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EDITOR : A. ALHO

RESULTS OF THE SURGICAL TREATMENT OF DISLOCATION OF THE PATELLA

K. ÖSTERMAN, K. AALTO & P. SCHUGK

Orthopaedic Hospital of the Invalid Foundation,
Helsinki

A total of 99 patients (71 women, 28 men) were operated on from 1946 to 1978 for dislocation of the patella. The age at the onset of symptoms was 14.2 years, duration of symptoms 10.2 years and age at operation 24.3 years, on average. The follow-up time varied from 1 to 36 years (average 10.2 years). Eighty patients (93 knees) were re-examined clinically, radiologically and by measuring the muscular power.

The operative methods used were modifications of Hauser's, Krogius' or Campbell's operation or a combination procedure. Fourteen patients were operated on more than once. Hauser's method was avoided in young patients with open epiphyses. The operative result was considered excellent in 15/93, good in 29/93, fair in 46/93 and a failure in 3/93 patients. The clinical results were better in patients developing symptoms when young. Of the patients who required more than one operation only one had an excellent result at follow-up. The final result did not deteriorate with a longer observation period.

The results of the present study indicate that the biomechanics of the patello-femoral joint should be carefully analyzed preoperatively and the results of the analysis must be considered individually in planning the details of the operative procedure.

CLASSIFICATION OF ANKLE FRACTURES IN CHILDREN

V. VAHVANEN & K. AALTO
Aurora Children's Hospital, Helsinki

The radiograms of 310 children treated for ankle fractures were evaluated for grouping according to the

classifications of Ashhurst-Bromer (1922) and Weber (1966), Lauge-Hansen (1942, 1950), and Salter-Harris (1963). The mean age of the children at the time of injury was 11.1 years (range 2-14 years). A total of 221 (71.3 per cent) children had malleolar fractures, 71 (22.9 per cent) had tibial epiphyseal fractures and 18 (5.8 per cent) had syndesmotic lesions. The age distribution of the children with the various types of fractures was typical: malleolar fractures predominated among the younger children, and epiphyseal fractures were most common among the older ones. Only the oldest children had avulsion fractures of the syndesmosis.

Grouping the fractures according to Lauge-Hansen and Ashhurst-Bromer-Weber, which are classifications suitable for adults, was largely unsuccessful. Epiphyseal fractures were easily classified according to Salter-Harris.

Ankle fractures in children can be roughly divided into avulsion and epiphyseal fractures. Adequately reduced avulsion fractures can be expected to heal well; epiphyseal fractures, however, may give rise to later complications.

We therefore propose that ankle fractures in children be classified for clinical purposes on the basis of radiological findings and on an additional simple grouping according to risk: Group I - low risk, avulsion fractures and epiphyseal separations (Salter types I and II); Group II - high risk, fractures through the epiphyseal plate (Salter types III, IV, V).

HARRINGTON OPERATION AND SPINAL FUSION IN SCOLIOSIS WITH OSTEOPERIOSTEAL GRAFTS (FILM)

O. SNELLMAN, M. POUSSA, K. ÖSTERMAN & V. RITSILÄ
Orthopaedic Hospital of the Invalid Foundation,
Helsinki

The film presents the technique used in scoliosis fusions during the last few years. The surgical treatment of

scoliosis is usually performed in two phases. In the first phase the Harrington rod is applied between the superior and inferior vertebrae of the curve. The hooks are seated at both ends of the curve into the intervertebral joints. In the second phase the fusion is performed using tibial osteoperiosteal shavings as grafting material. These osteoperiosteal grafts are taken with a chisel from the medial facet of the tibia and applied to the decorticated laminae in the fusion area. In the post-operative period a Milwaukee brace is used for 6 months.

VICTIMS OF SPORTS INJURIES ATTENDING A CASUALTY DEPARTMENT

J. SANDELIN, O. KIVILUOTO, R. HONKANEN & S. SANTAVIRTA

Department of Orthopaedics and Traumatology, Helsinki University Central Hospital, Helsinki, and Department of Public Health Science, University of Kuopio, Kuopio

A total of 27,288 patients were treated in the Casualty Department of the Department of Orthopaedics and Traumatology, Helsinki University Central Hospital, during the 12-month period under investigation. Of these patients, 2,493 had a sports injury and 591 had sustained the injury during a competition. The age of these 2,493 patients averaged 26 years as compared with 46 years in the women and 33 years in the men who had other injuries ($P < 0.001$). Furthermore, it would appear that experienced sportsmen older than 25 years have a lower risk of injury than those in the age group between 15 and 24. Men seem to suffer more sports injuries than women. Thirty-four per cent of the competition sports injuries and 36 per cent of the leisure sports injuries were sustained during the winter months, January, February and March ($P < 0.001$). The site of the injury in sports accidents was in the lower extremities in 50 per cent of the patients as against 31 per cent in other patients ($P < 0.001$). Patients with sports injuries had more distortions ($P < 0.001$) and dislocations ($P < 0.001$) than other patients. Sports injuries were treated by immobilization of a joint in 50 per cent of the patients; in other patients this mode of treatment was applied in 28 per cent of the cases ($P < 0.001$). Six per cent of those with sports injuries were admitted as inpatients to the Department of Orthopaedics and Traumatology for further treatment.

LATERAL AND/OR MEDIAL RELEASE AND DEBRIDEMENT OPERATION IN THE TREATMENT OF CHONDROMALACIA PATELLAE ARTHROSIS OF THE KNEE AND PERSISTING POSTOPERATIVE PAINS (FILM)

K. JAAKKOLA, M. SALMI, T. E. SORVARI & A. U. ARSTILA

Department of Surgery, District Hospital of Selkämeri; Department of Cell Biology, University of Jyväskylä, and Department of Pathology, University of Kuopio.

A 15-minute colour film was presented showing the clinical examination and operative procedures involved in the treatment of chondromalacia patellae. The main aims of the operations were (1) release of a compressing inner patellar "belt", (2) removal of obstacles on the sliding surfaces and (3) debridement of dead cartilage and synovial thickening. In addition, in order to encourage the formation of new cartilage and to release intraosseal pressure several Pridie's holes were drilled into the subchondral bone. So far approximately 100 patients have been operated on using this technique. The detailed results of these operations will be published later.

DIFFERENTIATION AND OSTEO-CHONDROGENIC POTENCY OF PERIOSTEAL CELLS: IN VITRO AND IN VIVO STUDIES

M. POUSSA, S. ALHOPURO, L. SAXÉN & V. RITSILÄ

Orthopaedic Hospital of the Invalid Foundation, Helsinki

In previous investigations several authors have emphasized the importance of vascularization and the capillary endothelium in osteogenesis. Our experiments, in which free periosteal grafts in muscle and other well vascularized milieux have produced cartilage which has later changed into bone, have confirmed these observations. In order to investigate the behaviour and fate of periosteal cells in avascular conditions, periosteal grafts were cultured in Basal Medium Eagle according to the Trowell method, or transplanted into the synovial fluid of a rabbit knee joint.

In the tissue culture, fibroblast proliferation occurred within a few days. At 3 weeks, cell accumulations representing centres of chondrification were seen, and at 4 weeks occasional bony spiculae were evident. In the synovial fluid there was a rapid proliferation of the periosteal cells and an increase in the size of the graft. At 3 weeks chondrification had occurred in the trans-

plant. Ossification was, nevertheless, not observed in this fluid avascular environment.

DISLOCATION OF THE ACROMIO-CLAVICULAR JOINT

S. VAINIONPÄÄ, P. KIRVES & E. LÄIKE

Kotka Central Hospital, Kotka

Forty-five patients were operated on in the period from June 1, 1969 to May 31, 1978 because of complete acromio-clavicular separation. The follow-up examination was performed in autumn 1979, an average of 4.8 years after the operation. The 36 men who agreed to the examination had a mean age at operation of 34.5 years.

The acromio-clavicular dislocation in the 36 patients was treated by the following operations: A-O cortical screw in 25, two Kirschner wires in 5, a wire loop in 3, repair of ligaments by Henry's procedure in 2, and late resection of the distal end of the clavicle in 1.

Attention was given to subjective symptoms, the clinical state, radiological evidence of dislocation without and under stress, osteoarthritis and soft-tissue calcification.

The subjective result was good in 31, fair in two and poor in three cases.

The result was impaired by increased displacement of the joint (as shown on stress radiograms), restriction of movement over 20 degrees in three or more directions and age over 40 years at the time of the operation.

The result was not affected by osteoarthritis of the joint, 20 degrees' painless restriction of movement in one or two directions, radiologically detectable deformity or soft-tissue calcification.