SOUTH AFRICAN ORTHOPAEDIC CONGRESS

The 5th Congress of the South African Orthopaedic Association* was held in Durban on 13-18 August 1956. The meeting was presided over by Mr. C. T. Moller, the President of the Association. Distinguished guests from outside South Africa included Sir Walter Mercer, President of the Royal College of Surgeons of Edinburgh, Dr. Steele F. Stewart from Honolulu, and Mr. F. Dwyer from Liverpool.

The meeting was a success from both an academic and social point of view. It was attended by 30 orthopaedic surgeons practising in South Africa and Rhodesia. A visit was made to the Umlazi Orthopaedic Tuberculosis Hospital and members were entertained at several social functions. The annual orthopaedic dinner was marked by a tribute to Mr. F. P. Fouche, the doyen of orthopaedic surgery in South Africa, who was presented with a silver salver bearing the facsimile signatures of all orthopaedic surgeons in the Association, in honour of his 70th birthday.

SYMPOSIUM ON ORTHOPAEDIC TUBERCULOSIS

Sir Walter Mercer opened the symposium by discussing the *diagnosis and treatment of tuberculosis of the hip joint*. He showed slides depicting the radiological appearances of the intra-articular and extra-articular types of hip tuberculosis, and emphasized the difference in diagnosis and treatment of these types. In the synovial types, a biopsy assists in the diagnosis and helps in treatment by decompressing the tension in the joint. Rest and antibiotics also assist in the treatment. The action and dosage of the various chemotherapeutic substances such as PAS, INH, and streptomycin were mentioned. In the extra-articular types of tuberculosis of the hip, rest by leg traction and eradication of the bony focus was advisable, and the treatment of sinuses by chemotherapy and arthrodesis of the hip by Britain's method were mentioned. A movie film showing the speaker performing a Britain's arthrodesis by the posterior approach was presented.

Mr. N. M. Thompson (Pietermaritzburg) described his results with *excision of the head and neck of the femur* in 15 cases of tuberculosis of the hip in adults who had not responded satisfactorily to rest and chemotherapy. Most of these cases were acute, with pyrexia, pain, inability to walk, and sometimes discharging sinuses. The hip is opened by the anterior or lateral approach; sinus tracts and all affected soft tissues are excised, the neck of the femur is osteotomized, and the head is scooped out. No attempt is made to dislocate the joint. The operation gets rid

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of a great deal of tuberculous infected tissue; it opens up the tissues to chemotherapeutic agents, and puts the affected acetabulum at rest, because weight bearing is now lateral to the acetabulum. A loose-fitting Thomas caliper is prescribed and gluteal exercises are practised. The patients, however, soon discard the caliper and walk with one stick. They can walk up to 6 miles if capable of re-education, but heavy patients do not walk so far. Passive movements are usually full after the operation, but there is no active abduction. Shortening is usually 1½ inches. The speaker said he believed this operation should be done in all elderly adults in whom conservative treatment had failed.

Mr. A. C. Boonzaier (Johannesburg) presented his results of *central dislocation-arthrodesis* as a radical treatment of tuberculosis of the hip joint. He had operated on 25 cases of severe tuberculosis of the hip, of which 18 were adults. There was no operative mortality and no abscesses or sinuses; and all the wounds healed primarily. Fourteen cases were healed solidly by fusion clinically and radiologically at the end of 12 months. Six cases were immobile clinically but showed evidence of non-fusion radiologically, although they were symptom-free; 2 cases had slight movement of the hip but were painless and ambulant. The other 3 cases had not returned for a final assessment.

The operation is performed as soon as the patient's general condition is satisfactory and has been improved by blood transfusion and antibiotics. Flexion contracture if present is first corrected by leg traction. A wide Smith-Petersen or antero-lateral exposure is employed, sectioning the tensor fasciae latae a hands-breadth below the trochanter, osteotomizing the lesser trochanter and detaching the muscles from the greater trochanter. Every single bone-abscess in the femur and acetabulum is ablated, and the entire capsule and all granulation-tissue is excised. The sclerosed bone of the head, neck and acetabulum is broken down, but the calcar femorale is left intact. The head and neck are shaped by osteotomes, and Charnley's reamers are used to drill a close-fitting hole in the acetabulum. If the acetabulum is ruined by the disease or the debridement, a hole is made in the pelvis a little more proximally. The head and neck are centrally dislocated into the pelvic hole, and multiple boiled cadaveric bone-chips are laid across the fusion site. A full spica is applied for 3 months and another spica from the nipple line to above the knee for another 3 months. Weight bearing can be allowed in this latter spica if radiological union appears to be progressing satisfactorily. Otherwise non-weight-bearing should be practised for a total of 6 months. The triad of PAS, streptomycin and INH are given for 12 months.

It is felt that this debridement and fusion operation should be practised in all adults and children with grossly destroyed tuberculous hips.

X-ray slides were shown of nearly all the cases operated upon.

Mr. C. J. Kaplan (Durban) presented his observations on *local therapy in skeletal tuberculosis*. He illustrated by means of slides and X-rays the additional efficiency of parenteral and intra-articular antibiotics and chemotherapy, in contrast with the previous treatment of rest, diet and sunshine alone. The former periods of hospitalization extending over 3 or 4 years was more than halved, and sinuses and secondary infection were almost completely eliminated.

Streptomycin, ½-1 g., was given intramuscularly every day for 1 month, and then every 3rd day for the duration of stay in hospital.

PAS is no longer used as a routine therapy because it tends to heal tuberculous lesions by fibrosis instead of resolution without scarring.

Isoniazid (INH) is given in doses of 8-16 mg. per kg. of body weight and is supplemented with vitamin B to prevent peripheral neuritis.

Other cases were treated in addition by intra-articular injections of Streptohydrazid (a combination of streptomycin and INH) twice weekly for 3 months. X-rays were shown of tuberculous hips and knees in which painless function and useful mobility were regained after this method of treatment.

Mention was made of treatment of Pott's spine, with abscesses, by means of drainage and continuous drip-perfusion of the cavity with Streptohydrazid in saline. A case of proved tuberculosis of the flexor tendon sheaths of the fingers had also been successfully treated by this drip-perfusion method.

Mr. J. J. Commerell (Cape Town) described the *domiciliary treatment in orthopaedic tuberculosis* as practised in Cape Town and its environs. During the last 6 years 410 cases had been treated on Thomas frames and other types of immobilization in their homes. Of these 376 were cases of tuberculous involvement of spine, hips and knees.

Most of these cases were under 28 years of age. Older cases were difficult to treat at home because there was usually no one to attend to them.

District nurses visited the patients regularly to give them their streptomycin injections and INH tablets, and to inspect their frames. In 218 of these cases treatment had been continued until the disease had become arrested. The average length of treatment was 16 months for spinal tuberculosis, and 14 months for hip tuberculosis.

Over the 6-year period 4 patients died of various causes and 126 required admission to hospital for various complications or inability to continue treatment at home.

There now only remained 28 cases on Thomas frames at their homes, which proved that a large back-log of skeletal tuberculosis had been cleared up by means of early diagnosis and adequate chemotherapy and rest.

Dr. H. G. Houghton (Durban) spoke on the recent trends in tuberculosis therapy, with special emphasis on pulmonary and cerebrospinal pathology. He made the following notable points:

The chronicity at the end of treatment resulted in 10% of patients with positive sputa.

PAS is no longer given as a routine.

INH is given in dosage of 15 mg. per kg. of body-weight, daily. Streptomycin 1 g. per day is also given. 10% of cases become resistant to INH and new drugs such as Neotocide and Dipasic are being tried.

Today 2,000 cases of pumonary tuberculosis in Durban are being treated outside hospital as ambulant patients.

The value of bed rest is being challenged.

The length of treatment is usually 2 years.

Calcified foci in the lung should be treated.

THE DURBAN MYSTERY OUTBREAK RESEMBLING ICELANDIC DISEASE

Mr. R. C. J. Hill (Durban) opened the discussion by describing the epidemic of a disease resembling poliomyelitis which occurred in Durban in March 1955. The main features were a pyrexial illness followed by weakness of the trunk and limbs, clonic contractions of muscles, sensory changes, and relapses of these symptoms. The condition persisted with periodic relapses for many months and was often associated with psychological changes in the patient.

The cases included 98 members of the nursing staff of the Addington Hospital, Durban, and 45 civilian patients. In this outbreak 12 nurses and 4 civilians had become permanently incapacitated. Only 12 of the patients were males and the vast majority were between 18 and 25 years of age.

Dr. R. W. S. Cheetham (Durban) divided the disease into a prodromal, an acute and a convalescent phase. He demonstrated a nursing sister who was still incapacitated. She had patchy loss of sensation in the lower limbs and developed clonic contractions on moving the left arm and leg against resistance. Weakness of the abdominal and back muscles was almost a constant feature of this malady.

Dr. G. A. Joubert (Pathologist, Springfield Hospital, Durban) described the routine and specific methods of investigation adopted during the epidemic. In his opinion circumstantial evidence pointed rather to a virus than to a toxicological agent.

Dr. G. D. English (Medical Officer of Health, Durban) felt that the disease had some connection with the endocrine organs and hoped that the examination of urinary ketosteroids might be useful.

Dr. R. Percy-Lancaster (East London) had seen 4 cases in East London, and described the progress of one case in detail. He noted that in most cases the left side of the body was involved. He described the psychological aspects and the treatment that is sometimes necessary for these symptoms.

OTHER PAPERS

Osteochondritis Dissecans

Mr. R. Percy-Lancaster (East London) discussed this condition as it affects the ankle and the elbow joints. He showed X-rays of

these affected joints before and after operative removal of the loose fragments. The question of treatment led to some discussion. *Mr. J. M. Edelstein* (Johannesburg) mentioned the rarity of reported cases affecting the capitellum, and *Sir W. Mercer* indicated that unseparated areas in children would re-unite if immobilized for 6 months. If the fragment was separated it should be removed. *Mr. B. Polonsky* (Johannesburg) mentioned a case in which he had removed the affected head of radius.

Recurrent Sprains of the Ankle Joint

Mr. J. F. P. Mullins (Durban) dealt with the partial diastasis that occurs at the inferior tibio-fibular joint after a severe sprain of the ankle. Patients with this condition usually have a history of injury leading to recurrent sprains of the ankle. There is a sense of instability and chronic pain after weight bearing, and the ankle tires easily. X-rays usually show slight widening between the medial malleolus and talus, and sometimes a positive inversion or eversion test. The most valuable sign is a click in the ankle which is elicited by rocking the talus from side to side with the ankle held in the neutral position. The degree of rocking indicates the degree of instability.

He had operated on a large number and had full details of 25 of these cases. Some had been followed-up for 6 years, and all were relieved of their disability. The operation consists of screwing the tibia and fibula together, using a Johanssen lag-screw. The patient is kept in bed for 2 days and then allowed to walk. No plaster or compression bandage was necessary. The oldest case treated was 65 years of age, who had had symptoms for 25 years. He found wiring of the bones or bony fushion of the inferior tibio-fibular joint unsatisfactory.

Mr. T. B. McMurray (Cape Town) said that a good test of instability of this joint was to force dorsiflexion of the ankle, which invariably gave rise to pain because it caused the inferior tibio-fibular joint to spread apart.

Prof. C. Lewer Allen (Cape Town) indicated that he preferred fusion of the tibia to the fibula 2 inches above the ankle joint by cross-flapping osteo-periosteal grafts across the gap after removing the fibrous material between the bones.

Mr. C. Kaplan (Durban) felt that despite the normal movement which occurs at this joint, results seem to indicate that this operation is sometimes necessary, but he would prefer to immobilize the ankle in plaster.

Treatment of Flat Feet in Children

Mr. A. J. Helfet (Cape Town) had treated 500 cases of flat feet in children and foot-strain in adults by means of heel-seats. He depicted by means of diagrams and photographs how the usual arch-supports and wedged heels are ineffective in treating flat feet. The patient's heel merely slides laterally and deforms the outer stiffening of the shoe and wears down the heel. The usual complacent expectation that nature will correct most flat feet should be discarded; a vistit to any foot clinic or recruiting depot will show this. He had devised a heel-seat made of acrylic, which fits snugly around the heel and the sides of the os calcis, and corrects any valgus tendancy. It can be worn in any type of shoe, football-boot, gum-boot, sandal, tennis-shoe, or slipper. It holds the heel in a vertical position and prevents the usual deformity of the shoe. It therefore saves expense on shoes, is comfortable, and need not be replaced more frequently than once or twice a year. It should be worn for about 2½ years.

Mr. J. J. Commerell (Cape Town) suggested that everted feet were due to a tight tendo achillis and that the relief obtained by heel-seats in these cases seemed to be due to the raising of the heel and therefore release of tension on this tendon.

Mr. C. T. Moller (Johannesburg) asked if the tight tendo achillis was cause or effect in these cases. The Whitman's valgus-brace served a similar function to that of the heel-seat, but most technicians could not seem to fit the patient accurately.

Mr. R. C. J. Hill (Durban) noticed that when adolescent girls start wearing high heels they walk better and feel better, because of relief of the tight tendo achillis.

In reply to *Mr. F. P. Fouche* (Johannesburg) Mr. Helfet said that it did not matter what the cause of the flat feet was. Any child who persists in walking on the inner borders of his feet can be treated by this method. The shape of a foot can be moulded by this method, just as the Chinese women used to mould their feet by binding them tightly.

The Management of Scoliosis

Mr. F. J. Hedden (Johannesburg) stated that, although the management of scoliosis was still controversial, it had in recent years gradually progressed along certain sane and definite lines.

He outlined the clinical examination of a case of scoliosis of the spine and demonstrated the usefulness of X-rays, particularly of 'bending' films.

Idiopathic scoliosis was the commonest (80%). Other causes of scoliosis were poliomyelitis (5%), neurofibromatosis (2%), congenital (less than 2%), thoracogenic (less than 2%), Morquio's disease (1%), Friedreich's ataxia, spastics.

He classified scoliosis as either functional or structural.

He then described the various types of idiopathic scoliosis: Lumbar scoliosis occurs in 26% of cases and the prognosis is good. Thoraco-lumbar scoliosis occurs in 8% of cases and also has a good prognosis. Thoracic scoliosis occurs in 43% and is the most important group, giving rise to the largest curves and producing the worst deformities. It occurs at 3 periods of rapid growth and can be described as either infantile, juvenile, or adolescent. The combined thoracic and lumbar scoliosis occurs in 23% of cases and the prognosis is good. He discussed treatment in all the different types of scoliosis, and mentioned the roles played by physiotherapy, corrective plaster beds, plaster jackets and spinal supports, and correction followed by spinal fusion. He described the method of correction and fusion in detail. He employs the Risser turn-buckle jacket to obtain correction of the scoliosis. He then tries to obtain a sound bony fusion of the whole of the primary curve, if possible in a one-stage operation, by means of refrigerated bone-bank bone. The patient is kept recumbent for 6 months in the Risser jacket after fusion, and is then allowed up in a polythene jacket or if necessary a Milwaukee brace. One year after operation, films of the primary curves are taken to exclude pseudo-arthrosis and, if the results are satisfactory, all support is abandoned.

His conclusions were that 5% of cases of idiopathic scoliosis need early fusion and correction, mainly in the thoracic type at the age of 10 years, because of the bad prognosis. In 50% of paralytic curves operation is needed because of instability, symptoms or deformity. Early fusion is especially indicated in the thoracic type.

Nearly all cases of neurofibromatosis need early operation, but operation is only rarely necessary in the congenital type. He felt that scoliosis should be dealt with in a specialized clinic where adequate facilities and time are available.

Malignant Bone Tumours

Dr. M. Findlay (Durban) discussed the diagnosis and treatment of bone tumours. X-rays and slides were shown of the various tumours and the following points were mentioned:

In osteoclastoma 50% had a favourable result if properly treated, 35% tended to recur and 15% became malignant. The treatment of osteoclastoma is still controversial. Some are of the opinion that irradiation after curettement causes malignancy, but Dr. Findlay disagrees and considers it the best line of treatment.

In osteogenic sarcoma it is best to irradiate first (with supervoltage if possible) and amputate afterwards. The 5-year cure rate ranged from 10% to 23%.

Arteriography was mentioned as a means of differentiating an inflammatory from a neoplastic bone lesion, or in diagnosing malignancy at an early stage in a benign tumour. Arteriograms were shown depicting the various differentiating features, such as 'pallor', branching of vessels and arterio-venous communications.

Dysplasias of Tendons of Feet as a Cause of Congenital Deformities

Dr. Steele F. Stewart (Honolulu) compared the development of the foetal foot in the macaque, the gorilla and the human. He is of the opinion that the human foot is more primitive than the monkey's foot, and that it stands at the base of the primate tree.

If the tendons differentiate and develop earlier than normal in a human foetus, arthrogrypotic and other deformities are more likely to be present at full-term. The longer it takes for the foetal development of the tendons in the foot, the lesser are the gradations of these foot deformities at birth.

In club-foot deformities there is a definite expansion of the tendo achillis, which attaches more medially on the os calcis than in the normal foot. The tendo achillis consists of a flat superficial band formed from the inner head of gastrocnemius, and a flat volar or deeper band formed from the outer head of gastrocnemius. These closely-applied flat bands can always be seen and separated. It is the deeper band from the outer head of gastrocnemius which attaches to the medial surface of the os calcis in the club foot. This observation has led him to devise a new operation to correct club-foot inversion of the heel. He detaches the deeper band from its insertion into the os calcis, and finds that the heel can immediately be everted more easily. He then tenotomizes the superficial band of the tendo achillis to gain length, and inserts the distal end of the detached deep head into the distal end of the cut superficial head. In this manner a more direct and straight pull on the os calcis is obtained.

Other tendon anomalies in club foot are corrected at the same operation. The erroneous dorsal expansion of the peroneus brevis is severed and transplanted volar-wards. Also the anomalous bands of peroneus longus in its plantar tunnel are severed to allow free play of this tendon.

He showed photographs of patients treated by this method whose deformities appear to have been corrected without subsequent manipulations or plasters.

The peroneous-longus tenolysis is also employed in certain types of flat feet. He found that in these flat feet, when the heel-valgus was corrected, the patient could not actively depress the 1st metatarsal head onto the ground. These patients therefore had a fixed supinated forefoot due to adhesions of the peroneus longus in its plantar tunnel. When these adhesions were severed the 1st metatarsal head could be actively depressed and the patients became free of deformity and discomfort. He felt that this type of flat foot was not common in the Negro.

In the discussion *Mr. J. M. Edelstein* (Johannesburg) mentioned that in the Bantu foot there is an extra insertion of tibialis anterior in 12%, and the peroneus tertius is often absent. Other anomalies of tendon insertions in the foot occur in 2·5% of Bantu as compared with only 1·5% of Whites, and one would therefore expect a greater evidence of club feet in the Bantu. This deformity, however, does not appear to be more prevalent in the Bantu than in the White population.

Osteotomy of the Os Calcis in the Treatment of Pes Cavus

Mr. F. C. Dwyer (Liverpool) presented a new approach to the treatment of pes cavus. The operation advised by him consists essentially in a subcutaneous division of the contracted plantar fascia and correction of the varus deformity of the heel by removing a wedge of bone from the outer aspect of the os calcis. He submitted that by approaching the deformity from behind and overcoming the varus of the heel, the foot is rendered plantigrade and thereafter weight bearing exerts a corrective influence which results in progressive improvement of the deformity. The operation is essentially a prophylactic one and should be performed before gross structural deformity develops and while active growth is still taking place. He had performed the operation 63 times in 47 children, of ages varying from 3 to 16 years. Even in patients over the age of 16 great improvement is obtained by doing nothing more than this operation. There is improvement in their gait and shoe-wear; and the drop-foot and claw-toe deformities are strikingly corrected. In adults with fixed forefoot deformity the cavus can be corrected at the same time by removing a dorsal wedge from the tarso-metatarsal region, thus preserving movement at the mid-tarsal subastragaloid joint.

He showed photographs and X-rays of patients on whom this operation had been performed, and also a film illustrating the operation.