

# Proceedings of the Combined Meeting of the 6th Annual Meeting of the Asean Orthopaedic Association and the 5th Congress of the Indonesian Orthopaedic Association

The Combined Meeting of the ASEAN Orthopaedic Association (6th Annual Meeting) and The Indonesian Orthopaedic Association took place in Jakarta, Indonesia in November 12-15, 1986. Chairman of the Organizing Committee was Dr. Chehab Rukni Hilmy. The plenary lectures were given by several speakers including. — Dr. Mercer Rang of Toronto Canada, who gave "*Bone Tumors in Children*", "*General Outline of Fractures in Children*", "*Monteggia Fractures*", "*Supracondylar Fracture*", "*Complications of Fracture*", "*Other Elbow Fractures*", Dr. Tohru Uemda of Chiba, Japan presented "*Limb Salvage Treatment of Malignant Bone Tumors*", "*Osteosarcoma Current Concept and Management*", "*Giant Cell Tumors*", Dr. Robert MC Murtry of Toronto, Canada who presented "*The problem of Hemorrhage with Pelvic Fracture*", "*The Fracture Factor*", "*Distal Radial Fractures*", "*The Reconstruction of Malunion of Distal Radial Fractures*", Dr. Shiro Inoue of Gifu, Japan, presented "*External Skeletal Fixation with Acrylic for Infected Nonunion and Electrical Stimulation for Nonunion and Delayed Union*", Dr. Donald P.K. Chan of Rochester, New York, U.S.A. gave "*Fractures of the Cervical Spine without Neurological Deficit*", "*Fractures of the Spine with Neurological Deficit*", Dr. Osamu Kataoka of Kobe, Japan, also presented "*Fractures of Cervical Spine*". There were several scientific papers, Symposium and ASEAN Travelling Fellowship Papers.

## PLENARY LECTURES

### **The problem of hemorrhage with pelvic fractures**

*Robert V. McMurtry*

Sunnybrook Medical Center, Toronto, Ontario, Canada.

This topic will address pelvic fractures in the context of the multiple injured patient and suggest priorities and treatment in terms of both general and specific management.

### **The fracture factor**

*Robert Y. McMurtry*

Sunnybrook Medical Center, Toronto, Ontario, Canada

This is a lecture that is directed towards the concept of early fracture management. The theme of the talk is "the best chance is the first chance".

There is an increasing and accumulating evidence that multiple injured patients as opposed to patients with a single fracture that early definitive fixation results in a significant decrease in mortality and morbidity.

Our own experience, as well as a review of our colleagues in other centers, are part of this talk to gether with illustrative cases.

### **Distal radial fractures**

*Robert Y. McMurtry*

Sunnybrook Medical Center, Toronto, Ontario, Canada

Distal radial fractures and carpal disruption are one of the most undertreated and misunderstood group of injuries in this part of the world.

Complications from them are legion and generally under-rated. An organized and logical approach to the classification and thereby the diagnosis and management will be presented.

### **The Reconstructions of malunions of distal radial fractures**

*Robert Y. McMurtry*

Sunnybrook Medical Center, Toronto, Ontario, Canada

We now have a large experience that is currently represented by a paper in press of over 50 distal radial reconstructions together with ligament reconstructions in and about the wrist.

This is a highly successful operation but is very demanding technically. The indications, approaches and pitfalls will be described in this talk.

## ASEAN TRAVELLING FELLOWSHIP PAPERS

### **The bone mineral content of the normal population in Singapore**

*Lee Soon Tai, Michael Yeang, P. Balasubramaniam,*

*Kamal Bose, Edward P.C. Tock*

Department of Orthopaedic Surgery, National University Hospital, Lower Kent Ridge Road, Singapore.

The elderly now constitutes the fastest growing population in the world and the problem of aging in industrialised countries will soon be also a problem in developing nations. Senile osteoporosis is therefore bound to increase in our population. So far, no study of bone mineral content (BMC) to assess loss has been done in this region.

This is a study of BMC of 250 normal subjects from 20 to 75 years of age using dual photon absorptiometry (DPA). The BMC (lumbar spine and femoral neck) was significantly correlated to age ( $P < 0.01$ ) and body surface area ( $P < 0.05$ ). The correlation between lumbar spine BMC and femoral neck BMC was highly significant ( $P < 0.001$ ). A significant positive correlation was also noted between the femoral neck BMC and body weight ( $P < 0.05$ ).

### Two stages procedure in the treatment of severe idiopathic scoliosis

*Piya Netrawichien, Nariş Thiranont*

Department of Orthopaedic Surgery, Chiang Mai University, Chiang Mai, Thailand.

Because of the education and the screening program have now been developing world wide, a case of severe idiopathic scoliosis is uncommonly seen. But when it occurred it causes many problems in the treatment.

This is a report of 14 year-old girl who is a severe idiopathic scoliosis from T6 – T12. A curve is  $115^\circ$  with severe rib deformity. This patient underwent 2 staged correction. The first stage was anterior release and spinal fusion. Followed by a skull-tong gravity traction on a circo-lectric bed for 2 weeks. The second stage which then performed was posterior spinal fusion with Luque's segmental spinal instrumentation combined with posterior thoracoplasty.

Final correction of the curve was  $50^\circ$  without any complication. This method if did cautiously is safe and convincing in the treatment of severe idiopathic scoliosis.

### The problem of upper hook dislodgement and loss of correction in Harrington instrumentation

*Titus Simorangkir, Subroto Sapardan*

Department of Orthopedic Surgery, School of Medicine University of Indonesia, Ciptomangunkusumo General Hospital, Jakarta, Indonesia.

A retrospective study on the incidence of the post-operative upper hook dislodgement and loss of correction of scoliosis patients surgically treated by Harrington instrumentation and posterior fusion revealed that meticulous technique of hook seating and proper post-operative immobilization has an important role.

A square notch preparation for the upper hook was not done on the 54 patients in group B, who wore a well molded EDF cast for six months followed by one year Milwaukee brace. For the 45 patients in group A, a square notch for the upper hook was prepared, and a well molded EDF cast used for nine months followed by one year Milwaukee brace.

Evaluation after two years post-operatively the patients in group A had an average lost of correction of 6,92 degrees, and the patients in group B 10,24 degrees.

No pseudarthrosis was found in group A, but there was one patient in group B.

### ASEAN SYMPOSIUM ON BONE TUMORS

#### Patterns of incidence of bone tumors and problems in management in Malaysia (January 1980 – March 1986)

*Dato' Dr. M. Sivanantham*

National Institute of Orthopaedic & Traumatology, General Hospital, Kuala Lumpur, Malaysia.

The magnitude of the problems of bone tumours in Malaysia as compared to the overall incidence of other malignancies as well as the problems encountered in the management of bone tumours in Malaysia are the main aims of this paper. Records including X-rays and pathology reports of patients who have been treated at all Government hospitals including the University Hospital in the period 1980 to 1985 were studied.

Bone tumour comprised of 3.2 per cent. of all cancers. Primary malignant bone tumours constituted the bulk of bone tumours, there being only a few benign and secondary bone tumours. This was because patients with benign bone tumours did not seek treatment or were treated in district hospitals, and the secondaries were mainly managed by the radiotherapy department. Osteosarcomas and Osteoclastomas emerged as the most common primary malignant tumours in Malaysia. There were 51 osteosarcomas and 31 osteoclastomas amongst 138 bone tumours that came under scrutiny.

Majority of Osteosarcomas presented when there were stage II B lesions (Enneking). Ablation surgery followed by multiple polycyclic chemotherapy and radiotherapy were used in all cases who opted for treatment. However, the prognosis was uniformly bad, only a small percentage of cases surviving after 2 years.

A very high incidence of osteoclastomas was noted in Malaysia as compared to the incidence in Europe or North America. Osteoclastomas also presented late. Histopathological grading was not helpful in prognosis. Curettage and bone grafting resulted in 60 per cent recurrence at the end of 2 years. Ablative, and excisional and reconstructive surgery gave the best results.

The problems encountered in this study like unwillingness of patient to accept modern methods of treatment, lack of follow up due to socioeconomic factors, poor documentation and exorbitant cost of chemotherapy will be discussed.

#### Tumors and tumor-like lesion of bone during 5 years in Hasan Sadikin General Hospital, Padjadjaran University of Bandung – Indonesia.

*Tanwir J. Mukawi, Gunasyah E.*

Department of Pathology, Faculty of Medicine, Padjadjaran University of Bandung, Indonesia.

Bone tumors in Indonesian Publication were still less and usually limited on some case reports. Cases of bone tumors for a period of five years in the Department of Pathology School of Medicine, Padjadjaran University of Bandung

— Indonesia, were studied based on histopathology. The results of the study could give bone tumors pattern in Bandung and surrounding cities (West Java). The tumors and tumor like lesions of bone were found as follow: osteoma 22.7 per cent, osteogenic sarcoma 11.4 per cent, osteochondroma 13 per cent chondromyxoid fibroma 0.8 per cent, chondrosarcoma 3.1 per cent, fibrosarcoma 0.4 per cent aneurysmal bone cyst 1 per cent, fibrous dysplasia 0.4 per cent chondroblastoma 0.4 per cent and osteofibroma 0.4 per cent. Metastatic tumors, soft tissue tumors and tumors of the jaw were excluded. Histologic types of osteogenic sarcoma in our series were. 7 (24%) fibroblastic type, 9 (31%) chondroblastic type and 13 (45%) osteoblastic type.

#### Frequency of primary malignant tumors of the bone a 5 year survey (1980 – 1984)

*B. Bratatjandra, Alex Tandian*

Department of Anatomical Pathology, Medical Faculty, University of Indonesia, Jakarta, Indonesia.

All cases of benign and malignant bone tumors received in our department during the years 1980 – 1984 were collected and categorized in accordance with the W.H.O. classification. The samples were obtained by surgical procedures; marrow aspirations were not present. Of each tumor, the sex and age of the patient, as well as the localization of the tumor were noted. The results were tabulated and compared to those found in the literature.

During the period of 5 years 367 cases of primary tumors of the bone were received. Of these tumors 240 are benign and 127 malignant. The most frequent benign tumor encountered is osteochondroma (100 cases), followed by osteoma (90 cases). Of the malignant tumors, osteosarcoma is the commonest (65 cases), followed by chondrosarcoma (23 cases), giant cell tumor of the bone (17 cases), and plasma cell myeloma (8 cases).

Of this survey we make the conclusion that in our series the distribution of malignant tumors of the bone according to frequency, sex and common age of the patients, as well as the commonest site of the tumors is consistent with that found in the literature; only the incidence of plasma cell myeloma is perhaps somewhat low and that of giant cell tumor of the bone a little bit high.

#### Profile of bone tumors in central hospital Jakarta – Indonesia.

*Errol Untung Hutagalung*

Department of Orthopaedic Surgery, School of Medicine University of Indonesia, Ciptomangunkusumo General Hospital, Jakarta, Indonesia.

During 6 years periode (1980 – 1985) we collected 135 cases of bone tumors that were treated in Central Hospital Jakarta, Indonesia.

We used the WHO classification to classify the tumors.

In the malignant group, osteosarcoma is most common

tumor totaling 42 cases followed by Giant Cell Tumor, 30 cases. In the benign group osteochondroma is the most common tumor, 25 cases.

The malignant cases usually come to us in advance condition, necessitating amputation as the only choice of treatment.

Follow up is another problem, the patients usually could be followed only is short period.

#### Primary bone tumor in Dr. Soetomo Hospital

*I Putu Sukarna, Putu Astawa*

Orthopaedic Sub Division, Department of Surgery, Airlangga University, Medical Faculty Dr. Soetomo Hospital, Surabaya, Indonesia.

Since 1980 until 1986, the incidence of primary benign bone tumor in Dr. Soetomo Hospital was 88 cases (63.77%) and primary malignant bone tumor 50 cases (36.23%).

With histopathologic appearance: Osteochondroma 31 (22.26%), Giant Cell Tumor 19 (13.77%), Osteoma 17 (12.32%), Enchondroma 15 (10.87%), Fibrous dysplasia 5 (3.62%), Solitary bone cyst 1 (0.73%), Osteogenic sarcoma 39 (28.26%), Chondrosarcoma 6 (4.35%), Multiple Myeloma 3 (2.17%), Ewing's tumor 2 cases (1.45%).

#### SCIENTIFIC FREE PAPERS

##### A safe and simple method of repair of recurrent dislocation of the sterno-clavicular joint

*W.B. Maguire*

Princess Alexandra Hospital, Brisbane, Australia.

The paper describes a simple method of repair of recurrent dislocations of the sternoclavicular joint by double-breasting the sterno mastoid and pectoralis major muscles.

Previously described operations are technically difficult and risks of pneumo-thorax and injury great vessels. The anatomy and technical details are described.

Four cases are described with follow-up from six months to six years.

The results were satisfactory in three. The techniques can also be used in anterior traumatic dislocations avoiding K wire fixation which is dangerous in this situation.

##### Internal fixation of distal forearm fractures using Kirschner wires

*Barman Dradjat, Saleh Mangunsudirdjo*

Department of Surgery, Medical Faculty at Diponegoro University/ Dr. Kariadi, Semarang, Indonesia.

This study was carried out to observe an alternative approach to handling distal forearm fractures in Indonesia.

In practice, although closed reduction is first recommended, in some cases an open reduction must be done. There are quite a number of internal fixation techniques, like the use of plate and screws, intramedullary nails etc., with their advantages and dis-advantages. Some weak points are requiring a high degree of skill and needing spe-

cial instruments.

To overcome these problems, the use of Kirschner wires was tried. Followings are the results of personal observations on patients treated at the above name hospital between October 1, 1985 and October 1, 1986. Out of fourteen patients operated upon, the results were good in 83.33 per cent of the cases with average healing time of seven weeks. Kirschner wires also have the following advantages: simplicity, ease of availability, ease of adjustment to various needs and relatively low cost.

Conclusion: The use of Kirschner wires as an alternative policy for the fixation of distal forearm fractures can be applied to the general prevailing situation and condition in Indonesia.

### **Segmental fractures of the femur treated by closed intramedullary nailing**

*Bong Keun Kim*

Department of Orthopaedic Surgery, Kyung Hee Medical University, Seoul, Korea.

The author analysed twenty-six cases of the segmental fracture of the femur which were treated by intramedullary nailing with or without interlocking, from December 1975, to August 1986.

The closed nailing was done in fourteen cases, and semiclosed in two cases. The retrograde nailing following open reduction was used in seven cases. The interlocking nailing was performed in sixteen cases. Additional bone graft in fracture site was required only in one case which had a bony defect after removal of necrotic fragment.

The combined fixation like Knowles pin or bolt fixation can be used with nailing for associated fracture such as neck or subtrochanteric, supra or intercondylar fracture.

All cases achieved radiological union. Nineteen cases united within eight months, but remaining seven cases took more than eight months, the longest one was thirteen months. The closed nailing may be a more consistently successful procedure for the patient with segmental fracture of the femur.

### **Fracture of acetabulum management at Ciptomangunkusumo Hospital**

*Agung P. Sutiyoso, Djoko Simbardjo*

Department of Orthopaedic Surgery, School of Medicine University of Indonesia, Ciptomangunkusumo General Hospital, Jakarta, Indonesia.

Thirty-two patients with fractures of the acetabulum were treated at Cipto Mangunkusumo Hospital between 1981 – 1984. The patients were primarily adults, involved in motor vehicle associated trauma.

The fractures were classified according to Letournal and Judet.

Closed treatment with either skin or skeletal traction for most of the simple fracture and an open reduction and

internal fixation from combination of simple fracture through the Kocher-Langenback, extended iliofemoral; or ilioinguinal approach.

Twenty-six patients were followed for an average of two years. Results of closed treatment were 53 per cent good and operative treatment was 54 per cent good. Satisfactory results were obtained in conservative treatment if the acetabular dome was intact.

### **The effects of electrical stimulation on biomechanical properties of fracture healing**

*Bambang Nugroho, J.K. Kang, J.C.H. Goh Kamal Bose*

Department of Orthopaedic Surgery, School of Medicine University of Indonesia, Ciptomangunkusumo General Hospital, Jakarta, Indonesia – Singapore.

This paper present a study on the serial changes in the biomechanical properties of electrically stimulated callus in experimental animals. This allowed the effect of electrical stimulation on fracture healing to be qualitatively assessed.

One hundred and four white rabbits of both sexes, average weight 1.8 kg were used. Thirty-eight rabbits were electrically stimulated, 36 rabbits were used as control and 30 rabbits were used for normal healing. A transverse mid-tibia osteotomy was made on the right leg of all the experimental animals. A constant direct current of 20 microamperes was delivered to the osteotomy site of the electrical stimulation group.

At selected observation periods of 1, 2, 3, 4, 6, 8 and 12 weeks, the experimental animals were sacrificed. Radiological and histological findings showed that new bone formation in the electrically stimulated group was more exuberant than those in the control and normal healing group at same observation period.

Biomechanical findings at 4, 6, 8 and 12 weeks observation periods showed a rapid and greater increase in the structural stiffness followed by increased in the breaking strength in the electrically stimulated group.

### **Diagnosis and treatment of facet joint lesions**

*Ronald Beetham*

St. John of God Hospital, Ballarat, Victoria, Australia.

Experience has shown that the clinical presentation provides a fairly precise indication of the presence of a facet joint lesion.

Synovial facet joint lesions can be classified according to the site of the lesion and its pathogenesis. Common sites of abnormality are the capsule and supporting ligaments of the joint and the partly intra-articular meniscus.

Fractures involving the interior articular process can occur, but are difficult to demonstrate radiologically. Facet joint lesions are often related to lumbar 4 or lumbar 5 defects of the pars intra-articularis. Isthmic spondylolysis may have a facet lesion causing symptoms without

disc herniation, and are shown on arthrography to have unilateral communication between the lumbar 4 to 5 and lumbar 5 to sacral 1 facet joints.

As expected, referred leg pain can occur due to the innervation of the facet joint capsule from the branches of the posterior primary ramus.

Clinical history and findings and x-ray investigations including specific and functional radiology facet arthrography and facet joint injections will be presented. There appears to be a limited space for fusion of the facet joints without simultaneous postero-lateral spinal stabilisation.

Facet joint lesions are often accompanied by an intra-articular disc lesion. Methods of treatment are discussed.

**(Keywords:** lumbar, spine, facet, joint, arthropathy, meniscoid lesions, facet joint radiology, manipulation, operations).

#### **Natural resolution of thoraco-lumbar fractures as seen on CT scan**

*E.R. Criffiths*

Royal Perth (Rehabilitation) Hospital, Perth, Australia.

With the introduction of CT scanning far more detail is now available of the diameter of the spinal canal, especially in cases of thoraco-lumbar "burst dispersion fractures". The presence of bony fragments within the spinal canal, as demonstrated by CT scan, has led to surgery in the majority of cases to remove this fragment causing cord compression and reconstitute the spinal canal by either anterior or posterior stabilisation. We have endeavoured to assess the natural history of spinal canal deformity in case that have not undergone surgery. Thirty in 28 patients were studied. Twenty-two cases were managed nonoperatively, and 17 of these cases had bony fragments deforming the spinal canal. This study presents 15 of these 17 patients, with follow up varying from three months to four years. All patients had CT scans at the time of injury and subsequently. All cases showed neurological lesions varying from complete paraplegia to incomplete, isolated root lesions. Thirteen of the 15 cases studied showed resolution of the spinal canal "stenosis". Twelve cases showed resolution better than 30 per cent. This resolution was seen earliest at three months, and was noted to increase with time. Is surgery really necessary for this fracture?

#### **Initial experience in using the RL pedicle screw plate**

*Subroto Sapardan*

Department of Orthopaedic Surgery, School of Medicine, University of Indonesia, Ciptomangunkusumo General Hospital, Jakarta, Indonesia.

The first pedicle screw plate for fracture of the thoracic and lumbar spine performed by the author was in May 1985 using Eggers plate and Screw.

Within the next period of one year up to May 1986, 4 patients were operated on using the Rene Louis pedicle

screw plate at Fatmawati and Setia Mitra hospital.

The anatomical background and operative technique will be reviewed.

The early result was good when considering limited experience in regard of safety of the technique, the reduction achieved and stability of this segmental osteosynthesis.

#### **The stabilization of the thoracolumbar fracture by Luque's modification procedure**

*Purwadi, Armis*

Department of Surgery, Faculty of Medicine, Gajah Mada University, Dr. Sardjito Hospital, Yogyakarta, Indonesia.

During 1984 and 1985, 41 patients was admitted to Dr. Sardjito hospital Yogyakarta with spine injury, 38 males and 3 females, age range between 14 – 60 years old. 19 out of 41 were unstable, and 15 cases were stabilized by Luque's modification procedure.

Eight cases was done within 24 hours after injury, all of them with neurologic involvement, 4 cases was done within 7 days after injury, 3 out of 4 with non neurologic involvement, 1 case with neurologic involvement, 1 case with decubitus.

Three cases was done after seven days injury, all of them with neurologic involvement, 2 out of 3 with decubitus. Among the intervention 1 case suffered sepsis post operative care, 1 case was dead (because of head injury), and 2 cases were inadequate stabilization (1 case because of too smaller wire, and 1 case because of the rod's curve was unsuited for the thoracolumbar kyphosis).

#### **Transposition of the ipsilateral fibula for large defect of the Tibia**

*Bong Keun Kim*

Department of Orthopaedic Surgery, Kyung Hee Medical University, Seoul, Korea

Non union of the tibia with a large defect is difficult to treat by conventional methods.

The vascularized pedicle graft of the ipsilateral fibula is an ideal method to solve the above mentioned problem, but to this end, peroneal vessels must be isolated. The isolation of the peroneal vessels needs special technique. And it is very difficult and time-consuming.

The author dissected only anterolateral muscles of the fibula and transferred the fibula to the tibia along with the anterior surface of the interosseous membrane. While doing this, posterior flexor muscle group was not detached from fibula and left it as muscle pedicle. The peroneal vessels are amid the flexor muscle of medial side of fibula.

Transposition of the ipsilateral fibula on a myovascular pedicle was performed in eight cases with large defect or persistent nonunion of the tibia. The four cases were infected. The average length of the tibial defect was 5.4 cm in four cases and the average length of the transposed fibula in eight cases was 16 cm. Bony union occurred within six to

eight months in five cases. In remaining three cases it occurred in nine months, ten months and eighteen months respectively.

#### **The Relation between skin closure and delayed union in open fractures of tibia and fibula**

*Sofyanuddin, H. Soelarto Reksoprodjo*

Department of Orthopaedic Surgery, School of Medicine University of Indonesia, Ciptomangunkusumo General Hospital, Jakarta, Indonesia.

This paper reports a prospective study of 50 patients with open fractures of tibia and fibula grade II treated during periode of July 1984 till June 1985.

All patients were hospitalized in Fatmawati and Ciptomangunkusumo General Hospital in Jakarta.

All patients were debrided, reduced and immobilized with long leg cast.

In Group A: 25 patients, the wounds were closed primarily.

In Group B: 25 patients, the wounds were leaved open and closed by delayed primary suture.

Observations were made on the rate of infection, skin necrosis, bone healing and duration of the hospital stay. We found that in Group B (delayed primary suture), the infection rate, skin necrosis and duration of hospital stay were lower than Group A, whereas bone healing in Group B was faster.

The difference between Group A and Group B was statistically significant.

#### **The Conservative treatment of the tibial fracture with an intact fibula in adult**

*Lukman Shebubakar, H. Soelarto Reksoprodjo*

Department of Orthopaedic Surgery, School of Medicine University of Indonesia, Ciptomangunkusumo General Hospital, Jakarta, Indonesia.

Twenty-seven cases of tibial fractures with intact fibulas in adults were treated conservatively and with delayed weight bearing from January 1985 until December 1985.

Nine (33%) and delayed union, ten (37%) had varus deformity of the fractured tibia, and none had non-union.

In this study, we found that varus deformity could not be prevented with delayed weight bearing techniques in the conservative management.

#### **Clinical evaluation of closed femoral shaft fractures in children in Fatmawati Hospital Jakarta**

*Hafas Hanafiah, P. Siregar*

Department of Orthopaedic Surgery, School of Medicine University of Indonesia, Ciptomangunkusumo General Hospital, Jakarta, Indonesia.

Forty six patients who were less than 12 years old were treated for a fracture of the femoral shaft in the Fatmawati Hospital Jakarta between January 1985 to June 1986.

From this group, 5 were excluded from analysis because their fractures were bilateral or open. All patient had been initially treated in skin traction for 15 to 21 days, followed by use of a spica cast until union was solid.

Types of fracture are transverse, oblique and spiral and the most commonly involving the middle third of the femur. Overriding less than 20 mm should be accepted because there is overgrowth. Overgrowth has influential with age, location and type of fracture.

#### **Fractures distal forearm**

*Abdurrahman, I Putu Sukarna*

Orthopaedic Sub Division, Department of Surgery, Airlangga University, Medical Faculty Dr. Soetomo Hospital, Surabaya Indonesia.

Conservative treatment using cast immobilization has been done after closed reduction of 338 fractures of distal forearm.

The result were accepted in 187 cases, angulation in 9 cases, chronic osteomyelitis in one case, frozen shoulder one case and 136 cases unknown.

#### **Natural history of adolescent idiopathic scoliosis**

*John Isaac, J.S. Daruwalla, P. Balasubramaniam*

Department of Orthopaedic Surgery, Singapore General Hospital, National University of Singapore, Singapore.

The purpose of this study is to examine the natural history of adolescent scoliosis and factors involve in the progression. A total of 360 cases were followed up for a mean period of 19 months. Progression was defined as an increase of 5° during the follow-up period.

The factors studied were race, age, sex, menarche status, curve location, curve severity and Risser status. The overall progression rate 27.5 per cent. Greater progression rates were found in Indian patients, when compared with Malays and Chinese. Female patients also had a higher rate than males of the same age. Pre-menarche females had a greater risk of progression than post-menarche females.

Double curves and curves greater than 21° at first visit were found to have the highest progression rates. Lumbar curves and those in the 5 – 10° range had the lowest rate.

The Risser correlated well with the progression rate. However double curves with late Risser had a 23 per cent progression rate while other curves with late Risser had a 8 per cent progression rate.

The study of the above factors can be of value in predicting if a curve will progress.

#### **Arthrogyphosis multiplex congenita (case report)**

*Juli Ismail, Ahmad Rizal*

Department of Surgery, Dr. M. Djamil Hospital, Padang, Indonesia.

Arthrogyphosis multiplex congenita is an anomaly which are by congenital, multiple and non progressive immobility of joints.

We found that uncommon case, a young boy 2½ year

of age who was admitted to our hospital. We found the classic deformity with bilateral indirect inguinal hernia later that is coincidence congenital disease.

Firstly the ankle deformity was corrected at 2½ year old with soft tissue released and plaster casting for six weeks. After ten weeks of operation the wound was healed unsatisfactorily which may be caused by imperfect reduction and immobilization.

However most surgeon described that soft tissue release was less affective than bony operation.

### **Haemophilic arthropathy**

*Sulaksito, I Putu Sukarna*

Orthopaedic Sub Division, Department of Surgery, Airlangga University, Medical Faculty Dr. Soetomo Hospital, Surabaya Indonesia.

Sometimes Haemophilia Arthritic become a serious problem for orthopaedic surgeons. Cooperation with the Haematologist would be necessary when surgical intervention is needed.

Two brothers suffering Arthritic Haemophilia have been reported. One was relieved in conservative treatment, the other needs surgical intervention.

### **Spondylolysis in young athletes**

*Respati Suryanto Dradjat, Lukman Shebubakar, Chehab Rukni Hilmy*

Department of Orthopaedic Surgery, School of Medicine University of Indonesia, Jakarta, Indonesia.

We report 8 cases of spondylolysis in young gymnastic and badminton athletes. They are 9 to 16 years of age.

Low back pain is the presenting symptom in all cases.

Radiographic examination shows defect in the neck of "scotty dog" the L4 or L5, unilateral or bilateral without slipping of vertebral body.

Excessive training seems to be the causative factor although constitutional factors can not be excluded.

All cases were treated conservatively.

### **A Computer program for the determination of porosity and vascularization indices in healing bone**

*Michael Yeang, J.C.H. Goh, A. Nather, P. Balasubramaniam Kamal Bose*

Department of Orthopaedic Surgery, National University of Singapore, National University Hospital, Singapore 0511.

The healing of bone, which is a complex, highly organized and specialized connective tissue, has been extensively studied. A knowledge of the index of porosity and vascularization of the bone has important implications for fractures and certain forms of fracture treatment. Previously, the degree of resorption and vascularization in bone was rated visually. Quantitative analysis was not possible through this subjective method. We report a planimetric

technique which uses a microcomputer and digitizer for calculating resorption areas and lengths of blood vessels.

The porosity and vascularization indices obtained through the computer-assisted procedure were compared to data obtained using manual planimetry and a map measurer. It was found that, although the manual method was accurate and precise, the digitized areas of bone porosity and lengths of blood vessels were statistically equivalent to the actual values ( $P > 0.3$ ) at the 95% level of confidence. Further, the correlation between the digitized values and the actual values was highly significant ( $P < 0.001$ ) for both area and length computations. Thus, the computerized technique is preferable to the slower manual method of estimation of porosity and vascularization indices in bone.

### **Clinical evaluation of elongation of tendoachilles for spastic equinus deformity in cerebral palsy**

*Agung P. Sutiyoso, Paruhum U.T. Siregar, Soelarto Reksoprodjo*

Department of Orthopaedic Surgery, School of Medicine University of Indonesia, Ciptomangunkusumo General Hospital, Jakarta, Indonesia.

Twenty-six children (32 feet) with equinus deformity in spastic cerebral palsy underwent elongation of tendon achilles for which the principal indication was the failure of dorsiflexion to a neutral (zero) position when measured with the plantar surface of the heel and the foot in varus position.

All patients were assessed at the Institute for Disable Children Care (Y.P.A.C.) and surgery was done at Fatmawati Hospital, Jakarta.

After an average follow-up period of four years, the recurrence rate of equinus deformity was 26 per cent in diplegia, 22 per cent in hemiplegia and none in total body involvement and calcaneal deformity in 5 per cent diplegia.

The classification of spastic cerebral palsy and age of the patient of equinus deformity correction seemed to affect the result.

### **The incidence of hip dislocation in cerebral palsy in Y.P.A.C. Jakarta**

*Soegiarto Soerodjojo, Paruhum T.T. Siregar, Soelarto Reksoprodjo, Maldi Samekto S.M.Ph.*

Department of Orthopaedic Surgery, School of Medicine University of Indonesia, Ciptomangunkusumo General Hospital, Jakarta, Indonesia.

We have studied the incidence of spontaneous dislocation of the hip in cerebral palsy, with particular reference to the pattern of neurological involvement. In patient with total body involvement the incidence of dislocation was very high (54%), while in those with diplegia and little involvement of the upper limbs, only 10 per cent were affected. There was no evidence of instability of the hip in any

of the patients with hemiplegia.

A strong correlation was found between the stability of the hip and the patients' ability to walk.

#### **Blount's disease (A case report)**

*Sofyanuddin, H. Soelarto Reksoprodjo*

Department of Orthopaedic Surgery, School of Medicine University of Indonesia, Ciptomangunkusumo General Hospital, Jakarta, Indonesia

This paper report a case of Blount's disease in a boy 6 years old with history of early walking and overbody weight.

The patient had 20 degrees of varus deformity on standing, internal torsion of tibia, laxity of lateral collateral ligament and 2 cm shortening of the left leg.

Curved dome shaped osteotomy of proximal tibia was done on August 1985, post operatively the leg was immobilized in long leg plaster for 6 weeks.

To prevent instability and recurrence of deformity the leg was put on a long leg brace.

After one year of follow up, no recurrence of deformity and no instability detected.

#### **Results of tension band wiring for the treatment of patellar fractures**

*Djamaludin Wijaya, Sofyanuddhi H, Soelarto Reksoprodjo.*

Department of Orthopaedic Surgery, School of Medicine University of Indonesia, Ciptomangunkusumo General Hospital, Jakarta, Indonesia.

Ninety eight patellar fractures treated by tension band wiring from 1980 – 1985 in Fatmawati and Cipto Mangunkusumo General Hospital and were reviewed retrospectively.

The results were assessed subjectively and objectively.

- Excellent = 30 patients (30.6%)
- Good = 40 patients (40.8%)
- Fair = 16 patients (16.3%)
- Poor = 12 patients (12.3%)

The patellar fractures were classified as follows:

1. Pure Transverse, 68 patients :
  - 30 Excellent
  - 35 Good
  - 3 Fair
2. Mild Comminuted, 18 patients:
  - 5 Good
  - 13 Fair
3. Severe Comminuted, 12 patients:
  - all of them are poor

#### **Pollicization in radial ray absent**

*Putu Astawa, Satrio, Djoko Roeshadi*

Orthopaedic Sub Division, Department of Surgery, Airlangga University, Medical Faculty Dr. Soetomo Hospital, Surabaya, Indonesia.

Two cases of radial ray absent treated with centraliza-

tion of ulna and pollicization (Buck Gramcko) in Dr. Soetomo Hospital Surabaya, have been evaluated one year post operative with good cosmetic and function result.

#### **Lumbrical replacement; The comparative study of claw-hand reconstruction in leprosy**

*Basuki, Satrio, Djoko Roeshadi*

Orthopaedic Sub Division, Department of Surgery, Airlangga University, Medical Faculty Dr. Soetomo Hospital, Surabaya, Indonesia.

Several technics for clawhand reconstruction in leprosy cases have been done by Orthopaedic Sub Division of Department of Surgery Airlangga University/Dr. Soetomo Hospital in Surabaya. There are:

1. Flexor digitorum sublimis transfer (Stile – Bunnel), for 33 cases.
2. Extensor Flexor or Extensor many tailed graft (Brand), for 37 cases.
3. Palmaris longus many tailed graft (Lennox), for 20 cases.
4. Lasso technic (Zancolli), for 12 cases.
5. Metacarpophalangeal capsuloplasty (Zancolli), for 2 cases.
6. Since 1986 we tried to do Dermadesis for clawhand reconstruction on 20 cases.

Comparing the result of these techniques, we realize that dermadesis is:

- Simplest procedure
- Without post operative reduction
- Can be tried for the first chance.

#### **Percutaneous pin fixation with acrylic cement of the proximal phalanx fracture (A preliminary report)**

*Armis*

Orthopaedic Sub-division, Department of Surgery, Faculty of Medicine, Gajah Mada University, Dr. Sardjito Hospital, Yogyakarta, Indonesia

Seven cases of the proximal phalanx fracture had treated by percutaneous pin fixation with acrylic cement in Emergency unit Dr. Sardjito Hospital and privat patients during February 1986 to August 1986. Two cases was out of control and 5 the rest had continuous follow up 3 months post operatively. Three cases still had stiffness, one case underwent malunion in slight rotation position and one case had excellent result.

#### **Evaluation of hand replantation in Dr. Soetomo Hospital**

*Abdurrahman, Satrio, Djoko Roeshadi*

Orthopaedic Sub Division, Department of Surgery, Airlangga University, Medical Faculty Dr. Soetomo Hospital, Surabaya, Indonesia

There were 9 cases hand replantation have been done in Orthopaedic Sub Division Department of Surgery Airlangga University Medical Faculty since 1982. According to the level amputation, seven of the amputation were digital, to the metacarpal area and two at the wrist.

The result in our series: six were survived, one survive but poor function or partially survived and two totally non survive.

So far, the successful replantation depends on. (1). Ischemic time, (2). Prompt preparation, (3). Surgical technique, (4). Post operative management, (5). Referring medical personal and Public knowledge.

### **Initial microsurgical experiences at the national orthopaedic Hospital**

*Antonio G. Calanoc, Noel B. Carilo, Jesus M. Duenas, Jose M. Pujalte*

National Orthopaedic Hospital, Manila, Philippines.

The purpose of this paper is to present our initial experiences with the hope of improving our microsurgical protocol and offering this particular field to our patients with improving success rates.

After two years preparation from basic surgical microsurgical technique to experimental canine replantation, we have now embarked on clinical cases. Eight cases of free vascularized fibular grafting, large bone defects secondary to type III open fractures, three cases of giant cell tumor of the radius, and one case of congenital pseudoarthrosis of the tibia. We had two cases of palmar sympathectomy for Burger's Disease and one case of composite skin graft.

Overall initial efforts were rewarding for our patient and the results gratifying for the microsurgical unit.

We hope that this procedure will be an added armamentarium in orthopaedic surgery in the Philippines.

### **Clinicopathologic features of tuberculous arthritis of the extremities (A prospective study of 55 cases)**

*Antonio M. Montalban, Ramon G. Soriano, Adelwisa R. Ortega, Venancio P. Garduce, Ma Rasario R. de la Flor, Steve B. Dofitas*

UP-PGH Medical Center, Manila, Philippines.

Fifty-five cases of tuberculous arthhritis of the extremities were studied in this paper. The knee and hip were the most common sites of involvement. No age preference has been seen and the ESR was non-specific.

Fifty per cent of patients with tuberculous arthritis had concomittent pulmonary tuberculosis. Bacteriologic studies using the Lowenstein Jensen inoculation technique was positive in only 7.3 per cent. The histopathologic examination however, showed chronic granulomatous inflammation with caseation necrosis in 89.1 per cent cases.

### **Corrective osteotomy for cubitus varus deformity from supracondylar fractures of the humerus in childhood**

*Wong Hee Kit, Lee Eng Hin*

Department of Orthopaedic Surgery, National University Hospital, Singapore

Cubitus varus is the most common complication of

supracondylar fractures of the humerus in childhood. The problem is predominantly cosmetic, and any corrective surgery must achieve the desired cosmetic effect.

The results of supracondylar closing wedge osteotomy using Kirschner wire fixation were studied in 18 patients with cubitus varus. The average age at operation was 9 years. Lateral or posterior incisions were used.

Fourteen patients had correction of their carrying angles to valgus. Of these, 10 patients had correction to within 5 degrees of the opposite elbow. Four patients had residual cubitus varus deformity of between 2 and 5 degrees. There was no significant loss of elbow movement postoperatively. Three patients had pin tract infection. There were no major complications.

Although correction of the carrying angle was achieved in 14 patients, many of these patients have a poor cosmetic result due to prominence of the lateral condyle and hypertrophic scars from a lateral incision.

Closing wedge osteotomy and Kirschner wire fixation is a safe and reliable method of correcting cubitus varus deformity. However, to optimise the cosmetic results a posterior incision and a medial shift of the distal fragment at the time of osteotomy are recommended.

### **Ceramic total hip replacement in hip joint arthritis**

*Basuki, Achmad Sjarwani, Djoko Roeshadi*

Orthopaedic Sub Division, Department of Surgery, Airlangga University, Medical Faculty Dr. Soetomy Hospital, Surabaya, Indonesia.

The problem of hip joint arthritis was frequently encountered at the orthopaedic outpatient clinic with different ages and causes.

Many procedures are known to deal with this problem, one of that is total hip replacement. The ceramic total hip replacement has certain advantages, it could be used on young age.

During two years period recorded (1984 - 1986), 15 cases of ceramic total hip replacement had been done with the youngest is 29 years and oldest is 48 years, sex distribution 2 females and 13 males.

The results, 13 cases were satisfied (86.6%) and 2 cases less satisfied (18.4%). Less satisfied cases, one due to bad gait and the other one due to painful condition of several joints.

The postero lateral approach is favorable, in our experiences.

### **Semitubular plates fabricated from Kuntscher nails**

*Teodie M. Flores, Rimando Saguin, Jose M. Pujalte*

National Orthopaedic Hospital, Philippines.

Because of orthopaedic ward congestion in the Philippines, and expensive internal fixation devices, it motivated the innovation of fabricating semitubular plates from scraps of the Kuntscher Nails. Fabrication and biomechanical studies were started February 1983.

Confidently, after almost a year of biological and mechanical study, implantation among indigent patients where semitubular plates were indicated and was started in January 1984.

The objectives were to convince through simulated human mechanical stresses the rigidity and limits of the fabricated plate and to investigate its biological compatibility with human tissues.

Clinical and radiological evaluations were done in 103 patients with the fabricated plates. These patients after a year of follow up did not complain of local pain, warmth, and swelling. Monthly radiological evaluation showed no sign of loosening, metal fatigue nor fragment displacement. Evidences of healing were satisfactory within the usual period showed by commercial plates.

This innovation had made such internal fixation device readily available and financially convenient to relieve ward congestion during our time of economic crisis.

It has encouraged other innovations with the Kuntscher nail as its source.

#### Results of treatment of old elbow dislocation

*Mulyana Hasan, H. Soelarto Reksoprodjo*

Department of Orthopaedic Surgery, School of Medicine University of Indonesia, Ciptomangunkusumo General Hospital, Jakarta, Indonesia.

From July 1985 to June 1986 we had 12 patients with old elbow dislocation. Eleven patients had been operated on and one patient refused surgery.

We performed open reduction and arthrolysis; 10 cases through a bilateral approach and 1 case through a lateral approach.

Post operatively the joint was immobilized with a back slab for two weeks, subsequently active assisted exercise gradually improved the range of motion of the joint.

The average length of follow up was 15.9 weeks (range between 8 to 28 weeks).

The average and result of the range of motion in extension to flexion was 106.4 degrees. The average extension was - 8.2 degrees (range -20 to 0 degrees).

The average flexion was 114.5 degrees (range 90 to 145 degrees).

The average end result of the range of motion in pronation to supination was 154.4 degrees. The average pronation was 70.9 degrees (range 45 to 90 degrees). The average supination was 84.5 degrees (range 60 to 90 degrees).

#### Treatment of osteosarcoma with recent preoperative chemotherapy

*Hiroshi Miki, Akio T., Mitsutoshi A., Shogen C., Masayuki Y., Kiyomichi H., Shozo H.*

Department of Orthopaedic Surgery, Teikyo University, School of Medicine, Japan.

The effects of preoperative aggressive chemotherapy

for osteosarcoma using Adriamycin (ADR), Methotrexate (MTX), Cis-Platinum (CDDP) and Mitomycine (MMC) will be presented.

Fourty four patients treated during September 1978 to May 1986, are monitored in this paper. Clinical, radiographic, angiographic and pathological effects were analyzed in these cases. Quantitative analysis the necrotic ratio of the tumor cells was performed in 37 cases.

The necrotic ratio was more than 80 per cent in 25 cases, 50 - 80 per cent in 8 cases and less than 50 per cent in 4 cases.

Since 1982, the administration of CDDP was added to our protocol. In such cases, the reduction or complete disappearance of pain and decrease in tumor size were observed in most cases. Angiographic response were evaluated by reduction of tumor neovascularity. On the X-ray film, the demarcation of the extraskelatal tumor mass and sclerotic change were observed. The cumulative survival rates of our cases are as follows: one year, 87.8 per cent; three years, 60.90 per cent; and five years, 58.5 per cent.

#### Resection and reconstruction for malignant and potentially malignant bone tumors

*P.T. Simatupang*

Department of Surgery, Gatot Subroto Army Hospital, Jakarta, Indonesia.

Six patients with malignant or potentially malignant bone tumors (osteogenic sarcoma, giant cell tumor and chondroblastoma) located in the proximal end of tibia, distal end of femur and proximal end of humerus were treated by local resection and autoclaved and employing rigid internal fixation, there was one local recurrence. The joints were in good function and so were the life-style.

#### Multifocal osteosarcoma in childhood (Case report)

*Errol Untung Hutagalung*

Department of Orthopaedic Surgery, School of Medicine, University of Indonesia, Ciptomangunkusumo General Hospital, Jakarta, Indonesia.

A case of a 9 years old boy with multifocal osteosarcoma is reported. This is the first case ever reported in Indonesia.

In the literature there are 72 possible cases of multifocal osteosarcoma which after a review by Mahoney, Spanier and Morris, there remain only 15 cases of documented reports of multifocal osteosarcoma.

#### Thoracic cord compression in hereditary multiple exostosis

*Andi Wisnubaroto, Chehab Rukni Hilmy*

Department of Orthopaedic Surgery, School of Medicine University of Indonesia, Ciptomangunkusumo General Hospital, Jakarta, Indonesia.

Hereditary multiple exostosis of the thoracic spine is very rare.

A case of hereditary multiple exostosis with compression of the spinal cord at the thoracic level is reported.

A good result was achieved after laminectomy and excision of the tumor was done.

#### **Van buchem's disease**

*Agung P. Sutyoso, Soelarto Reksoprodjo*

Department of Orthopaedic Surgery, School of Medicine University of Indonesia, Ciptomangunkusumo General Hospital, Jakarta, Indonesia.

A rare case report of a probable Van Buchem's disease is presented in addition to other reported cases.

It was accidentally found in an adult Indonesian male of Arabic descent with a pathological left subtrochanteric femoral fracture.

The criteria for the diagnosis based on the literature and other forms of diaphyseal dysplasia are included.

#### **Simple reconstructive surgery after tumor ablation**

*Ahmad Rizal Riyai*

Department of Surgery, Dr. Djamil Hospital, Padang, Indonesia.

The simple reconstruction surgery had been done in 4 patients with benign bone tumor following radial resection of tumor.

The first patient had an aneurysmal bone cyst of mid femur and had been treated by plate-screw and bone graft.

The other patients had a giant cell tumor involving distal radius, distal femur and trochanter femur.

The methods of surgical treatment are Fibulo pro radius, Juvara plastic procedures and long stem Austin Moore prothesis.

The simple reconstructive surgery after ablation for benign tumors of mid femur, distal radius, distal femur and trochanter femur were presented.