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CIRCULATORY AND RESPIRATORY CHANGES DURING INTERMEDULLARY  
PROSTHETIC SURGERY

*Jan Modig, Christer Busch & Sven Olerud* (Dept. of Orthopaedic Surgery,  
Academic Hospital) Uppsala.

Patients submitted to total hip replacement surgery by the Charnley technique were studied. Operations were performed under epidural analgesia. In addition, an experimental study was carried out in which intravenous injections of acrylic monomers were administered to dogs during both controlled ventilation and spontaneous breathing. Our studies indicate that circulatory and pulmonary dysfunction associated with certain steps in the total hip replacement procedure are mainly due to platelet and fibrin deposition in the lungs, i.e. intravascular coagulation, induced by the efflux of tissue thromboplastic products. The appearance of bone marrow fat *per se* in the pulmonary circulation is of minor importance, and the release into the lungs of acrylic monomers is probably of no importance.

LATE RESULTS OF PERTHES' DISEASE IN TREATED AND UNTREATED CASES

*R. Kalén* (Dept. of Orthopaedic Surgery, Danderyds Hospital) Stockholm.

A follow-up study of 60 cases of Perthes' disease recorded at the Norrbacka Institute from 1927 to 1938 was carried out. The average follow-up period was 41 years. Thirty-two patients had not been given any treatment; the remaining 28 had been treated mainly by immobilization in abduction or by traction and the use of crutches. The two groups were investigated from the anamnestic, clinical and roentgenological point of view. A difference between the two groups was noted, with the treated group having a slight advantage. On the whole the patients were well off. Two were on invalid pension because of the hip. During the last three years only one had been out of work for a period. The poor results were strictly related to a late onset.

DISAPPEARING BONE

*J. Möller Nielsen* (Dept. of Orthopaedic Surgery II, Sahlgren Hospital)  
Gothenburg.

*L.-G. Kindblom* (Dept. of Pathology II, Sahlgren Hospital) Gothenburg.

The rare "disappearing bone" disease is characterized by spontaneous massive osteolysis and angiomatosis of one or several bones.

Two cases are reported, a 34-year-old man and a 2½-year-old boy, showing widespread osteolytic destruction of the costae and cervical vertebra and the ilium respectively.

Biopsy from the involved bones revealed an overgrowth of small thin-walled blood vessels; later the bone in the boy was transformed into a capillary-rich fibrous tissue. Both cases were treated by irradiation. New bone was formed in the lesions after this treatment.

For an accurate diagnosis of the disease a combination of the clinical and the radiographical picture and a histological examination of biopsy material is essential.

#### SUBCHONDRAL PRESSURE MEASUREMENTS BEFORE AND AFTER TIBIAL OSTEOTOMY FOR OSTEOARTHRITIS OF THE KNEE

*Ian Goldie, Hakon Wetterquist & Olle Renberg* (Dept. of Orthopaedic Surgery II, Sahlgren Hospital) Gothenburg.

In osteoarthritis of the knee there is an interference with hemodynamic events. Increased intramedullary pressures can be registered, which may cause pain. Osteotomy decreases both pressure and pain.

Pressure measurements have been made in 6 normal knees and 16 knees with osteoarthritis. The latter measurements were taken before operation and 3 and 6 months after. The pressure measurements were made by inserting a Gidlund needle into the intermedullary space 2 cm below the tibial plateau. The pressure was recorded by capacitance transducers on a four-channel recorder (Mingograph).

*Normal Knees:* A wide distribution of values was recorded as previously reported by Arnoldi. Range of distribution 10–25 mmHg.

*Osteoarthritic knees (n = 16):*

*Before osteotomy:* Range of distribution 20–70 mmHg.

*Three months after operation:* 20–40 mmHg.

*Six months after operation:* 20–50 mmHg.

#### RECONSTRUCTION OF THE KNEE JOINT WITH THE FREEMAN-SWANSON PROSTHESIS

*Peter Herberts & Gunnar Andersson* (Dept. of Orthopaedic Surgery II, Sahlgren Hospital) Gothenburg.

Preliminary results were presented of 20 knee arthroplasties using the Freeman-Swanson knee prosthesis. Nineteen patients had severe rheumatoid arthritis; one patient had an advanced osteoarthrosis. All patients were studied preoperatively and postoperatively at fixed time intervals in relation to the operation. The operation was offered to those who were chair bound and to those patients who would accept an arthrodesis. The follow-up period varied from 6 to 24 months. Pain, walking ability, range of movement, flexion deformity and valgus or varus deformity combined with instability were evaluated. In an attempt to make a total assessment of the procedure 75 per cent were graded as good (pain-free, walking outdoors, range of movement from -5 to 90°, stable and varus or valgus deformity less than 10°). Twenty per cent were improved and graded as acceptable and only 5 per cent were deteriorated and graded as poor.

### ARTHROPLASTY OF THE KNEE WITH CONDYLAR ENDOPROSTHESIS (MODIFIED GUNSTON)

*L. Hult* (South Hospital) Stockholm.

*Total material:* 51 knees in 45 patients (both knees in 6 patients).

I. *21 knees operated on and given a slightly modified Gunston prosthesis* (very close to the original).

a) 18 knees with severe rheumatic arthritis, all operated both medially and laterally.

b) 3 knees with severe medial gonarthrosis with operation only in the medial condyles.

Follow-up: 1-2 years.

*Results:* Good or excellent 14

Fair 4

Poor 4

*Reop.* 2 arthrodeses (infection)

2 osteotomies

1 loosened tibial prosthesis

1 subluxation

1 exploration

II. *30 knees operated on and given a more modified Gunston prosthesis.*

Follow-up: 18 knees, ½-1 year.

12 knees, less than ½ year (not estimated).

18 knees: a) 8 severe rheumatoid arthritis (7 operated both medially and laterally and 1 only medially).

b) 10 gonarthrosis (9 medially and 1 laterally).

*Results:* Good or excellent 16

Fair 2

Poor 0

*Reop:* 0

*Conclusions:* The preliminary results of knee arthroplasty with a condylar prosthesis in rheumatoid arthritis and gonarthrosis are very promising and of the same order as TRA on hips with the Charnley prosthesis. Our modification of the Gunston prosthesis makes the operation technically easier and the results safer.

### OSTEOSYNTHESIS ACCORDING TO ENDER IN TROCHANTERIC FEMUR FRACTURES

*N. Iskander* (Central Hospital) Falun.

Since Jan. 1972, the Orthopaedic Department at Falun Hospital has adopted Ender's method for fixation of pertrochanteric femur fractures. A study of 134 operated cases is discussed. The merits of this method were seen as a short operating time, little operative blood loss and early mobilization of the patients.

The study concentrated on the complications; 9.7 per cent died during the first 4 weeks, 1.5 per cent sustained wound infection, 13.4 per cent had distal nail-gliding with disability, 1.5 per cent had a relatively high rate of operative bleeding.

Regarding distal nail-gliding accompanied by disability; eight cases had to be

reoperated before complete fracture healing (6 per cent). Ten cases had the nails extracted after fracture healing.

#### ENDER PINNING OF INTERTROCHANTERIC FRACTURES

*O. Stenseth & L. Söderberg* (Central Hospital) Östersund.

Sixty intertrochanteric fractures have been treated by this method since September 1972. For the latter part of the period this method has been applied to all intertrochanteric fractures in our clinic.

The results are classified as follows:

Good	41
Fair	11
Poor	7

In spite of these not obviously brilliant results (this being partly ascribable to lack of experience), we consider the method recommendable as a routine method.

Its advantages are:

- Simplicity
- Swiftness
- Minimal blood loss
- Early ambulation