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THE EFFECT OF FENESTRATION ON INTRAOSSEOUS PRESSURE AND PAIN AT REST IN PATIENTS WITH HIP OSTEOARTHRITIS—A PRELIMINARY REPORT

J. Aström (Orthop. Dept., Umeå)

Increased intraosseous pressure has been demonstrated in the proximal end of the femur in cases of osteoarthritis of the hip and a relationship between the increased pressure and pain has been suggested. An 8 × 15 mm hole was made in the cortex of the trochanteric region in 19 patients with hip osteoarthritis and pain at rest. A pedicle muscle graft was implanted in the hole. A small but significant immediate decrease of the intraosseous pressure in the head and the neck of the femur was recorded in 9 out of 9 patients. In 6 patients investigated 3 months after the operation the pressure was lower than immediately after the operation. Eleven out of 14 were relieved of pain or had less pain 3 months after operation but after 12 months the results were satisfactory in only 4 out of 8. The procedure is a possible alternative in selected cases of osteoarthritis with pain at rest as the main symptom.

INTRAOSSEOUS PRESSURE FOLLOWING TIBIA SHAFT FRACTURE

P. H. Widmark (Orthop. Dept., Malmö)

The intraosseous pressure was measured in 19 patients with healing tibial shaft fractures. The pressure was reduced proximally as well as distally to the fracture. The pulse pressure amplitude was not changed.

RESULTS OF THE PUTTI-PLATT PROCEDURE FOR SHOULDER DISLOCATION

G. Lundholm (Orthop. Dept., Karlstad)

Eighty-seven cases of recurrent shoulder dislocation were reinvestigated 1-11 years (average 8 years) after treatment with the Putti-Platt procedure. No serious per-operative complications were recorded. In no case had dislocation occurred after the operation. Thirty-one patients complained of, usually minor, discomfort or pain, and one had been forced to change his occupation. In 71 patients a physical examination of the operated joint was performed, and in 17 of these the range of rotational motion was decreased by 20° or more.

POSTOPERATIVE WOUND INFECTION IN OUTPATIENTS AND PATIENTS ADMITTED TO HOSPITAL

B. Georén (Orthop. Dept., Umeå)

The rate of postoperative infection was studied in 510 patients who had undergone foot operations, mostly for bunions and hammer toes. The rate was significantly greater, more than doubled, in patients admitted to hospital before the operation as compared to those who were outpatients. Interaction of variables such as age and sex of the patients, choice of surgeon or operating room could not explain the difference.

LATE COMPLICATION AFTER BUNION SURGERY

J. Hansson (Lundby Medical Center, Göteborg)

Among 190 cases operated on because of bunion, by subcapital osteotomy or by the Keller procedure, 7 developed stress fractures in the 2nd, 3rd or 4th metatarsals. The age of these patients varied from 16 to 60 and the time interval between surgery and diagnosis of the fracture was 3-10 months. In all 7 cases the fractures healed without further complications. It is suggested that the changes in magnitude and direction of weightbearing on the bones of the foot after surgery is the cause of this complication.

A 2-YEAR FOLLOW-UP OF CHARNLEY HIP ARTHROPLASTIES

J. Stenport (Orthop. Dept., Södersjukhuset, Stockholm)

Two hundred Charnley hip arthroplasties were reinvestigated 2 years after the operation. Seventy-five per cent of the operations were performed on patients in the age group 56-75, mainly with osteoarthritis. The variables of pain, range of motion and function were ranked before the operation and at the time of the reinvestigation. It could be demonstrated that the operation resulted in efficacious relief of the pain, increased range of motion and increased function. The results were classified as poor 7 per cent, fair 5 per cent, good 30 per cent and excellent 58 per cent. In 10 hips the endoprosthesis had been removed.

PROPHYLACTIC ANTIBIOTIC THERAPY IN HIP ARTHROPLASTIES

M. Wantschura (Orthop. Dept., Norrköping)

In 92 arthroplasties according to the Charnley-Müller procedure antibiotic prophylaxis was given, including Penicillin in intravenous infusion from the day of the operation to the fourth postoperative day and Cloxacillin to the end of the third postoperative week. There were two incidences of exzantaema. Nausea and diarrhoea were noted in 12 cases, in all instances after Cloxacillin treatment. No infection occurred. The rate of complications was otherwise normal. The results of the operative procedure were very good with regard to pain, range of motion and function. Prophylactic chemotherapy is recommended in hip arthroplasties.

INTRAMEDULLARY PRESSURE CHANGES DURING THE CEMENTING OF FEMORAL HEAD PROSTHESIS

S. Olerud (Orthop. Dept., Uppsala)

It was demonstrated that the pressure in the marrow cavity of the femur increases significantly and remains increased for a few minutes when a hip prosthesis is inserted and cemented. It was suggested that the content of the marrow cavity, when under pressure, may cause circulatory changes in the cortical bone of the femur and result in a loosening of the prosthesis. Against the background of sudden death described in hip arthroplasties, the possible systemic effects of the cement hardener and the increased pressure in the marrow cavity were discussed.

EARLY RESULTS FOLLOWING LOW-FRICTION ARTHROPLASTY OF THE HIP ACCORDING TO CHARNLEY

H. Semb (Orthop. Dept., Karlstad)

The material consisted of 66 hips in 21 men and 44 women. The follow-up varied from 6 to 18 months and was aimed mainly at assessment of complications. There was one death, 5 infections, 7 haematomas, 2 cases of thrombophlebitis, no pulmonary emboli, 12 wirebreaks and 3 dislocations. The preliminary results were satisfactory.

EXPERIMENTAL FRACTURES OF THE TALUS

L. Peterson & E. Dahlberg (Orthop. Dept. II, Göteborg)

A study has been carried out the object of which has been to produce experimental fractures of the talus. It is intended that these experiments should serve as a basis for future studies on the influence of fractures on the vascular supply of the talus. A cadaver foot in an ordinary shoe was fitted in a device with adjustable wires attached to the heel and the forefoot. Force was applied by a swinging pendulum which struck the mid-sole of the foot. Theoretical calculations suggested that fractures occur by bending forces with the tibia against the talus and also by shearing forces when the heel is well fixed. The practical experiments verified completely the theoretical calculations.

THE DASHBOARD FRACTURE—LONG-TERM RESULTS OF SURGICAL TREATMENT

A. Waller (Surg. Dept., Karlstad)

Three types of dashboard fractures of the acetabulum were described. Type 1 with a small posterior fragment which should not be operated on, type 2 with a large single fragment which should be treated by open reduction and osteosynthesis and type 3, the comminuted fractures, which usually should be operated upon. Out of the two latter types one third result in osteoarthritis of the hip and one fifth in necrosis of the head of the femur. Out of 63 operated cases 45 were classed as excellent or good at long term follow-up; most of the poor results belonged to type 3. Myositis ossificans, a common complication, could not be demonstrated to cause poor results. The surgical procedure included three weeks of traction postoperatively

and it was stressed that exploration of the joint and clearing the acetabulum of loose fragments is important. Finally, the radiological procedure must always include the posterior projection of the acetabulum.

HEMIPELVECTOMY—CASE REPORTS

G. Kollberg (Orthop. Dept., Karlstad)

The hemipelvectomy procedure was described in 3 cases, 2 with angiosarcoma and one with epithelial cancer. It was concluded that bone tumour surgery of this magnitude would benefit from being concentrated at one or a few centres in Scandinavia.

HAEMANGIO-PERICYTOMA—A CLINICAL, ROENTGENOLOGICAL AND PATHOLOGICAL-ANATOMICAL STUDY WITH CASE REPORTS

J. Möller-Nielsen, L. Angervall & B. Stener (Orthop. Dept. II, Göteborg)

REGIONAL BLOCK ANAESTHESIA FOR SHOULDER OPERATIONS

L. Dahlstedt & A. Mortasawi (Södersjukhuset, Stockholm)

Supraclavicular block of the arm plexus combined with superficial blocks of the supraclavicular and intercostobrachial nerves was tested with shoulder operations. For the plexus block 0.5 per cent bupivacain-chloride was used and for the superficial 1 per cent mepivacain-chloride. In 21 shoulder operations, all including operating in the area around caput humeri, this type of anaesthesia was satisfactory and without complications.

TECHNETIUM SCINTIGRAPHY IN HIP ARTHROPLASTY

G. Hallin (Dept. of Orthop. Surg., Uppsala)

Scintigraphy using ^{99m}Tc -labelled polyphosphate showed distinctly increased uptake in hips with clinical and radiological signs of loosening of the prosthesis. The uptake was also increased in cases with uncertain radiological signs. The uptake reflects the metabolic activity in the bone which surrounds the prosthesis. The activity is probably increased for a considerable time before radiological signs of loosening become evident. Scintigraphy therefore may prove to be a useful prognostic-diagnostic method for predicting complications after hip arthroplasties.

STRONTIUM-85 SCINTIMETRY IN HIP ARTHROPLASTY

L. Sjöstrand (Orthop. Dept., Lund)

Digital scintimetry with Strontium-85 was carried out in patients operated on with total hip replacement according to Charnley. In all cases the uptake was initially increased, but in cases without complications the values became stabilized at a low level within the first 8–10 months. In infected cases (increased ESR, draining sinus, radiological signs) the uptake remained high. Also, in cases with

pain in whom the diagnosis of postoperative infection had not been established the uptake was increased. It is suggested that this method may be used to predict postoperative infection.

HARDNESS OF THE SUBCHONDRAL BONE OF THE TIBIA CONDYLES IN OSTEO-ARTHRITIS AND RHEUMATOID ARTHRITIS

P. Lereim, I. Goldie & E. Dahlberg (Orthop. Dept. II, Göteborg)

The hardness of bone, defined as its capacity to resist the impact of a penetrating agent, is believed to be directly related to the degree of mineralization. The hardness of the subchondral bone of the tibial condyles was tested by the Brinell method which involves a steel ball being pressed into the tested material under standardized conditions. The hardness was decreased in patients with osteoarthritis and rheumatoid arthritis when compared to the normal. The hardness increased with age in normal bone whereas in osteoarthritis and rheumatoid arthritis it remained unchanged. There was no difference between the sexes and steroid treatment did not influence the hardness. The results are in part contradictory to those of other investigators.

ASYMMETRY OF THE EPIPHYSEAL NUCLEUS IN THE FEMORAL HEAD IN STABLE AND UNSTABLE HIP JOINTS

R. Lemperg (Orthop. Dept.), *B. Lilieqvist* (Diagn. Neuradiology) & *S. Å. Mattsson* (Orthop. Dept., Umeå)

An investigation was carried out to study the incidence of asymmetry of the ossification centre in the femoral head, in children aged 3 to 12 months.

Asymmetry of the radiopaque osseous nucleus in the femoral head was present in about 25 per cent of all infants with clinically normal hips. Equalization occurred with increasing size of the nuclei.

In hip joints with the diagnosis unilateral preluxation at birth, there was a statistically significantly higher frequency of smaller nuclei on the clinically affected side. Equalization proceeded with increasing age.

The finding of a smaller osseous nucleus in one femoral head in infants below the age one year is without diagnostic value in the diagnosis of suspected hip instability.

ORIENTAL ORTHOPAEDICS

M. Zayer (Orthop. Dept., Lund)

The term "orthopaedics" was first used by Nicolas Andry in Paris in 1741. The first orthopaedic operation on record is, however, the creation of Eve out of the rib of Adam. From *prehistoric times* fractures osteomyelitis, arthritis, bone tumours, amputations and trepanations are documented. One of the oldest cultures in the world *Mesopotamia* (4000-3000 B.C.) had clerical physicians as well as surgeons who treated fractures, rheumatism and neuralgia. From the *Egyptian* mummies and sculptures the presence of Pott's disease, arthritis, paralysis, dwarfism, poliomyelitis, osteoarthritis, spondylitis, amputations and other deformities can be

deduced. From *Chinese* medical textbooks one can learn about braces for the spine, for injured knees and fractured forearms, and about exercises suitable for the different months of the year. Avicenna was the most famous physician of the Eastern Califate of *Bagdad*. His *Al-canon* was translated into Latin in 30 editions and it dealt with dislocations, fractures of the nose and the clavicle, treatment of dislocated vertebrae with manipulation, as well as the art of curing love which the author considered to be a disease. The most famous of the surgeons in the Western Califate of *Cordoba* was Abulcasis who described the use of the branding-iron and operations such as trepanations, amputations and operations for aneurysma. *Cordoba* at that time represented the light of the East in the medieval darkness of Western medicine.

ORTHORADIOGRAPHIC MEASUREMENT OF ANGULAR DEVIATION OF THE KNEE JOINT

P. Edholm, O. Lindahl, B. Lindholm, R. Myrnertz, K.-E. Olsson & E. Wennberg
(Orthop. Dept., Linköping)

On the supine patient the leg was fixed to the table and the foot was first drawn medially and then laterally. At each provocation three films were exposed, one each of the hip, the knee and the ankle. A coordinate pattern was included on the films and by the three films correctly located in a coordinate system, an "orthoradiographic projection" was obtained of the hip, knee and ankle. In a group of control cases the forces applied to the foot caused it to move, on the average, within an angle of 3°. The line from hip to ankle, on the average, passed through the middle of the knee.

TIBIAL OSTEOTOMY IN GONARTHROSIS

P. Edholm, O. Lindahl, B. Lindholm, R. Myrnertz, K.-E. Olsson & E. Wennberg
(Orthop. Dept., Linköping)

Twenty-eight patients with high tibial osteotomy have been examined with orthoradiographical determination of the range of lateral deviation before and after operation. No correlation was found between the degree of correction attained by the procedure and the patient's judgement of pain at rest, functional pain and general well-being. However, the time of observation was short (8 months). The orthoradiographical examination was found to be of great value for the evaluation of the patients before and after operation.