

PROCEEDINGS OF
THE NORDISK ORTOPEDISK FÖRENING'S 31ST ASSEMBLY
AND
THE BRITISH ORTHOPAEDIC ASSOCIATION'S
AUTUMN MEETING IN COPENHAGEN

AUGUST 27-30. 1962

The meeting of the 31st Meeting of the Scandinavian Orthopaedic Association was held under the presidency of A. Monberg, chief surgeon, Dept. III, Orthopaedic Hospital, Copenhagen.

ABSTRACT OF THE PRESIDENT'S OPENING ADDRESS:

First, I want to bid you all cordially welcome to the 31st meeting of the Scandinavian Orthopaedic Association and thank you for doing me the honour of electing me president of this meeting.

This congress is rather different from earlier ones, as the British Orthopaedic Association has asked us whether they could hold a joint meeting with us here in Copenhagen. To us it has been a pleasure to comply with this request which we consider a great honour.

Since I shall now soon be retiring from my orthopaedic life and resigning my duties in various organization, and since I have attended most of the meetings held since our Association was founded, it may be of interest, not least to the younger generation, to hear about the men who founded this Association.

From the beginning of this century orthopaedic speciality in Scandinavia was in the hands of a few people who were, I might say, autodidacts. The authorities afforded very little help to crippled and disabled persons, and bandages, corsets, and splints were delivered from only a few makers of surgical appliances with very little expert knowledge. Iron supports were generally made by the local blacksmith. In fairness, I must say that I have seen a number of these appliances which proved satisfactory, but on the whole the development was in a primitive stage.

In this country, as early as 1872, a retired clergyman, *Hans Knudsen*, had founded the society "which takes care of crippled and maimed children", the later Society and Home for Cripples. The great idea which inspired him was to build up a close collaboration between the surgical treatment, training and education of the unfortunate patients who were unable to take part in everyday life and unable to earn their living because of congenital or acquired disablement. But as it was difficult to procure the means needed to carry out these plans, there was a limit to the help which could be rendered.

The Society and Home for Cripples has always been and still is a private institu-

tion, but with a considerable Government subsidy, so that the solution of this constructive work has now become a Government concern.

The surgical work was carried out *free by interested surgeons* (*Barfod, Sigfred Levy, Ipsen, and Drachmann*), until in 1908 Dr. *Panum* became surgeon-in-chief. In 1919 he was succeeded by *Guildal* who was, up to 1950, the guiding spirit of the great development which took place during this period. *Guildal* was also lecturer in orthopaedics to the University of Copenhagen, where a professorship was not founded until 1957. A second professorship was founded in Aarhus in 1959.

In Stockholm, *Patrik Haglund* became professor of orthopaedics in 1913. There have been great advances in the development of orthopaedics and the care of cripples in Sweden which now has 4 homes for cripples, 5 professorships, and in the central hospitals throughout the country 30 orthopaedic departments.

In Norway a home for cripples, "Sophie's Minde", was founded in 1902. This was an extension of the school for crippled children run by the *Fleischer* sisters in Oslo since 1892. It is still owned by a foundation, but it is run by the Government. It is a combination of a training school, orthopaedic department, and workshops.

In Finland, the credit for organizing and centralizing the treatment and training of civilian and war cripples is *Fabian Langenskiöld's*. As in the other Scandinavian countries there were scattered training schools for the disabled which gradually were being extended by the large number of war cripples resulting from the belligerent dealings with the neighbour. However, it was not until 1940 that the Disablement Foundation was established in order to centralize the treatment and training of invalids and cripples, whereby this became a Government concern.

In 1926 an event took place in Trondheim which was of the utmost importance. At a joint meeting of the various sections engaged in the care of handicapped persons—the blind, the insane, the deaf, and the crippled—the representatives of the cripples segregated and formed a Scandinavian association which was called the Scandinavian Association for Cripples (*Nordisk Vanføreforening*). This proved of inestimable importance, as it collected the scattered training schools for cripples and attached to them orthopaedic departments.

But prior to this meeting the development had been discussed by interested surgeons, the Scandinavian Orthopaedic Association being founded by *Bülów-Hansen* of Norway, *Patrik Haglund* of Sweden, and *Slomann* of Denmark.

Let me now try to give you an impression of these three leading personalities from the early years.

Bülów-Hansen, senior surgeon of Sophie's Minde, Oslo, until 1934, was the optimist, but nevertheless realistic in the methods of treatment which he used in order to obtain the best possible results under the prevailing conditions. However, difficulties abounded, among others the long distances to Oslo, the limited means of communication, and the impossibility of defraying the considerable travelling expenses. *Bülów-Hansen*, therefore, soon started using bone-stabilizing operations in order to avoid the use of bandages which often needed repair and renewal. It may be mentioned that in the treatment of congenital clubfoot the method was wedge resection, even at a very early age. His reasoning was that it was most important to the child to be supplied with a sole to walk on, a foot which would not need after-treatment and follow-up. We who can remember him shall never forget his gesticulations when he gave his lectures, his youthful face with the martial-looking moustache. He was a characteristic, artistic personality of a cheerful disposition.

The second founder was *Patrik Haglund*, professor of orthopaedics in Stockholm from 1913 to 1937, a magnificent figure of a man, taking an idealistic attitude to the work which he undertook. He has left an enormous number of publications—about 300—on subjects within orthopaedics and the care of cripples, but also on subjects such as physics and astronomy. *Haglund* was a scholar of German orthopaedics. Let me mention his bulky publication “Die Prinzipien der Ortopädie” (1923) and his numerous papers on the treatment of the sequelae of poliomyelitis. His papers often contained philosophical reflections, and his descriptions were characterized by great thoroughness and meticulous care. *Haglund* was the founder of *Acta Orthopaedica Scandinavica* and on the whole embodied the spirit of scientific development in Scandinavian orthopaedics. We remember his peculiar way of reading a paper. He walked to and fro on the platform, and if there was a side door or corridor, he would go out, talking, and come back, still talking, so it was not always equally easy to follow him. His contributions to the discussions were always well-founded, usually marked by strong points of view, but suddenly you might hear his youthful laughter which bore witness of his affection for everything and everyone to whom he felt attached. A great figure within Scandinavian orthopaedics and care of cripples.

The third founder was *Herman Slomann*, a very intelligent man but of a somewhat depressive disposition. It was typical of him that after having started his hospital career in Vejle, Jutland, he found that this sort of work, seeing patients at all times of the day and night, was too much for his temperament. He wanted time to make therapeutic plans. Owing to this forced work he went to Copenhagen in 1901 and established an orthopaedic clinic with 20 beds. This clinic was highly esteemed, not only in Denmark, but throughout Scandinavia. The fact that four doctorate theses were written in this clinic bears witness to his inspiring, scientific talents. Daily collaboration with *Slomann* was enriching, his examination and treatment planning being very thorough. His reflections regarding possible complications often bore the marks of his rather depressive disposition.

I want to mention also *Guildal's* contribution to the congresses. This handsome and stately man had linguistic ability, friendliness, charm, and a gift for sober evaluation—evident both in lectures and discussions—which made him popular everywhere. Like the founders of the Association *Guildal* was made honorary member.

Brief mention must be made also of *Sv. Johansson*, chief surgeon to Sahlgrenska sjukhuset, Gothenburg. *Sv. Johansson* was the first secretary general of our Association. He achieved great things in the treatment of fracture of the neck of the femur.

And let me mention also our present Scandinavian honorary members, *Henning Waldenström* and *P. G. K. Bentzon*. *Waldenström* succeeded *Haglund* as professor of orthopaedics in Karolinska Institutet, Stockholm. *Bentzon* was secretary general, editor of the *Acta Orthopaedica Scandinavica*, and on the whole took such a great interest in the welfare of the Scandinavian Orthopaedic Association.

This brings me to my own generation, or rather the next of which we have such a distinguished representation to-day. We are looking forward to hearing, in the next few days, your papers and discussions which will no doubt afford a vivid picture of present days orthopaedics.

TRAITS IN AMPUTATION SURGERY AMONG CIVILIANS
DURING THE PERIOD 1930-1960.

by *Ralf Lindholm* (Helsingfors)

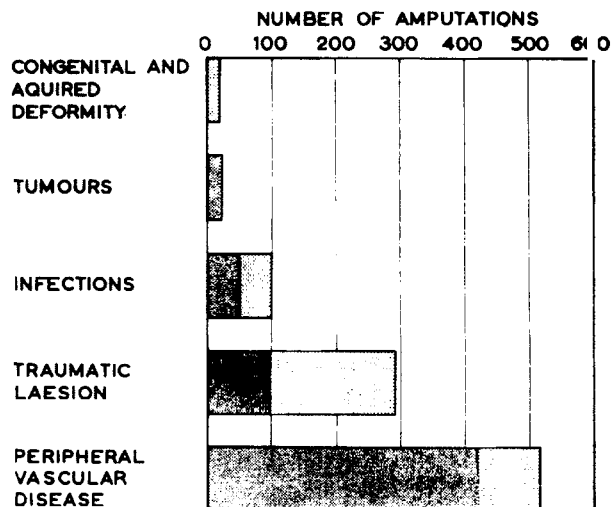
Mainly with a view to detecting changes in composition of series, amputation characteristics and philosophy, the author has made a survey of the case records on nearly one thousand clinical amputations. The operations were performed at the surgical department of the Maria City Hospital, Helsinki-Helsingfors, a unit dealing with patients in need of emergency as well as planned surgery. The area served by this hospital is the capital city, with somewhat under half a million inhabitants by the end of the period surveyed.

Interest has been focused upon questions of operative indications, age and sex, frequency and level of surgery, primary operative risk and evaluation of trends revealed in these in the course of time.

Of all amputees, 2/3rds were men. More than 50 per cent were aged between 50 and 80 years at the time of surgery. The rate of amputations in relation to all surgery done makes 6 to 20 per thousand, the latter number being indicative of the figures of later years. The annual frequency of amputation for peripheral vascular disease has been estimated at about one amputation per ten thousand inhabitants.

TABLE 1

**Amputations on 986 limbs performed
at the Maria City Hospital Surg. Dpt.,
1930-1960, by indications.**

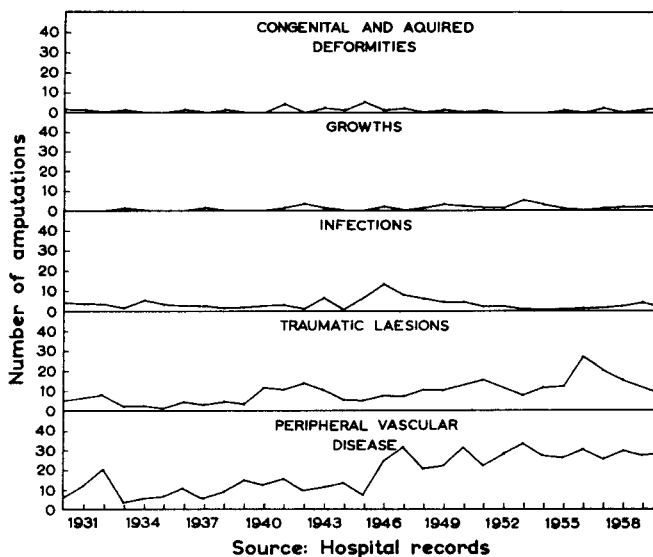


Source: Hospital records

MINOR AMPUTATIONS 
MAJOR AMPUTATIONS 

TABLE 2

Amputations performed at the Maria City Hospital Surg. Dpt., 1930-1960, by indications.



Only 12 per cent of the limbs subjected to amputation have been upper extremities, while the majority, or 78 per cent, have been lower extremities. In terms of risk of death in the postoperative period of hospital stay the figures appear to indicate the importance of underlying disease as a cause of failure rather than operative trauma and stress.

A study of chronologic sequence has revealed a significant rise in the mean age of persons undergoing amputation for vascular disease and infection and an actual as well as relative increase in the number of operations for vascular disorders and traumatic lesions.

(To be published later in more detail in the *Acta Orthopaedica Scandinavica*.)

KITON FAST GREEN AS AN AID TO THE DIAGNOSIS OF TRAUMATIC SOFT TISSUE INJURIES TO THE ARMS AND LEGS

by *Arne Kjellgren* (Gothenburg, Sweden)

Judging the vitality of laceration injuries and deep second degree burns on the extremities offers not infrequently considerable diagnostic difficulty even for the most experienced surgeons. Various methods have been initiated to obtain an objective method of investigation. In fact only the sensitivity test in burns has proved of value in clinical practice but it is beset by fundamental weaknesses. The method published by Tempest in 1959 of vital colouring with Kiton fast green er disulfine blue seems to provide a valuable contribution of the diagnosis. The colour substance is injected intravenously. Vital tissues, i.e., those with sufficient blood

supply are coloured intensive green or blue, while those with serious circulation disturbances are coloured weakly and unevenly or not at all. The colour medium has no side effects. Some typical cases are reported.

DISCUSSION:

Håkan Brattström (Lund, Sweden):

At the Orthopaedic Clinic in Lund we have tried to use the medium in order to obtain a guide for determining the amputation level in senile gangrene. Our experience is still small but our impression is that the medium, the use of which is based on skin circulation, easily gives a too favourable picture. The deep circulation is worse in these patients than the beautiful green colouring may give the surgeon cause to believe. Therefore the examination must be critically evaluated so that an amputation is not performed too far distally.

Arne Kjellgren:

Vital colouring with Kiton fast green was carried out in some cases of diabetic gangrene. My preliminary conclusion is that the method has not provided any important aid in determining the amputation level.

OSTEOCHONDRITIS DISSECANS GENU

by *Lars Mårtenson* and *Sven Scheller* (Gothenburg, Sweden)

SIDE DIFFERENCE IN SIZE OF OSSIFICATION CENTRES AND IN BONE LENGTH IN JUVENILE GONARTHROSIS

by *Merete Brattström* (Lund, Sweden)

About 50 % of juvenile rheumatoid arthritis starts as an isolated gonarthrosis. After months or years a progression with engagement of other joints makes the diagnosis possible.

By conventional judgement of X-ray pictures of knees from these patients rather insignificant changes such as slight osteoporosis and lowering of cartilage are usually found. It is easy to underestimate the pathological process, which if it remains untreated may have serious consequences for the future function of the knee. (Persistent contracture, subluxation, valgity.)

Here an attempt is made to measure the X-ray changes in 12 cases of unilateral or asymmetrical gonarthrosis, collected at the Rheumatic Clinic, Lund (Childrens' Department).

The treatment of the patients was uniform: bed rest, stretch and physical training interrupted by 1-2 week periods of plaster till full correction of flexion contracture was obtained. Medicine: Salicylics. Mean time at hospital was 6-8 months. X-ray controls were made regularly comprising frontal and side exposures (knee stretched, semiflexed respectively) and longimetry by the orthodiagraphic method.

The relative size of the femoral condyle was calculated by measuring epiphyseal breadth and average height of medial and lateral condyle on the frontal picture.

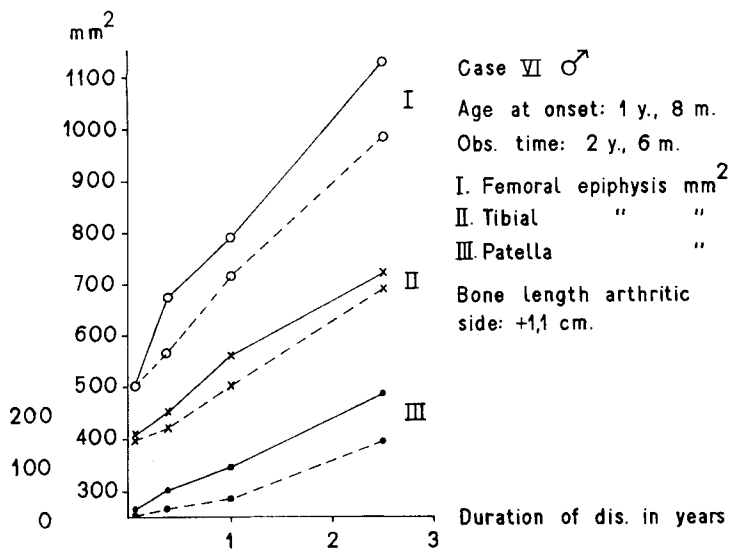
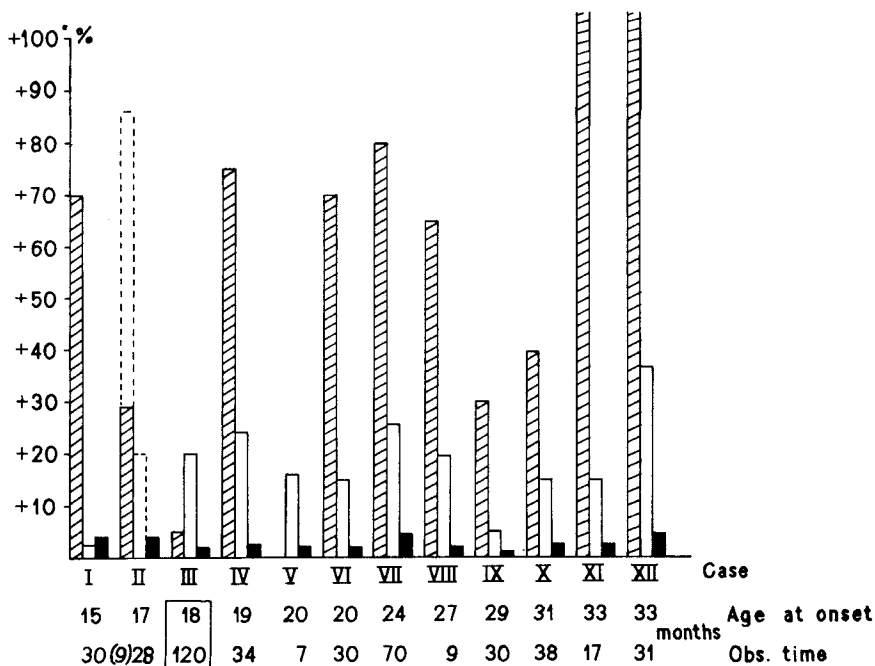


Fig. 1.

A typical case with 2.5 years duration of arthritis. Bilateral symmetry is seen at time of onset. The side difference is significant on X-ray picture taken after 4 months.



Side diff. in % arthritic—'sound' side (12 cases).

1. ▨ Patella. 2. □ Femoral epiphysis. 3. ■ Bone length.

Fig. 2.

The side difference in ossification (% of healthy side) at the end of observation time.

The patella was measured on the side picture, maximal length and breadth at right angles. Bone length was defined as total osseous part of femur and tibia measured separately.

In this material an overgrowth of femoral epiphysis of 5–40 %, and of patella of more than 40 % was regularly found together with an elongation of the “arthritic” leg of 0.5–2.5 cm.

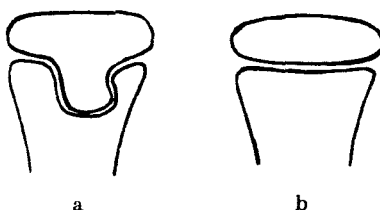
TWO CASES OF ABNORMAL SKELETAL GROWTH FOLLOWING TRAUMA

by Poul Lütken (Aalborg, Denmark)

With reference to a report on skeletal growth at the Helsinki meeting in 1956 an example was demonstrated of conversion of skeletal curves having a small radius to curves having a larger radius, pronounced bone growth in the concavity and absorption from the convex aspect.

X-ray films were presented of a child aged 9 years with a history of aseptic osteomyelitis following intraosteal blood transfusion at the age of 6 weeks. A large necrosis appeared proximally in the diaphyseal centre of ossification on the right tibia.

Although the necrosis involved the central parts of the growth zone, longitudinal growth as well as growth in thickness continued. The films show that ossification took place from the proximal epiphyseal centre, replacing the missing diaphyseal ossification in the destroyed area. Thereby, the non-ossified growth zone acquired an abnormal situation (cf. the sketch).



- (a) Abnormal situation of epiphyseal line in the anterior half of the proximal tibial end.
(b) Normal appearance.

The boy has been followed-up for 9 years, and growth continues. The site of the epiphyseal line was shown on tomographic cuts.

A similar replacement of epiphyseal ossification in an area which normally ossifies from the diaphyseal centre may be encountered as a normal variant at the upper ridge of the neck of the femur, described by me at the meeting in Oslo in 1960. This variant is popularly known as an “elephant hip”.

Finally, the radiographic appearances of total epiphysiolsis of the distal femoral epiphysis in a 10-year-old boy. In the local hospital he had been treated primarily by absolute anatomical reduction.

Five years later I saw the boy. Owing to total inhibition of growth at the dorsal edge of the epiphysis and continued growth at the anterior aspect of the femur, the

epiphysis had rotated almost 90° in the direction of flexion. There was only a negligible extensor defect in the knee and a shortening of 2 cm. The therapeutic problems were briefly discussed.

(A somewhat extended and modified communication is being prepared for publication in *Acta Orthopaedica*.)

EXCITATORY AND INHIBITORY REFLEX MOTOR EFFECTS FROM THE PARTIALLY RUPTURED MEDIAL COLLATERAL LIGAMENT OF THE KNEE JOINT

by *B. Stener* and *I. Petersén* (Gothenburg, Sweden)

A large increase in tension can be brought about in the *uninjured* medial collateral ligament of the knee joint in man *without* the elicitation of activity in sartorius, semimembranosus or vastus medialis, i.e. muscles capable of actively supporting the ligament's lateral stabilization of the joint (*Petersén & Stener* 1959). With the ligament *injured*, quite different results are obtained; the present paper provides an account of this phenomenon.

Thirty patients with partial rupture of the medial collateral ligament of the knee joint (stability intact) were studied, using electromyography, to determine the effect on the musculature of the thigh of an increase in the tension in the ligament. Mainly, this increase in tension was brought about by abduction at the joint, and by passive extension beyond what the patient could achieve (the majority of patients had impaired active extension).

In all the patients activity was evoked in sartorius in response to the increase in the ligament's tension, and in most of them in semimembranosus as well. On the other hand activity was only exceptionally evoked in vastus medialis; instead an inhibitory effect on the activity in this muscle was observed if abduction was performed while the patient voluntarily contracted quadriceps.

Pressure at the site of the rupture led to the same results as an increase in tension in the injured ligament. Pressure and an increase in tension both evoked pain at the site of the rupture. Several factors, discussed in detail, indicate that the effect demonstrated was reflexly induced and issued from the ligament itself and hence can be described as a ligamento-muscular reflex. This reflex from the *injured* ligament probably does not originate in tension receptors but in *pain* receptors.

As far as therapy in a case of partial rupture of the medial collateral ligament of the knee joint is concerned, it has long been recognized how important it is that the patient *overcomes the impaired extension* at the joint by active use of quadriceps. The present study confirms the need for such training of quadriceps; the ligamento-muscular reflex from the injured ligament is not so organized that this muscle will be trained automatically.

(A detailed account of this investigation will be published in *Acta Chirurgica Scandinavica*.)

MENTALITY AND DYSTROPHY

by *H. Ehlers* and *L. Zachariae* (Copenhagen)

"Dystrophy"—or better "posttraumatic dystrophy"—is taken to mean the state which may arise following injuries of or surgery on a limb and which is characterized by oedema, fibrosis, and stiffness as well as various vegetative disturbances.

It is a serious complication which may entail permanent sequelae, but despite numerous investigations its exact cause and pathogenesis remain unelucidated and constant matters of discussion.

It was the object of the present study to try to elucidate whether the mental state does exert influence upon the occurrence of the dystrophic syndrome.

Preoperatively, all the patients were seen by the psychiatrist who assessed their character and gave a statement containing a presumption regarding the postoperative course. The surgeon was not cognizant of the contents of this statement, and all the patients were subjected to the same surgical procedure and after-treatment. A few months later, the postoperative course presumed by the psychiatrist was then compared with the real course. So far, this study includes 33 male patients operated for Dupuytren's contracture.

As already mentioned, the material comprises 33 males. From the table it will be seen that 30 out of 33 had a postoperative course in conformity with that expected by the psychiatrist.

Psychiatric assessment	No. of cases	Presumed postoperative course	Actual postoperative course conformable	Actual postoperative course not conformable
Normal	5	Uncomplicated	5	
Unstable	14	Uncomplicated	14	
Demented and arteriosclerotic	5	Uncomplicated	5	
Aggression inhibited Defeatist attitude Self-pitying Perfectionistic Non-sthenic	5	Short-lasting difficulties in restitution	3	2
Aggression inhibited Martyr type Self-pitying Agressive Self-opinionated Ambitious Hysterical Sthenic	4	Long-lasting severe complications	3	1
Total number	33		30	3

On the basis of the present studies it may be concluded that an interested psychiatrist who has familiarized himself with these special problems can foretell with great likelihood whether postoperative complications—in the form of oedema, fibrosis, and stiffness—are going to occur in a candidate for surgery on Dupuytren's contracture. This is of great importance, both in fixing operative indications and in trying to penetrate the aetiology and pathogenesis of the condition called dystrophy.

FRACTURES OF THE UPPER END OF FEMUR IN AN URBAN POPULATION

by P.-A. Alffram (Malmö, Sweden)

Owing to the continuing changes in the age distribution of the population, complaints relating to old age have become more and more dominant. One of these complaints is the fracture of the upper end of the femur (medial and trochanteric collum fractures).

During the years 1949–1961 1,635 cases of such fractures were diagnosed amongst the 210,000 inhabitants of the city of Malmö. Amongst women who formed 75 % of the patients medial fractures were about twice as common as trochanteric fractures. Amongst men on the other hand both fracture types were almost equally common. The average age of the whole series was 71.8 years, 4 years more for women than men and 2½ years more for trochanteric than medial fractures.

87 % of the female patients and 52 % of the males had incurred their fractures as a result of moderate force i.e. falls to the ground etc. while 3 % of the women and 29 % of the men incurred their fractures through traffic accidents of varying types.

The fracture incidence on every 5 year group showed a considerable greater increase with increasing age and a calculation reveals plainly that about 10 % of all women and 5 % of all men attaining 80 years of age have had fractures of the upper end of femur.

A comparison of the incidence of female fracture cases in Malmö and Dundee, Scotland (*Stewart*, 1958) showed a significantly higher incidence in Malmö. A corresponding comparison between the conditions in Malmö and Gothenburg (*Mårtensson*, 1962) showed on the other hand no difference in the fracture incidence.

During the investigation period the number of fracture cases diagnosed annually was tripled while the population increased by 20 %. Statistical analysis showed that during this period a real increase in incidence occurred beyond that expected owing to changes in the age and sex distribution. This increase was mainly to be attributed to the trochanteric fractures. There was no corresponding increase in the incidence of severe force or of diseases especially favourable to fractures amongst the patients (hemiplegia, poliomyelitis with paresis, polyarthritis, radiological treatment of the small pelvis etc.).

The investigation shows the important difference which exists between the sexes regarding disposition towards fracture of the upper end of femur and also gives an indication of the existence of geographical differences in the incidence of such fractures.

References:

- Mårtensson, Lars:* Svenska Läkartidningen 59: 3185, 1962.
Stewart, I. M.: The Medical Officer 100: 100, 1958.

OPERATIVE TREATMENT OF RECIDUAL DISLOCATION OF
THE SHOULDER JOINT

by Stig Willner (Linköping, Sweden)

(To be published later in the Acta Orthopaedica Scandinavica.)

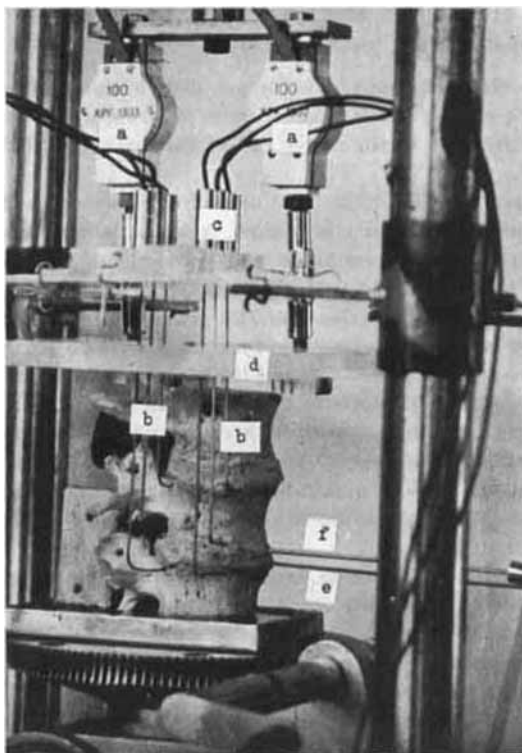


Fig. 1.

TECHNICAL PROBLEMS IN LUMBAR FUSIONS

by *Spante Rolander* (Gothenburg, Sweden)

Chronic low back pain is a disease of vast medical and social importance and a central orthopaedic problem. Clinical experience shows that in a great many cases it is possible to eliminate the pain by spinal fusions. But in spite of 50 years' experience of fusions the opinions of the indications and results are very much divergent.

In this situation the author has found it an urgent necessity to try to throw light on the mechanical efficiency of lumbar fusions by means of experimental work.

In fresh autopsy-specimens it is possible to simulate healed fusions of different kinds by fixing the vertebrae in plastic glues, the strength of which exceeds that of bone. In a compression testing machine the specimens are loaded during simultaneous measurement of the intradiscal pressure. The values are compared with those obtained after the fusion is removed. It is obvious then that the segmental motion is not prevented and the disc is definitely not unloaded by the fusion. Only when the load is applied between the axis of motion and the fusion mass—viz. in a dorsal fusion with the specimen in dorsiflexion—is the intradiscal pressure appreciably decreased. This means that even if the fusion is sufficiently strong, the pedicles, specially the intra-articular portions, are too flexible to withstand the load. The same

thing is easily demonstrated if the disc is excised. Then the anterior borders of the vertebral bodies are bent together by a load of less than 50 pounds, but if the gap produced by excising the disc is big enough, the intra-articular portions fracture.

If a solid fusion has the ability to eliminate pain caused by the disc, the reason could not be a total elimination of motion. It is, however, obvious that the pattern of motion is definitely changed by the fusion. In order to investigate this change and to obtain more exact knowledge of the physiological and pathological pattern of lumbar movements the author constructed the device, the essentials of which are shown in the figure (Fig. 1).

The specimen is fixed in a compression apparatus where the load can be applied at different angles. It is assumed that the axis of motion passes through the nucleus. Thus the loading force (a) as well as the movements (b) are measured on both sides of the axis and simultaneously recorded electronically (a, c). It is possible to load the specimen so that the resultant of the applied forces crosses the axis of motion. At this moment the disc is vertically loaded, which is indicated by a uniform compression of the disc and by a minimal intradiscal pressure (e). The compression bar (d) permits movements of the disc in the horizontal plane, which are recorded by the gauge (f) placed against the anterior border of the vertebral body.

CONGENITAL SYNOSTOSIS IN THE CERVICAL SPINE

by *Poul A. and Lone Gjörup* (Copenhagen)

The material comprises 76 cases and it is estimated that the syndrome is found in 0.2 per thousand in the population of Copenhagen. The synostosis is most frequently found in the upper part of the spine, in 13 cases the cervical spine is completely synostosed. Other vertebral deformities in the whole spine are found in about 50 %, scoliosis in 71 %, Sprengel's deformity in 16 % of the cases.

(To be published later in a more detailed form in the *Acta Orthopaedica Scandinavica*.)

EOSINOPHILIC GRANULOMA

by *Kåre Nyholm* (Copenhagen)

In order to get an impression of the course and prognosis of disease, the history of 14 children has been reviewed. 6 were diagnosed as solitary, 8 as multiple granuloma. The primary admissions were to different specialized departments, as a result of different complaints from varying localization. The diagnosis was made by histological examination in all but one case. This security in histopathological diagnosis is explained by the early phase of disease, in which the histological features are most typical.

The roentgenographic picture of the single focus presented a round, oval or irregular rarefaction in bone, surrounded by a sharp demarcation line. This finding was most prominent in the Calvarium and other flat bones, while localization in long bones often resulted in dilatation of corticalis producing bonecysts or breaking through of corticalis followed by some sclerosis and healing.

The treatment has been surgical intervention with excochleation of the pathological tissue or X-ray irradiation of single foci with small dosis (Total dosis 75-900 r). 7 patients were operated on for osteolytic defect in theca cranii. 4 of these defects

were completely healed and filled with normal bone tissue, in 3 of the cases inside a year. The surgical treatment was in some of the cases supplemented by postoperative X-ray irradiation. In 2 cases the defects were primarily repaired by placing a plastic plate in the diseased bone, while the last one obtained a similar prosthesis 9 years later, because of unchanged defect with periodical headache as complaint.

Local X-ray irradiation of 26 single foci resulted in 15 with complete healing inside a year, while all were healed within a follow-up period of 5 years. Although the influence of irradiation could be accepted as a cooperating factor in some of the cases, no certain conclusion could be drawn from the treatment especially not when 8 other foci showed a completed spontaneous healing inside a year, and 1 inside a period of 3 years.

In conclusion we find that eosinophilic granulomatous processes localized to the osseous system, solitary or multiple, are a benign disease, which run a course of limited time, rather independent of treatment. An early histological examination can serve the diagnosis, while later it often confuses the diagnostic considerations. Operative interference with excochleation of the pathological tissue or X-ray treatment with small dosis can probably advance healing, but the spontaneous course often complicates a certain impression of effect of treatment.

VITAMIN D RESISTANT RICKETS

by *Hans Bohr* (Copenhagen)

Four cases of vit. D. resistant rickets from the Orthopaedic Hospital of Copenhagen are presented. The first two cases are boys born in 1945 and 1958 respectively, and

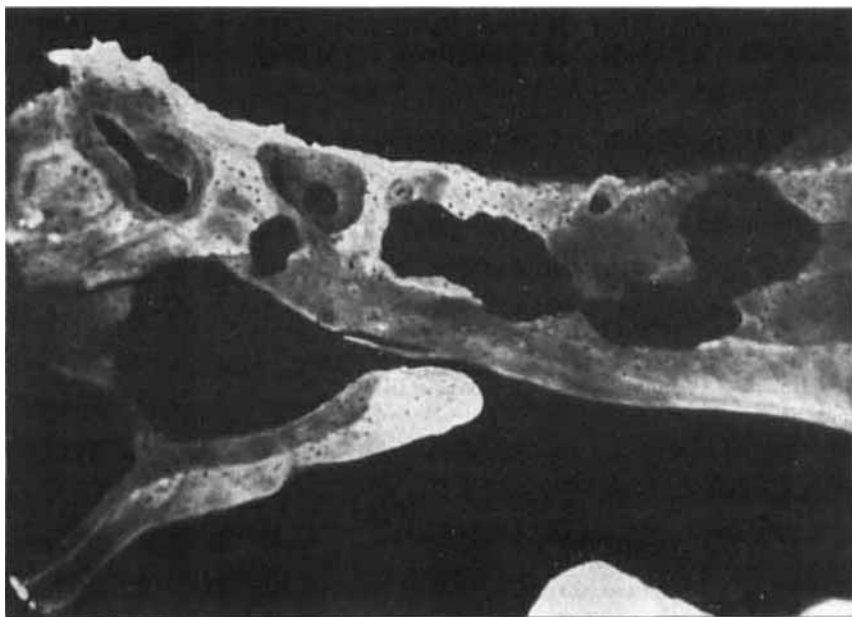


Fig. 1.

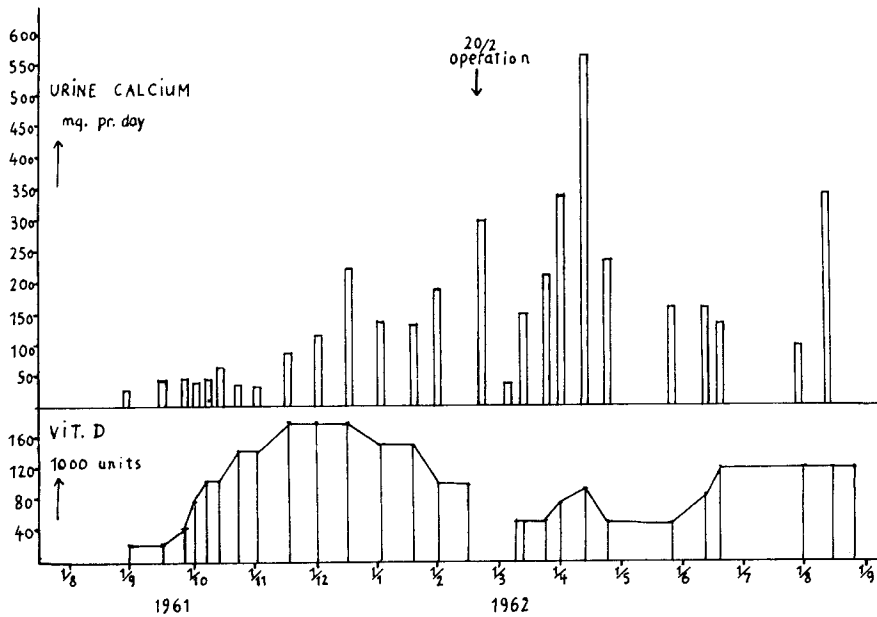


Fig. 2.

seen at the age of two years. There was no disposition for bone disease in the families. As the rachitic symptoms did not respond to ordinary doses of vit. D., they were transferred to the pediatric department of Rigshospitalet and treated with doses of about 100 000 units of vit. D., gradually reduced to 50 000 units pr. day as maintenance dose. Normal development has occurred on this treatment, and the micro-radiographic (m.r.gr.) picture of a bone biopsy from the older boy in 1960, given on Fig. 1, shows that the bone structure has become essentially normal.

Of the last two cases, both women and relatives, the younger, born in 1947, had correction osteotomies on both femora and the right tibia at the age of 9. The deformity was much improved, but recurred at the age of 14. A thorough investigation including m.r.gr. investigation of bone biopsy, gave the diagnosis, and treatment with high doses of vit. D. was started. Fig. 2 shows the increased excretion of calcium in the urine during treatment. In Febr. 1962 correction osteotomies were performed on both tibiae, but m.r.gr. examination showed that the rachitis changes persisted, and no uptake of Tetracycline in the bone could be demonstrated. The older woman, born in 1904, and an aunt to the one mentioned before, had correction osteotomies performed on both femora at the age of 19. The deformities recurred and when she was seen in 1961 she had pains in different joints. She was treated with 100 000 units of vit. D. daily and had some relief from her pains. A new biopsy 10 months later showed on m.r.gr. examination that normalization of the bone structure had occurred and correspondingly an uptake of Tetracycline could be shown.

References:

- Bohr, H. & Dollerup, E.: X-ray microscopy and X-ray analysis. Proceedings of the second international Symposium, Stockholm 1958, p. 184.
Engfeldt, B. & Zetterström, R.: A.M.A. Arch. Pathol. 59: 321, 1955.