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ARTHROPLASTY OF THE KNEE

Å. Ahlberg & B. Lindén
Malmö

One hundred and thirty-nine cases of total knee replacement were re-investigated. Improvement was recorded in 86 per cent of the osteoarthritis and 94 per cent of the rheumatoid cases. The range of motion increased or remained unchanged in the osteoarthritis cases but was always improved in the rheumatoid cases. Knee extension was improved, particularly in the rheumatoid cases. Five cases of mechanical loosening and two of infection were recorded.

FOUR YEARS EXPERIENCE OF KNEE ARTHROPLASTY USING THE FREEMAN-SWANSON PROSTHESIS

P. Herberts & G. Andersson
Gothenburg

Results were presented of 43 knee arthroplasties using the Freeman-Swanson knee prosthesis. Thirty-two patients had rheumatoid arthritis, 8 had gonarthrosis and 3 were operated on bilaterally. All patients were studied preoperatively and postoperatively at fixed intervals of time, the follow-up varying from 6 to 48 months. Sixty-eight per cent were rated as good (pain-free, walking outdoors, range of motion 10° to 90°, stable and with varus or valgus deformity of less than 10°). Thirty per cent were improved and satisfied and only 2 per cent (one patient) rated as poor. The complications included 1 deep thrombosis and 2 temporary peroneal nerve paralyses. Three joints remained unstable, but only one had to be re-operated on.

KNEE ARTHROPLASTY ACCORDING TO GUNSTON-HULT

H. Henriksson & L. Hult
Stockholm

Out of 18 cases operated on with the original Gunston prosthesis, 12 were improved, two mechanical loosenings and two infections were noted and dislocation or subsiding of the prosthesis was observed in three cases. The Gunston-Hult modification was used in rheumatoids mostly as a double demi-prosthesis, whereas osteoarthritic cases were operated on mostly with a medial demi-prosthetic replacement. Fifty-five out of 62 patients were excellent or good, the results being slightly better in osteoarthritis; unimproved patients usually had complications of some sort, such as subsiding in two cases, loosening in two and infection in one. Femoro-patellar osteoarthritis appeared to be of little importance.

AN UNUSUAL COMPLICATION IN THE FREEMAN-SWANSON PROCEDURE

G. Frykman
Västerås

A 60-year-old woman with rheumatoid arthritis was operated on using the Freeman-Swanson procedure. The operation succeeded technically, but after 20 days instability was noted. The distal end of the femur was displaced medially in relation to the tibia. Later when instability increased, the patient was re-operated on. There was a complete rupture of the medial collateral ligament in the femoral attachment and a partial rupture of the collateral ligament. The prosthesis was removed and replaced by a hinge prosthesis with good results.

THE HYPOPERFUSION SYNDROME IN KNEE ARTHROPLASTY

H. Edfeldt & L. Lidgren
Lund

Hypotension and hypoxaemia have been reported to occur as peroperative complications in intramedullary implantation of endoprostheses in the knee and the hip. It has been claimed that these complications are caused by the insertion of cement and prosthesis into the marrow cavity. Preliminary results of operations

with the Marmor procedure indicate that such complications may be seen even if the marrow cavity is not involved.

SCINTIMETRY AS A DIAGNOSTIC MEANS IN SUSPECTED INFECTION OF TOTAL ARTHROPLASTY OF THE KNEE JOINT

G. Jonsson, L. Lidgren & L. O. Sjöstrand
Lund

A high infection rate (50 per cent) was recorded in 15 patients with osteoarthritis operated on with the Guépar total-hinge prosthesis. Pre-, per- and postoperative antibiotic prophylaxis markedly reduced the infection rate. Scintimetry could be used in diagnosing the infection and in assessing the effect of antibiotic treatment.

PROSPECTIVE SURVEY OF ENDOPROSTHETIC ARTHROPLASTY OF THE KNEE IN SWEDEN

G. Bauer, M. Grubor & A. Lindstrand
Lund

All departments of orthopaedic surgery in Sweden, a total of 34 units, have agreed to participate in a collaborative prospective study of endoprosthesis arthroplasty of the knee. In each case a form will be completed on discharge and submitted to a central agency together with copies of pre- and postoperative X-rays. On the original form, early complications will be reported. After discharge, all complications will be reported. The agency will report at regular intervals on types of complications with relation to diagnostic groups and types of endoprostheses. As the number of knee arthroplasties performed in Sweden increase, the total number of operations reported should reach about 10,000 in 6 to 7 years.

BONE CHANGES AND BONE HEALING AFTER RIGID OSTEOSYNTHESIS

P. Slätis
Helsinki

The application of a rigid plate on diaphyseal bone in rabbits caused a change of cortical bone into trabecular. Because of osteoclast activity a considerable porosity occurred in about 3 weeks. The resorption cysts increased and after 12 weeks a confluence of the cysts was noted. The torque breaking strength decreased by 40 per cent. The bone grew wider because of subperiosteal apposition. A similar pattern was seen after osteotomy or fracture. Healing usually occurred after 9 weeks. Compression did not speed the healing process.

SECONDARY OPERATION OF FRACTURE OF THE ANKLE JOINT

S. Olerud
Stockholm

Shortening and outward rotation of the fibula is the most common cause of osteoarthrosis after ankle fractures. Late reconstruction of the talo-fibular joint can be obtained by clearing the syndesmosis of fibrous tissue as well as lengthening and derotating the fibula after osteotomy. This procedure also tightens the anterior fibulo-talar ligament. Dorsiflexion is usually improved.

SCINTIMETRY OF PATELLAR OSTEOMYELITIS

G. Hallin & N. Nylén
Falun

A case of patellar osteomyelitis in a young boy was described. A scintimetric study with technetium-EDPH revealed a decrease of the uptake in the affected patella at an early stage, the uptake later on being increased above normal and finally becoming normal. This early decrease in uptake may be related to a relative avascularity of the patella during the first acute phase.

SCINTIMETRIC STUDY OF OSTEOCHONDRITIS DISSECANS IN THE FEMORAL CONDYLES

B. Lindén
Malmö

The uptake of ^{85}Sr was studied in 12 cases of osteochondritis dissecans in the femoral condyles of young adult men. There was an increased local uptake of tracer close to the lesion but not in the rest of the joint. The uptake was considerably less than in localized changes due to osteoarthritis or osteonecrosis.

THERAPEUTIC ARTHROSCOPY

N. Oretorp, J. Gillquist & G. Hagberg
Linköping

In a series of 700 arthroscopies, 40 per cent of the cases had to have arthrotomies. However, in cases of loose bodies, in certain semilunar cartilage lesions and for the removal of sutures after cruciate ligament repair, arthroscopy can be used therapeutically. Loose bodies less than 4 mm can be flushed out, larger bodies may be removed using a stone basket. With this technique, bodies larger than 2×1 cm were removed. The knee function was completely restored 3 to 4 days postoperatively with full ability to participate in competitive sports.

EXPERIENCE OF THE ACUTE MANAGEMENT OF SPINAL CORD INJURIES

(Guest lecture)

M. Weiss
Konstancin, Poland

A review of 3,500 spinal cord injury cases was made at the Konstancin Rehabilitation Institute in Poland. Immediate operative treatment for total paralysis with or without instability has been suggested for the last 6 years. Special springs are used to accomplish reduction and stability. In unstable fractures, an autograft of iliac crest bone is used. Postero-lateral approaches can be performed after the stabilization in order to remove disc protrusions. Caution indications are advised in non-complete cases. Patients are mobilized after 4 weeks postoperatively. One hundred and ninety-five cases have been operated on, 153 with and 42 without dislocation. The reason for this strategy is that no-one knows how great the damage to the cauda equina is. Surgery decreases the risk of secondary changes. Stabilization of the fracture improves the breathing of the patient and excludes venostasis. Springs are the best devices for fitting into the sphere between transversal and spinous processes.

A NEW CONTRAST AGENT FOR MYELOGRAPHY

S. Cronqvist
Lund

Amipaque is a new-ionic water-soluble contrast medium suitable for examination of the subarachnoid space and the whole spinal canal. No spinal anaesthesia is needed. The size of the cord can be easily evaluated, and roots and root sleeves are well demonstrated offering increased diagnostic information in the cervical and lumbar regions. Adverse reactions seem to be less frequent and definitely less pronounced than with pre-existing agents. No irreversible side effects—arachnoiditis—have been recorded.

REHABILITATION OF SPINAL CORD INJURIES IN SWEDEN

Å. Stenram
Lund

There is a considerable risk of secondary neurological injury during the initial handling of patients with spinal cord injuries. Transportation under ideal conditions directly to a spinal cord unit is to be preferred. A helicopter flight provides less stress on the injured patient than rapid ground transportation. Surgery is indicated particularly in cases with progressive neurological injury. The Cloward operation may be useful in immobilization of the cervical spine and at other levels surgery may also help in the early mobilization of the patient. Experimental data indicate that one should continue to try steroids in the early treatment of spinal cord injuries.

LASER IN ORTHOPAEDIC SURGERY

H. Horosovski
Tel-Hashomer, Israel

In laser surgery, the coagulation effect is particularly useful. The laser radiation may be used in tumor surgery and joint surgery. In applying the method on Ewing sarcoma and osteogenic sarcoma, the cutting and the devitalizing effect of the laser beam is used. The hemostatic effect is its greatest advantage in joint surgery. Cutting of bone with the laser beam may cause healing difficulties and compression osteosynthesis is therefore advised in such cases. The surgical procedure may be complicated with skin burns. Postoperative pain is reduced. The most important use is in tumor surgery and in hemophilia surgery. It is also valuable in arthrolysis and joint replacements but is still questionable where surgery on the fine structures is involved.

IS THERE AN INCREASING RISK OF FEMORAL NECK FRACTURE?

K. Obrant
Malmö

The total number of femoral neck fractures is increasing in the city of Malmö in spite of a fairly constant population. Until about 1968 the incidence and risk of fracture had also increased. After that time, however, the risk has increased only in the age group over 80. However, owing to the population distribution of the city, there is still a continuing rise in the total number.

ENDER NAILING OF TROCHANTERIC FRACTURES

M. Nilsson
Stockholm

Eight hundred and fifty hips have been operated on since 1971. The experience is positive with few complications (4 per cent). The patients were mobilized on the first day, the mean hospitalization time being 26 days.

RE-OSTEOSYNTHESIS OF FEMORAL NECK FRACTURE

C. Zetterberg, L. Irstam & G. Andersson
Gothenburg

Over five years, 10 per cent of more than 500 cases of cervical femoral neck fracture were re-

osteosynthesized. Most of the cases were of Garden's stage IV. The primary reduction had in most cases been acceptable. The indications were penetrating or sliding nail with or without fracture dislocation. Only 22 per cent of the re-osteosynthesized cases healed whereas the remainder showed signs of pseudarthrosis or necrosis, all without relation to the fracture type.

WHEN IS A CONTROL VISIT NEEDED AFTER HIP FRACTURE IN THE ELDERLY?

E. Liedberg
Lund

Almost 250 patients with hip fractures are treated in Lund every year. From 1972 to 1975, 34 patients were treated for complications. Only in one third of the cases were the complications suspected at regular follow-up examinations. Patients with complications have severe pain and seek medical advice. Regular follow-up with radiograms is recommended on three occasions only: postoperatively, after 10 days, and after 4 months.

SCINTIMETRIC STUDIES FOR THE EARLY DIAGNOSIS OF FEMORAL HEAD NECROSIS

G. Baur, R. Brümmer, M. Gustavsson, L. I. Hansson, W. Mortensson & L. O. Sjöstrand
Lund

Eighty-four patients were studied with ^{85}Sr scintimetry. Forty healed without complications. Forty-four were complicated in one way or another. The uptake in the femoral head normally drops slowly after the fracture whereas those with complications maintain a significantly higher uptake. In a prospective series of 29 patients, measurements were taken with a digital-step scanning technique at short intervals after surgery. During the first two months after surgery the uptake of ^{85}Sr could not predict complications whereas after 4 months the uptake was correlated to the clinical course and to complications.

FRACTURES OF THE ACETABULUM—A FOLLOW-UP OF 100 PATIENTS WITH 101 FRACTURES

O. Lansinger & I. Goldie
Gothenburg

Out of 66 patients with *central fractures,* 61 were treated conservatively and 5 surgically. Of the conservatively treated patients there was no central dislocation of the femoral head in 30 cases and the result for these patients was excellent–good in 90 per cent. In 15 patients with central fracture dislocation, the fracture involved the inner acetabular wall, and the result for these patients was excellent–good in 87 per cent. However, in those 16 patients with fractures of the acetabular roof the result was only excellent–good in 38 per cent. Five patients were treated surgically: 1 was good and 4 poor. Of 35 patients with *posterior fractures,* 17 were treated conservatively with excellent–good results in 82 per cent. Eighteen were treated surgically with excellent–good results in 67 per cent.

FUNCTION FOLLOWING REMOVAL OF TOTAL HIP PROSTHESES

G. Gudmundsson, S. A. Ahlgren, E. Bertholdsson & I. Hermansson
Skövde

Eleven patients were reviewed on average 2 years after the initial total hip implantation. The implants were all removed due to infection. Three patients were working and all patients were improved with regard to pain as compared with their initial status. Only one regretted the initial operation and none the removal of the prosthesis. Five patients experienced weight-bearing pain and five experienced pain on resting. One patient, grossly overweight, was mostly confined to a wheelchair. Two could not walk outdoors and another four felt that the hip was unstable. Ten of the patients had healed promptly, whereas one had recurring fistula for three months. There was an average leg shortening of about four centimeters and three patients had an outward rotational malposition. Otherwise there was no fixed malposition. There was a considerable difference between active and passive range of motion. Two of the patients showed signs of mental depression needing psychiatric care.

HEMODILUTION IN TOTAL HIP REPLACEMENT SURGERY

Å. Ahlberg, A. Nillius, B. Rosberg & A. Udén
Malmö

Preoperative normovolemic hemodilution using dextran 70 was studied in a controlled randomized group of patients ($n = 40$). The patients were drained of 1.5 litres of blood. The control group were given 0.5 litre Macrodex® on the day of operation and on the third postoperative day. The total blood loss was not increased by hemodilution. In the hemodilution cases, most of the blood was replaced by the patient's own. Pulmonary emboli, detected by lung scanning, were more frequent in the control group and one patient died of pulmonary embolization. There were no serious complications in the hemodilution group. The technique markedly reduced the need, and risks, of bank blood,

and possibly reduced the rate of postoperative pulmonary emboli.

QUADRI-LATERAL CAST BRACE IN FEMORAL SHAFT FRACTURES

S. Mattsson
Umeå

Six fresh femoral shaft fractures and five femoral shaft fractures with delayed union were treated with a functional walking plaster cast. The fractures were located on the two lower thirds of the femoral shaft. The bracing was preceded by traction for about 2 months. A brace moulded on the thigh was then used for another 2 to 4 months. Within 7 months all cases were healed. In fresh cases the range of knee motion became normal and there was no shortening of the leg. In the cases of delayed union the treatment was in 2 cases combined with a pseudarthrosis operation. One infected case took 15 months to heal, otherwise healing was observed to take place within 6 months. There were no complications with this treatment.

COMPARISON OF MENISCECTOMY IN IN-PATIENTS AND OUT-PATIENTS

A. Stenström, B. Hagstedt & P. Ljung
Lund

Half of the patients were operated on as out-patients, half were admitted to hospital for surgery. There were no differences in the pre-operative signs and symptoms in the two groups. At the follow-up there was no difference in the number of postoperative out-patient visits, nor was there any difference in results between the two groups.

THE POPLITEAL PTERYGIUM SYNDROME

L. I. Hansson, K. Jonsson, A. Stenström & K. G. Thorngren
Lund

A 74-year-old woman with this syndrome was presented. She had been subjected to a series of surgical procedures due to malformations in the facial skeleton, the hands and the knee joints. Three out of 10 siblings and the father and paternal grandmother showed signs of the syndrome. This is an autosomal dominant hereditary syndrome with incomplete penetrance and expression and with deformities such as popliteal pterygium, equinus foot, osseous dysplasia, syndactylia, perineal webbing, hypertrophy of the clitoris, hypotrophy of labia and uterus. Hair pigmentation and growth deviations are also found. These patients develop general arthrosis and spondylosis. As, in this patient, a greater than normal CE-angle may be seen.

A MODIFIED OSTEOSYNTHESIS ACCORDING TO RYDELL IN EPIPHYSEOLYSIS OF THE FEMORAL HEAD

L. I. Hansson, A. Stenström & K. G. Thorngren
Lund

A Rydell nail has been modified so that the inserted nail is attached to the femoral head, proximal to the growth zone. When the femoral neck grows the nail is pulled into the femur since the attachment proximal to the epiphyseal line is maintained. The method was successfully used for re-operation of cases with slipping nails as well as in fresh cases.

PSEUDARTHROSIS AFTER TIBIA OSTEOTOMY

B. Tjörnstrand, B. Hagstedt & B. Persson
Lund

Twelve cases with delayed union or pseudarthrosis after tibia osteotomy for gonarthrosis were re-operated on, seven with resection of the pseudarthrosis, reduction and Charnley compression osteosynthesis, one with a hinge prosthesis and the remainder by various methods. Comparison was made between the preoperative status and the final status in these patients. With regard to pain there was improvement, with regard to walking capacity there was no change. In most instances the required correction of the initial angulation deformity was obtained. The cases described here represent 3.6 per cent of the total of a series of tibia osteotomies. It is concluded that these cases should be re-operated on and that the Charnley compression instrument is useful for this purpose.

AUTOTRACTION

S. O. Myrin
Täby

Thirty-seven consecutive patients with signs of herniated disc were treated by autotraction in a collapsible portable traction frame—the Spinatrac. After an average of six treatments per patient, 29 recovered completely, six were much improved and one somewhat improved, whereas one patient with obstructive arterial disease remained unchanged. Thirty-nine patients with backache, without signs of disc herniation for at least one month, were treated an average of five times. Thirty-one recovered completely. The frame has also been successfully used for cervical traction and hip traction.

LEFT-SIDE PREDOMINANCE OF LUMBAR DISC HERNIATIONS

E. Spangfort
Huddinge

Out of 2,504 lumbar disc operations 53.3 per cent were left-sided regardless of the sex of the patient. There was no left-side predominance in cases with a negative finding at operation. The predominance was less at more cranial levels of lumbar herniation. It was not related to heavy work. The left-side predominance was highest in young patients and those under the age of 40 when disc herniation is most common. This pattern was most obvious in cases with complete herniations.

AN ORTHOPAEDIC OUT-PATIENT SERVICE

H. G. Edeland
Mölndal

Sixteen months of experience of the work in a separate out-patient service attached to an orthopaedic department was presented. In one year one surgeon treated 4,397 patients, 210 of whom were operated on. The ratio of first visits to return visits was 1:1.

RADIOGRAPHIC ASSESSMENT OF DISLOCATION IN DISTAL RADIAL FRACTURES

S. Friberg & B. Lundström
Umeå

Radiography was performed in 40 wrists with fractures of the distal part of radius. The effect of moderate rotation of the wrist and various directions of the central beam on the inclination of the distal radial joint plane in the lateral view was studied. It was demonstrated that small differences in rotation of the wrist seriously altered the measured inclination of the joint plane when a perpendicular projection was used. Angulation of the central ray 15° in a proximal direction significantly increased the accuracy of the examination.

THE RADIAL TUNNEL SYNDROME

C. O. Werner
Lund

Symptoms similar to those of the tennis elbow may be caused by compression of the deep branch of the radial nerve. A series of photographs of the operative findings in selected cases was presented.

EVALUATION OF A MULTIFUNCTIONAL HAND PROSTHESIS CONTROLLED BY MYOELECTRIC PATTERNS

P. Herberts & C. Almström
Gothenburg

A promising approach to the control problems in multifunctional hand prostheses is the use of a pattern recognition technique in conjunction with a digital computer. A portable control system for operating three bidirectional movements of a hand prosthesis, based on this technique, has been developed and adapted to the Swedish hand prosthesis which has six active movements. An added advantage is that the functional pattern may be studied with the computer. The evaluation has shown that two amputees equipped with this control system were able to use all the prosthetic movements available.

EFFECT OF GROWTH HORMONE AND THYROXINE ON CORTICAL BONE REMODELLING AND ON LONGITUDINAL BONE GROWTH

A. Stenström, L. I. Hansson & K. G. Thorngren
Lund

Cortical bone remodelling along the femur diaphysis and longitudinal bone growth in the proximal tibia were determined in hypophysectomized and hormone-treated hypophysectomized female rats aged 60 to 105 days with the tetracycline technique. The hypophysectomized animals showed an increased periosteal resorption and an increased endosteal growth, whereas the longitudinal bone growth increased. Thyroxine increased the periosteal resorption but had no endosteal effect, whereas the longitudinal growth increased.

THE FRACTURE INCIDENCE IN 87 EPILEPTICS TREATED WITH DIPHENYLHYDANTOINE

A. Wallöe & L. Lidgren
Lund

The fracture incidence was studied in 87 patients with epilepsy. In 7 years, 34 of these patients had altogether 70 fractures, 35 of which belonged to the group of fragility fractures. Thirteen fractures occurred during epileptic seizures. Even when the latter cases were excluded, the risk of fracture in epileptic patients was calculated to be six times greater than the expected rate when age and sex were taken into account.