterior cruciate ligament according to Eriksson, using the medial third of the patellar ligament together with a bone block from the patella. Eight patients obtained over 85 points on Lysholm & Gillquist's scoring scale. Twelve patients showed no anterior or antero-medial rotatory instability. Two patients felt instability during daily activities with only slight improvement of pain. Patients with previous reconstructions and/or degenerative changes in the joint had lower scores. Technical failures caused three poor results.

A prospective stress radiographic study in isolated ruptures of the anterior cruciate ligament

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In a prospective stress radiographic study, the course of 21 isolated ACL injuries was evaluated. There were eight primary sutures, six late reconstructions because of chronic instability and seven exploratory arthrotomies. At follow-up 7 years after surgery, the anterior drawer sign had disappeared in 5 out of 14 patients, but some of these patients developed progressive rotatory instability so that the total abnormal instability did not improve in any of the three groups. Ten patients obtained a completely symptom-free knee. A Jones procedure was able to reduce chronic anterior drawer instability, but several of these patients later developed troublesome patello-femoral pain. Acute suture of the isolated ACL injuries afforded the best results in this material and is still to be recommended.

Marmor knee arthroplasty. Results in 121 patients followed for 1–6 years

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One hundred and twenty-one patients who had undergone Marmor knee arthroplasty for osteoarthrosis or rheumatoid arthritis were followed up after 16–69 (mean 46) months. The evaluation was done according to the knee assessment scheme of Insall. All parameters demonstrated significant improvement, except the range of movement which remained unchanged. Fifty-two per cent were free of pain, 40 per cent had minor discomfort. Eight per cent of the patients required replacement of the implant with a total condylar prosthesis. A multivariable analysis revealed that female sex, young age, rheumatoid arthritis, preoperative valgus/varus and malpositioning of the components are significant risk factors. No difference was found in the clinical results between demi-arthroplasties and total arthroplasties.

Luxatio genus congenita

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Congenital dislocation of the knee is an extremely rare condition. The incidence in Caucasians is not known with certainty. In a study of the files from the former Orthopaedic Hospital in Copenhagen from the last 22 years a total of 11 patients with 17 dislocated knees was found. The records and the X-rays were studied and the patients followed up. The condition seemed more common in females (ratio 7/4). All knees were initially treated by manipulation and casts, but seven knees required surgical correction. In eight cases the manipulation caused a fracture, but no sequelae from this were found at follow-up. Among the patients, two had Down's syndrome, one Larsen's syndrome and one had myelomeningocele. A common clinical finding was muscular imbalance between the quadriceps and the hamstrings, and this may possibly be the cause of the condition.

An electronmicroscopic and X-ray spectographic investigation of the tissues surrounding the Ring prosthesis

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Evans (1974) described severe allergic tissue reactions to chromium and cobalt. During replacement

operations where Ring prostheses were replaced by a type of cemented prosthesis, tissue was taken and then analyzed in the electron microscope and with X-ray spectography. It was a constant finding that there was more chromium than cobalt in the fagosomes, perhaps because the inert surface layer of vitallium is constituted of chromium oxide. In cemented metal-to-plastic prostheses, metal sensitivity must be extremely rare. With cementless hips (Judet, Lord & Mittelmeyer), metal sensitivity might appear and the present investigation may be of value in the evaluation of such prostheses.

Free periosteal grafting of articular cartilage defects in knee joints using "Fibrinkleber-Human Immuno"

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On the basis of very promising results from previously published animal experiments, a few free periosteal grafts have been performed in human knee joints. The preliminary results are shown.

Supracondylar fractures of the humerus in children treated with lateral percutaneous pinning

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Twenty-one supracondylar fractures of the humerus in children were treated with percutaneous pinning using two Kirschner wires inserted laterally through the capitellum of the humerus. After fracture healing, the wires could be removed without the use of anaesthesia. At follow-up, 17 patients showed a normal configuration and function of the hand and arm and four had a slight reduction of the carrying angle.

None of the children had complaints of discomfort or showed a varus position of the elbow. The advantages of percutaneous pinning are the simplicity of the procedure, a stable fixation and a short hospital stay.

The end results are good and there are few complications. The risk of damaging the ulnar nerve is eliminated with this method.

Equinus deformity of the foot treated with the Vulpius operation

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Over a 5-year period, 28 cases of equinus deformity of the foot were treated with lengthening of the gastrocnemius by the Vulpius technique. This technique involves incision of the gastrocnemius aponeurosis in the mid-calf without disturbing the underlying soleus muscle. The patients were allowed immediate weight-bearing with bracing.

At follow-up, from 6 months to 5 years postoperatively, there were no cases of overcorrection, but two cases of recurrent deformity. The method seems rewarding, especially in cases of cerebral palsy.

Valgus instability of the knee joint after injuries to the medial collateral ligamentous structures and the anterior cruciate ligament

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The importance of the medial collateral ligament and the anterior cruciate ligament of the knee in relation to valgus and varus instability was investigated, mobility-patterns being drawn from ten osteoligamentous knee preparations after successive transections of the structures.

Cutting of the entire collateral medial ligament caused only slight valgus instability even when the knee was flexed. Further transection of the anterior cruciate ligament increased the instability considerably, but the knee remained stable in extension. The valgus instability after the transections was maximal at about 60° of knee flexion.

Patellar-femoral knee function in total knee arthroplasty

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Patellar-femoral knee function (PFF) following total condylar knee arthroplasty with patellar resurfacing was analysed in 100 knees in 78 patients. A lateral release was not performed. Patellar tilt and patellar subluxation were evaluated from "sunrise

view" X-rays and were correlated to total knee function (TKF) and PFF preoperatively and 1 year postoperatively. A positive tilt was encountered in 39 knees preoperatively and in eight knees postoperatively the tilt being between 5° and 15°. Four knees showed a negative tilt less than 10°. A lateral subluxation was found in 53 knees preoperatively and in 14 knees postoperatively. All showed a displacement less than 1/4 patellar width. PFF was found to correlate both preoperatively and postoperatively with TKF. However, there was no correlation between the preoperative and the postoperative PFF. The residual tilt and subluxation of the patella following knee arthroplasty did not influence TKF and PFF.

Traumatic dislocation of the knee

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Ten cases of traumatic dislocation of the knee were encountered over a 10-year period. Four joints were treated conservatively, six had operative repair of ligaments and capsule. Three patients had damage to the popliteal artery, of whom two were operated successfully and one had an above-knee amputation because diagnosis was delayed for 36 h.

At follow-up, the result was good in five patients (three operated) fair in two (one operated) and poor in one operated knee. One patient later had an above-knee amputation because of arteriosclerotic gangrene. A well-functioning knee can be achieved both with conservative and with operative treatment, but limb salvage depends on immediate diagnosis and treatment of vascular complications.