

## ABSTRACTS

ABSTRACTS OF PAPER READ AT THE VI SINGAPORE - MALAYSIA  
CONGRESS OF MEDICINE, SINGAPORE

5th - 8th AUGUST, 1971 — ORTHOPAEDIC LECTURE THEATRE

## PROBLEM OF SCOLIOSIS IN SINGAPORE

Pesi B. Chacha and V. K. Pillay

All cases of scoliosis that could be traced from the records of the University Department of Orthopaedic Surgery between the years 1953 and 1971 were studied. This paper presents the age, sex and racial distribution, the common etiological factors responsible, the curve patterns and the degree of severity of the curves. A brief assessment of the treatment in the past and in recent years is made.

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INCIDENCE OF CONGENITAL  
ORTHOPAEDIC CONDITIONS  
IN THE NEWBORN

Cheng Wei Nien

Various congenital deformities are seen in Singapore, but so far no accurate figures covering incidence are available. Between the 1st of December 1967 and 28th of February 1968, 8,112 consecutive newborns in Kandang Kerbau Hospital were examined and the incidence of some congenital orthopaedic condition was determined. The result showed that there were racial variations in the incidence of the various conditions. This variation is reflected in the same ratio when compared with the cases treated in Singapore between 1962 and 1966.

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BRONCHOPLASTIC PROCEDURES  
IN THE MANAGEMENT OF LESIONS  
OF THE BRONCHUS

N. C. Tan

Bronchoplastic procedures on the bronchus are relatively infrequently done as the lesions requiring and suitable for such procedures are uncommon and not often seen.

This paper reports 5 interesting patients who have had bronchoplastic procedures done on them with preservation of both lung function and pulmonary vascular bed. These patients were collected over a period of 7 years.

Two of these patients had tuberculous strictures of the bronchus—one in the left main bronchus and one in the right main bronchus. Different

procedures were done on them with very satisfactory results.

Two other patients had traumatic transection of the left main bronchus following a vehicular accident with complete collapse of the lung. The traumatised ends were freshened and sutured together with complete salvage of the lung. Both are well.

The last patient had a fibrous polyp in his left main bronchus with complete ball-valve obstruction to his left lung and collapse of his left lower lobe. A wedge resection, to include the base of the polyp, with reconstruction was done with a resulting normal bronchial tree.

In this paper, a short review of the development of bronchoplastic procedures, the clinical features of these patients, the techniques used and the end result will be presented.

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AN EPIDEMIC OF CONJUNCTIVITIS  
IN SINGAPORE IN 1970

Lim Kuang Hui and M. Yin-Murphy

A sudden outbreak of acute conjunctivitis of rapid onset assumed epidemic proportions in Singapore during September through October, 1970. The epidemic was unusual in size and nature, thus prompting publicity in the local press. At its peak, 60,118 cases were reported from the Government outpatient clinics for the 2 months. The infection was caused by viruses of hitherto unestablished identity.

A clinical study was conducted during the beginning, the height, and the end of the epidemic. Thirty of 55 patients (55%) investigated showed positive virus isolation. Fifty patients (91%) had complement fixing anti-bodies to group specific adenovirus antigen. Thirty-two (58%) showed a secondary bacterial infection. The virus isolates were not neutralised by adenotypes 3, 7 and 8 immune sera and are being studied further for their identification.

The pattern of bacterial infection and anti-biotic sensitivity is described. Severe conjunctivitis characterised by lid swelling, ptosis, discharge, sub-conjunctival haemorrhage, pre-auricular gland adenitis and rapid recovery were

observed at the beginning, while corneal lesions were regularly seen at the end of the epidemic.

A double-blind therapeutic trial to establish the value of topical Hydrocortisone in treating the infection concludes the study.

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### CATARACT SURGERY WITH SPECIAL REFERENCE TO THE OPERATING MICROSCOPE

Arthur Lim Siew Ming

This paper analyses 1,000 cataract operations done with various techniques. The last 287 cases were performed with a complete conjunctival flap and multiple corneo-scleral sutures which gave better results.

More recently, the operating microscope was used. The distinct advantage was the higher magnification. This together with the introduction of finer suture material and instruments have made it possible to attain greater precision especially when inserting corneo-scleral sutures. The more accurate apposition of the corneo-scleral wound minimised post-operative complications such as flat anterior chamber, hyphema, iris prolapse, secondary glaucoma, and high astigmatism.

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### CRYOEXTRACTION OF SENILE CATARACTS—A MODIFIED APPROACH

K. L. Chew and R. C. K. Loh

A modified approach in the extraction of Senile Cataracts by using the cryogenic probe will be presented.

The results of some eighty intracapsular extractions done by this method will be analysed. A comparison of this method of extraction employing a smaller incision, multiple buried sutures, chymotrypsin and the Amoil's cryoprobe with standard and other modified methods will be made. An attempt to demonstrate the increased safety of this modified method, at the same time allowing earlier ambulation will be made in this paper.

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### CRYOEXTRACTION OF SENILE CATARACTS—A MODIFIED APPROACH FILM

K. L. Chew and R. C. K. Loh

A film will be presented to demonstrate this modified approach to the cryoextraction of Senile Cataracts employing a smaller section, multiple buried sutures and enzymatic zonulysis.

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### PARTIAL NEPHRECTOMY—A SURVEY OF 48 CASES

K. T. Chan and K. C. Chee

A series of 49 partial nephrectomies in 48 patients are reviewed.

There were 42 lower pole, six partial pole partial nephrectomies and one middle segment partial nephrectomy.

Indications for operation are renal calculi, trauma, infection and vascular abnormality; the most common indication is calculus disease with renal damage.

There were no special operative difficulties. The average occlusion time is 15 minutes and the average blood replacement is just below 400 ml.

There were two deaths and three patients had the secondary haemorrhage, two of whom needed secondary nephrectomy.

Other details of results and complications will also be discussed.

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### MANAGEMENT OF HEPATIC AND PORTO-CAVAL SHUNT SURGERY—PROBLEMS FACED BY THE ANAESTHETIST

G. T. Law

This paper presents a review of the problems faced by the Anaesthetist in the management of patients undergoing hepatic and porto-caval shunt surgery.

Pre-operatively we, as anaesthetist, had to assess and treat the haematological, cardiovascular and respiratory systems of these patients. Minimum pre-operative drugs were given. Drugs which are used to sterilize the gastro-intestinal tract and which may later affect the actions of muscle relaxants are avoided. The electrolyte and fluid balance were maintained as near to normal as possible.

The method of choice is a relaxant (tubarine or pancuronium), nitrous oxide and oxygen. The use of toxic drugs during anaesthesia were avoided. The following physiological parameters were monitored: namely, blood pressure, pulse rate, central venous pressure, blood loss, intake and output of water and electrolytes, and E.C.G. monitoring if required. A discussion will also be made on the problems of blood replacement and the use of plasma expanders.

Post-operatively, the problems of sedation, types of drugs and the amount to be given will be discussed. An output of 30 mls. or more per hour was regarded by us as essential. If the output was less than 30 mls./hour, and other things being normal, a forced diuresis regime was instituted at once.

Constant monitoring of the patients during the first six hours after the operation was made routinely. Most of the patients were kept in the INTENSIVE CARE UNIT.

A discussion will be made on the morbidity and mortality, and this will be compared with the figure quoted by other international authorities.

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#### POST-OPERATIVE BURST ABDOMEN

S. C. Ong and N. K. Yong

This study covers 26 cases of post-operative burst abdomen which occurred over a 3½-year period in the adult surgical population of the University of Malaya Hospital. The complication was associated with a mortality rate of 27% and a prolonged hospital stay in the survivors. Related factors, including the technique of abdominal closure and the suture material used, were analysed. The authors are of the opinion that a "unit closure" beneath the skin, employing an inert suture material such as stainless steel wire, placed in an interrupted fashion, would minimize the occurrence of burst abdomen.

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#### ORIENTAL CHOLANGITIS IN MALAYSIA

I. G. E. Cunningham and N. K. Yong

Reports from Hong Kong, Singapore and Korea have pointed to the existence of a disease of the biliary system which is characterised by recurrent attacks of calculi in the biliary ducts and ascending cholangitis. This report presents a preliminary review of our experiences at the University Hospital in Kuala Lumpur with this clinical entity. The clinical features are reviewed with a view to establishing diagnostic criteria which will help to distinguish it from the western type of cholelithiasis. On the basis of this initial experience, a plan of treatment is proposed.

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#### SUBPHRENIC ABSCESS

W. Low and S. H. Wong

Subphrenic abscesses are becoming infrequent in most surgical services. The clinical picture has changed from the acute septic course to one of subacute and chronic ill health.

Our clinical impression is that there is an unduly high incidence of this complication in our surgical service and this presentation reviews our experiences in 32 cases treated over the past 3 years. The commonest antecedent conditions were amoebic liver abscesses, appendicitis and its complications, gastro-duodenal and biliary

tract surgery. The frequency of this condition at the Hospital of the University of Malaya is compared to other centres.

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#### PANCREATICO-DUODENECTOMY FOR CARCINOMA IS IT WORTH IT?

Rajmohan Nambiar

Resection for carcinoma of the head of the pancreas involves removal of the whole of the duodenum, part of the stomach and lower part of the common bile duct. Reconstruction is associated with technical problems in the triple anastomoses. This procedure is associated with a high mortality and post-operative morbidity and the results in terms of five year survival has been reported to be of limited value. In view of this, some authorities have favoured a simpler but palliative bypass operation.

This paper is based on a personal series of six consecutive pancreaticoduodenectomy operations performed within the last three years without an operative mortality. The indications for staging of operation, the value of pre-operative percutaneous transhepatic cholangiogram and the problems in technique and post-operative management are outlined.

It is suggested that this operation is a very worthwhile procedure in early carcinoma of the head of the pancreas, ampulla and lower end of the common bile duct.

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#### QUANTITATIVE HISTOLOGY OF BONE IN RENAL FAILURE

Joan P. Ingham, Raymond Garrick  
John H. Stewart and Solomon Posen

Three groups of patients with chronic renal disease were subjected to iliac crest biopsy:

1. Unselected patients who were on the point of entering the chronic dialysis/transplantation programme.
2. Patients who had undergone a renal transplant 6-24 months prior to this study.
3. A group of patients with renal failure who were referred because of skeletal pain.

Half the unselected patients entering the dialysis programme (15/30) had hyperparathyroidism, severe in 8 cases. Mild osteomalacia occurred in a third (10/30) whilst severe osteomalacia and osteoporosis were not seen prior to dialysis. The patients in whom a renal transplant had been performed showed less hyperparathyroidism but more osteoporosis than the patients

about to enter the dialysis programme. Several patients referred because of pain had severe osteomalacia.

It was concluded that gross osteomalacia is not a feature in the majority of patients with chronic renal failure. The development of this lesion in a few individuals probably depends on the presence of extraneous factors.

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#### THE BONES AFTER GASTRECTOMY— A PROSPECTIVE HISTOLOGICAL STUDY

Raymond Garrick, Anthony W. Ireland  
and Solomon Posen

Thirty-six patients who had undergone gastric surgery for non-malignant conditions were subjected to iliac crest biopsy regardless of the presence or absence of symptoms. The undecalcified section showed abnormally large amounts of ostoid (= osteomalacia) in fifteen patients, a reduction in total bone (= osteoporosis) in one patient and a combination of the two abnormalities in five patients. Musculo-skeletal symptoms were present in only seven of the sixteen patients and radiological signs of osteomalacia were present in only one patient.

Post-gastrectomy osteomalacia is more common than generally believed. In the majority of patients it is not accompanied by clinical, radiological or biochemical abnormalities.

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#### MUCOSA-STRIPPING BIOPSY OF THE NASOPHARYNX—WITH SPECIAL REFERENCE TO ITS VALUE IN THE DIAGNOSIS OF MALIGNANT NASOPHARYNGEAL NEOPLASMS

H. H. Tschang

Biopsy of macroscopic nasopharyngeal lesions generally presents no difficulty. However, the same cannot be said of microscopic lesions, which are often missed by the conventional punch biopsy. The author has devised and employed usefully a simple technique of MUCOSA-STRIPPING BIOPSY on a variety of suspected nasopharyngeal lesions, notably, carcinoma of the nasopharynx, which is one of the commonest cancers in Malaysia.

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#### MALIGNANT MELANOMAS OF THE UPPER RESPIRATORY TRACT

C. H. Law, E. H. Goh and K. Shanmugaratnam

Malignant melanomas arising from mucous membranes of the upper respiratory tract are

relatively rare tumours. The overwhelming majority of these neoplasms originates from the nasal cavity and sinuses.

This study is based on the records of the Singapore Institute of Pathology from 1950 to 1970. During this 21 year period, there were 6 cases of this form of malignancy, of which 4 originated from the nasal cavity, 1 from the maxilla and 1 from the nasopharynx. The epidemiological, clinical and pathological features of this series will be presented.

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#### “EXFOLIATIVE CYTOLOGY OF NASOPHARYNGEAL CARCINOMA”

Lee Swee Kok and Thomas Sim Wong Chin

A preliminary investigation into the cytological diagnosis of nasopharyngeal carcinoma involved 104 patients, of which 18 had clinically obvious nasopharyngeal carcinoma, 77 were clinically suspicious of having the lesion, and the remainder had no clinical evidence of the disease.

Washings from the nasopharyngeal space were examined for malignant cells with the aid of the Papanicolaou staining technique. In each case a punch biopsy of the suspicious site was also performed after the washings had been obtained; and the specimen was then examined histologically by the usual paraffin embedding method.

38 cases of nasopharyngeal carcinoma were detected by the histological procedure. In 28 of these the smears were found to be cytologically positive for malignant cells; in 1 case the smear was negative; and in 7 instances the cells were lysed, making them unsuitable for cytodiagnosis.

There were 3 washings which contained malignant cells, though the corresponding histological preparations were negative for malignancy. Of these, 1 died of cardiac tamponade shortly after the study, and 2 failed to appear during the follow-up period. The remaining 63 cases had no evidence of malignancy both histologically and cytologically.

This study stresses the following:

1. Cytological diagnosis as a screening procedure for Nasopharyngeal Carcinoma.
2. Reliable method of obtaining nasopharyngeal washings for cytodiagnosis.
3. The place of the Papanicolaou stain in nasopharyngeal cytodiagnosis.
4. Cytological features of exfoliated Nasopharyngeal Carcinomatous cells.

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**TWO CASES OF POLYOSTOTIC FIBROUS DYSPLASIA WITH PRECOCIOUS PUBERTY**

Christine Ewan, Solomon Posen  
and Robert H. Vines

Two girls with Albright's Syndrome will be presented. Both had classical skin pigmentation, lytic lesions in multiple bones, early vaginal bleeding and early breast development. Serum luteinizing hormone was abnormally high, suggesting a pituitary or hypothalamic cause for the endocrine abnormality. The therapeutic problems associated with this disease will be discussed.

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**SERUM PROGESTERONE IN NORMAL PREGNANCY AND IN TROPHOBLASTIC DISEASE MEASURED BY A COMPETITIVE PROTEIN-BINDING METHOD**

Eng Soon Teoh, N. P. Das  
M. Yusoff Dawood and S. S. Ratnam

Serum progesterone was determined by a competitive protein binding assay capable of measuring 0.5 nanogram/ml. progesterone with an accuracy of  $\pm 10$  percent. When progesterone was extracted with petroleum ether, small amounts of 17 alpha-hydroxyprogesterone and 20 alpha-hydroxyprogesterone were also carried over in the ether fraction but these accounted for less than 5 percent of the steroid measured by the CPB method. Clinical measurements of progesterone could thus be made without the time-consuming chromatographic separation.

Serum samples from 200 normal pregnancies and 200 samples from 20 patients with trophoblastic disease before, during and after treatment were assayed for progesterone. In normal pregnancy the level of serum progesterone rises from 11 ng./ml. at 6 weeks to 150 ng./ml. at term. In an intact hydatidiform mole the mean serum progesterone level was three times that found in normal pregnancy. Small amounts of progesterone were present in choriocarcinoma.

The evidence indicate that the tumour trophoblast and the ovaries both secrete progesterone and the relative contributions from these two sources will be discussed.

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**THE RELATIONSHIP BETWEEN ABO BLOOD GROUP AND TROPHOBLASTIC DISEASE**

M. Yusoff, Eng Soon Teoh and S. S. Ratnam

Earlier studies of hydatidiform moles and choriocarcinoma have suggested a shift in ABO blood group from O towards A, B and AB and have invoked failure of maternal immunological

defence as a possible factor in choriocarcinoma (Scott, 1962; Llewelyn Jones, 1965).

The present study compares the ABO blood group distribution of the normal Singapore population with 351 cases of hydatidiform moles and 78 cases of choriocarcinoma. There was no significant shift in the ABO blood group distribution in hydatidiform mole. In contrast, there was a statistically significant increase in the incidence of blood group A (P 0.002) and a significant decrease of blood group B (P 0.01) in choriocarcinoma. This shift in ABO blood group distribution is not due to race. The higher mortality of group AB choriocarcinoma is noted. There was no definite pattern in the relationship between ABO blood group and the amount of chemotherapy required to produce remission.

The authors suggest that an enzyme deficiency could account for the predominance of blood group A in choriocarcinoma.

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**MALIGNANT SEQUELAE OF HYDATIDIFORM MOLAR PREGNANCY—A STUDY OF NATURAL HISTORY AND EFFECTS OF TREATMENT**

Lawrence Chan, T. C. Lim, M. Y. Dawood  
E. S. Teoh and S. S. Ratnam

This study aims to elucidate the nature of malignant trophoblastic disease following molar pregnancy and the modification of the natural history by treatment.

From July 1966 to December 1970 the University Unit of the K. K. Hospital treated 97 patients with hydatidiform molar pregnancies. Ten patients developed malignant trophoblastic disease.

TABLE I

Clinical choriocarcinoma	6 patients
Villous choriocarcinoma	4 patients
Avillous choriocarcinoma	Nil

The patients were young (average age 26.6 years) and of low parity (average 1). Four had pulmonary metastases concomitant with molar pregnancy and 6 began to have pulmonary shadows 5 days to 3 months following the molar pregnancy. In addition to lung metastases, 4 had growths in the uterus which were invasive moles.

Methotrexate was given to 9 patients but not to one because of hepatitis. Two had hysterectomy performed for perforating moles.

TABLE II

Alive and in remission	8 patients
Alive not in remission	1 patient
Died	1 patient

The one patient not in remission was resistant to methotrexate. The one who died was in remission but developed a cerebral embolus during intravenous methotrexate therapy through right external jugular vein. Eight patients were in remission and well.

## DISCUSSION

It is found that close follow-up of patients with molar pregnancy detects malignant trophoblastic disease in about 10 percent. This is usually villous choriocarcinoma and treatment will eradicate the neoplasm and prevent avillous choriocarcinoma. This is an example of early detection of carcinoma in the less malignant stage when therapy achieves good prognosis.

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### POSTMENOPAUSAL BLEEDING (A RETROSPECTIVE STUDY OF 150 CASES)

C. T. Chew and S. S. Ratnam

The object of this paper is to appraise the magnitude of the problem of postmenopausal bleeding in Singapore. Between January 1968 to December 1970, 150 patients, who had resumption of bleeding from the genital tract 6 months or more following the cessation of menstruation were treated at the University Department of Obstetrics and Gynaecology, Kangar Kerbau Hospital.

From the analysis of the case records of these patients, 39.3% was found to have a malignant lesion and 44.7% was found to have a benign lesion. In 16%, no apparent cause could be discovered in spite of meticulous investigations and follow-up. The most common age group at which bleeding occurred was between 51 to 55 years. The average age at which bleeding occurred from a benign lesion was 55.4 years, while the average age from a malignant lesion was 60.2 years. The average age of onset of menopause in the series was 49 years and no appreciable difference could be ascertained in the age of onset of menopause in those with benign or malignant lesions (49.2 and 48.8 years respectively). The interval between the onset of menopause and the resumption of bleeding appear to have some bearing on the nature of the lesion. Thus more than 60% of the cases with malignancy had an interval of 10 years or more. More than 50% of the cases presented with only slight bleeding which had no relationship to the seriousness of the lesion. Only 66% of the patients sought treatment within one month of bleeding. Of the malignant lesions, cervical cancer was the most common cause for the bleeding, and the majority of these cases were in the advanced stages of the disease discovered on first consultation. Of the benign

lesions, functional endometrial change was the most common case. Of the 24 patients in whom no cause of bleeding could be established, none had any recurrent bleeding after dilatation and curettage.

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### SUICIDES AND THE MENSTRUAL CYCLE

T. C. Chao

It is known that in the pre-menstrual and menstrual phase of the menstrual cycle the majority of women undergo a period of increased irritability, feeling of depression and hopelessness. In an analysis of 55 consecutive cases of suicides among females aged 15 to 45 years that came to postmortem during 1969 and 1970, it is found that 92% of these women were in the pre-menstrual or menstrual phases. The majority—42% committed suicide because of unhappy love affairs and 26% due to some family quarrels. This supports the view that the pre-menstrual and menstrual period are the most hazardous periods in the menstrual cycle.

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### REGIONAL INSULINISATION

A. L. Gwee, T. S. Yeoh and Y. F. Tay

Insulin is given parenterally by the intravenous route, and has been used in the treatment of schizophrenia. However, the hypoglycaemic coma that followed made the procedure unpopular, because of the difficulties of management and potential hazards. If insulin can be given by another route e.g. carotid, then a satisfactory regional level may be achieved without the attending troublesome hypoglycaemia.

Animal studies were made using rabbits to explore the effect of intra-carotid insulin and its safety. The results showed that irrespective of the routes, the systemic effect is similar. Also the technique is easy and free of observable risk. A high brain level can be attained without troublesome hypoglycaemic coma.

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### AN ORIGINAL METHOD OF HAEMODILUTION FOR EXTRACORPOREAL CIRCULATION

Dixie Tan and N. C. Tan

Haemodilution is widely practised in the priming of heart-lung machines for open-heart surgery. An electrolyte solution is usually used to reduce the haematocrit of the blood in the pump-patient circuit.

Haemodilution prevents aggregation of blood cells during heart-lung bypass, promotes diuresis which prevents renal shutdown after bypass, and

saves considerable amounts of blood. On the other hand, dilution of blood cells decreases oxygen transport while dilution of the plasma reduces its effective osmotic pressure. A haematocrit of 30% is accepted as a satisfactory compromise which meets the oxygen requirements for body metabolism and the limitations imposed by extracorporeal circulation and hypothermia.

Current methods of computing the volume of diluent is based on a fixed blood to diluent ratio or the patient's weight. The authors devised a method of calculation which takes into account the body surface area, sex and pre-operative haematocrit of the patient.

A series of 212 patients were studied to assess the accuracy of this method of calculation, using the haematocrit of a blood sample taken 30 minutes after onset of heart-lung bypass. A good result is defined as a haematocrit between 27% and 33%, and a fair result between haematocrit 25% and 35%. These results were analysed for body weight, sex, pre-operative haematocrit and direction of cardiac shunt.

The overall result was good in 57% and fair in 78% of patients. There was no significant difference in the result for variations in body weight, sex and pre-operative haematocrit. The success rate was significantly higher for patients with cardiac shunts compared with those without shunts.

This method of calculation for volume of diluent used in the heart-lung machine has proven to be particularly useful for children and patients with extremes of haematocrit.

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### BUERGER'S SYNDROME IN JAVA

G. L. Hill

30 patients with limb ischemia of the four limbs, youthful type have been studied and compared with a group of matched controls.

The sample for this study was drawn from a group of patients admitted to the hospitals of West Java with the diagnosis of Buerger's disease.

The Clinical Syndrome is the Study group is described in detail, and the results of an enquiry into a large number of possible etiologic factors will be presented.

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### MAJOR ARRHYTHMIAS IN THE CORONARY CARE UNIT

S. H. Wan, C. C. S. Toh, L. P. Low and C. H. Lim

Over a period of two and half years, 339 patients with the established diagnosis of Acute

Myocardial Infarction (A.M.I.) were monitored for 72 hours or more in the Coronary Care Unit (C.C.U.). Of these, 83% were observed to have at least one episode of arrhythmia or conduction disturbance at some time. The incidence of "Major Arrhythmias", defined as serious arrhythmias likely to lead to haemodynamic disturbances, was 54%.

Sinus Tachycardia was more common in anterior infarcts (50%) than in inferior infarcts (29%), whereas Sinus Bradycardia appeared more common in inferior infarcts (29%) than in anterior infarcts (21%).

Sino-atrial arrest occurred in 6% of patients, being associated with a 75% mortality.

Some 7% of patients developed atrial fibrillation with peak incidence in the first 12 hours. Its incidence climbed progressively with age.

Ventricular Premature Contractions (V.P.C.) at less than one-in-ten frequency occurred equally often in anterior and inferior infarcts (about 18%)—relatively benign. However, V.P.C. at more than one-in-ten frequency reflected poor prognosis and they occurred in 25% of anterior infarcts as compared to 17.5% amongst the posterior infarcts.

Ventricular Fibrillation and Tachycardia had identical incidence of 8%, and both were more common among posterior infarcts (12% and 11% respectively) than anterior infarcts (5% and 7% respectively).

The incidences for first, second and third degree atrioventricular block were 11.5%, 7.3%, and 6.5% respectively. First degree atrio-ventricular block seemed rather stable in uncomplicated infarcts but progressive in infarcts associated with cardiac failure and shock. About one-quarter of the total deaths occurred in third degree block.

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### MANAGEMENT OF HYPERTENSION WITH DEBRISOQUINE SULPHATE

J. A. Tambyah, M. Yap and Seah Cheng Siang

Debrisoquine sulphate is a hypotensive agent which blocks post-ganglionic sympathetic activity without depletion of peripheral stores of noradrenaline. Previous workers have commented favourably on the relatively few side effects encountered and hence we set out to evaluate the drug in 30 patients, 17 males and 13 females, over a period ranging from 10 to 22 months.

Twenty six patients who completed the trial are available for analysis. Reduction of the standing diastolic blood pressure below 100 mm. Hg. was obtained in 21 patients. Severe postural hypotension in two patients and impotence in

one, necessitated the withdrawal of the drug. No adverse change in haematological or biochemical parameters studied were noted. An illustrative case will be presented.

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A REPORT ON THE SURGICAL  
TREATMENT OF CARDIAC DISEASE  
IN SINGAPORE

N. C. Tan and Dixie Tan

This report reviews the cases with heart disease that were treated surgically in Singapore from September 1965 to May 1971. Initially the operations were undertaken at the Unit of the Senior Surgeon, Outram Road General Hospital, Singapore, where only closed heart procedures were done.

From January 1967, all the cases were done at the Cardio-Thoracic Unit, Tan Tock Seng Hospital, Singapore. Open Heart was re-established in Singapore in February 1967.

To date, 771 cases with cardiac disease underwent surgical treatment. Of these, 561 patients had congenital heart lesions. 317 of them had closed heart procedures done and 244 had open heart corrective procedures. The mortality in the group that had closed heart procedures done on them were 3.8% and those who had open heart procedures done on them were 5.6%. The mortality occurred mainly in the cases with cyanotic heart disease whether they had a shunt operation or a total correction done on them.

The patients with acquired heart disease numbered 210. These consisted largely of patients with mitral stenosis who had closed mitral valvotomy done on them—forming 193 patients in this group of 210 patients. The mortality in this group was 3.4% and were all due to cerebral embolism which occurred at the time of the mitral valvotomy. Three late deaths occurred in the patients after valvotomy as a result of subacute bacterial endocarditis.

The overall mortality in these 771 patients who had surgical procedures done on them was around 4.0%.

This paper will set out the conditions that have been treated surgically in Singapore—the indications for surgical treatment, the procedures done and the results obtained.

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THE ROLE OF AMNIOSCOPY IN THE  
PREVENTION OF HYPOXIA  
IN POSTMATURITY

K. H. Ng and V. Bhandari

One of the problems in postmaturity is antepartum hypoxia and intrauterine foetal death.

If signs of hypoxia are detected early and treatment instituted early stillbirths can be prevented. A simple method for studying the characteristics of the liquor in pregnancy is by amnioscopy. The volume and colour (meconium) of liquor amnii give a good indication of foetal well-being.

This study was undertaken to assess the accuracy and value of amnioscopy in postmaturity. Patients that were more than one week past term were selected. Amnioscopy was performed at intervals of 2 to 3 days until induction or delivery. When meconium or scanty liquor was detected, labour was induced to prevent intrauterine death from placental insufficiency. During the past year amnioscopy was performed on over 150 occasions. The amnioscopic findings were correlated with the Apgar score at birth and perinatal mortality. There were no perinatal deaths and no increased intrapartum or postpartum infections in this series. We have found amnioscopy to be a simple, safe and useful method for monitoring cases of postmaturity.

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THE PROGNOSTICATION ON THE  
OUTCOME OF INDUCTION OF LABOUR  
BY A METHOD OF PELVIC SCORING

K. S. Khew, C. E. Cheng and S. S. Ratnam

Reports on the rates of induction of labour from various hospitals varied from 5-50% of pregnancies. Five to 20% of these inductions failed to deliver vaginally and had to be delivered by Caesarean section because of poor uterine action and failure of the cervix to reach full dilatation or because of foetal distress in the first stage of labour. Cervical factors appear to have an important role to play in the success or failure of induction of labour (Bishop, 1964; Khew *et al.*, 1968). Bishop (1964) described a system of pelvic scoring with the view of prognosticating the outcome of an induction more accurately. The accuracy of this method of pelvic scoring in prognosticating the outcome of an induction was studied on 553 cases at the University Department of Obstetrics and Gynaecology, Kandang Kerbau Hospital from July 1967 till December 1968.

Prolonged pregnancy and toxæmia of pregnancy formed the bulk of patients for induction. The chances of successful induction of labour among the 553 patients varied from 86.7% to 100% between Score 2 to Score 10. We have shown that the pelvic score increased with the advancement of the period of gestation (Khew *et al.*, 1968), and in this paper the success rate of induction increased with advancement of the period of gestation. The success rate was 97%



for prolonged pregnancy and 94.7% for toxæmia of pregnancy. There being little difference in the success rate of induction between primigravidae and multi-gravidae. The success rate of induction was dependent upon the initial pelvic score rather than on the indication, or the parity of the patient. When the pelvic score was 6 and above the success rate of induction was virtually 100%.

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#### THE VALUE OF CARDIOTOCOGRAPHY IN ASSESSING THE FOETUS WITH MECONIUM-STAINED AMNIOTIC FLUID

Christopher Chen, K. S. Khew, T. C. Lim  
and S. S. Ratnam

Meconium-staining of the amniotic fluid presents a difficult problem in obstetric management because of increased perinatal risk which is not always correlated with the degree of meconium-staining. Ordinary clinical methods of foetal assessment have not always been satisfactory; there is a need for more precise evaluation before deciding whether to await vaginal delivery or to deliver immediately by Caesarean section.

Cardiotocography was therefore employed in a study of 100 patients with various degrees of meconium-staining at the Kandang Kerbau Hospital from November 1970 to April 1971. Of these, 60 had toxæmia, postmaturity, diabetes or bleeding in early pregnancy and 40 were normal antenatally. The Hammacher Cardiotocograph was used to obtain simultaneous recordings of the foetal heart beats and uterine contractions from a transducer strapped to the maternal abdomen. Each recording was made for 10 minutes at regular intervals throughout the first stage of labour.

The patterns recorded were described as undulatory, narrowed undulatory or saltatory, according to the nomenclature of Hammacher; Type I or II dips, according to Caldeyro-Barcia. At delivery, the infants were assessed by Apgar score and categorised as 'good' (score 7-10), 'feeble' (score 4-6), or 'poor' (score 0-3).

Cases with light or moderate meconium-staining were associated with 'feeble' Apgar scores in 9%; heavy meconium-staining, in 39%. Abnormal cardiotocograms were observed in 35% of cases with light or moderate meconium-staining; 50% in heavy meconium-staining. Among these recordings, undulatory, narrowed undulatory and saltatory, with or without Type I dips, 'feeble' scores were noted in 20% of infants. When Type II dips appeared, 70% had 'feeble' scores. Caesarean section was performed for

foetal distress in 9 cases with abnormal cardiotocograms; two-thirds of the infants were 'feeble' at birth. There were no perinatal deaths in the study.

The authors conclude that the degree of meconium-staining does not always reflect the state of the foetus reliably. Cardiotocography provides a more accurate assessment.

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#### CAESAREAN SECTION UNDER LOCAL ANAESTHESIA

N. N. Ling

Anaesthetic hazards in obstetrical surgery are still formidable, especially under the local circumstances.

A detailed description of a case is presented. Heavy emphasis is put on adequate narcosis as premedication, namely the combination of pethidine and sparine. 1% Xylocaine with adrenaline is used for local infiltration. Intravenous diluted pethidine may be required after delivery of the infant. The technique aims at minimal manipulation.

A wide spectrum of indications are included in the small series of 22 cases.

There were no maternal or foetal mortality.

#### DISCUSSION

A noticeable *trend* towards greater use of local anaesthesia is evident even in developed countries.

*Basal narcosis* is a necessary adjunct to local anaesthesia. The modern tranquillizers are especially useful in that they have associated amnesic and antiemetic properties.

*Toxicity of Xylocaine* and its advantages are briefly mentioned.

The disadvantages of *other forms of anaesthesia* vis-a-vis local anaesthesia in obstetrical surgery are elaborated on.

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#### ANTE-PARTUM LOCALISATION OF THE PLACENTA WITH RADIO-ACTIVE ISOTOPE INDIUM ( $^{113m}\text{In}$ )

T. A. Sinnathuray, K. H. Ng and K. S. Lau

Indium-113m ( $^{113m}\text{In}$ ) which is a radio-active isotope of Indium, is derived from the tin generator column  $^{113}\text{Sn} \rightarrow ^{113m}\text{In}$ . The radio-active isotope Indium ( $^{113m}\text{In}$ ) has a very short physical half-life of 1.7 hours, in contrast to physical half-lives of 115 days for tin ( $^{113}\text{Sn}$ ),

8 days for iodine ( $^{131}\text{I}$ ), and 6 hours for technetium ( $^{99\text{m}}\text{Tc}$ ). The dosage of radio-active Indium ( $^{113\text{m}}\text{In}$ ) used for a single placental scan is extremely small, and the resultant radio-activity hazard to the mother and foetus is negligible.

The isotope, when injected into the maternal circulation, is bound to the plasma transferrin molecule and does not appear to cross the placental membrane into the foetal circulation to any extent. After injection of the isotope, and by careful scanning of the "Uterine" area of the abdomen, it has been possible to accurately localise the site of maximal pooling of maternal blood at the site of placental implantation by measuring the area of maximal radio-activity, and in addition obtain photo-scan records, showing the sites of placental localisation.

The results of the study of the first 20 consecutive placental scans undertaken at the University Hospital, University of Malaya, over the past one year in cases of ante-partum haemorrhage or suspected placenta praevia have been analysed and presented in this paper. It is apparent that we have had almost 100% accuracy in localising the site of placental implantation in our study. All the cases reviewed in this paper have been followed to their delivery.

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#### ALPHA-2 MACROGLOBULIN EXCRETION IN PAECULAMPTIC TOXAEMIA

R. Sivasambo and S. E. Aw

The assessment of fetal well-being in cases of PET remains unresolved. Most investigators have taken a more direct approach to the problem and have studied placental insufficiency.

The severity of the toxæmic process has also been related, in general terms, to the condition of the fetus. In this respect attention has been drawn to proteinuria. Proteinuria has hitherto been accredited with a blanket-type of significance because of insufficient information. In the present investigation, knowledge on proteinuria has been carried one step further.

Quantitative estimation of proteinuria was carried out in 45 patients with PET and with no clinical evidence of concomitant or pre-existing renal disease. The urinary content of alpha-2 macroglobulin, a large molecular weight protein, was estimated by immuno-electrophoresis.

Evidence will be presented to show that although the incidence and degree of alpha-2 macroglobinuria is not related to total proteinuria, there is a significant relationship between alpha-2 macroglobinuria and impairment of fetal well-being. Related findings indicate that alpha-2

macroglobulin estimation in urine in cases PET would prove to be a valuable addition to the tests assessing fetal well-being.

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#### THE KIRSCHNER OPERATION— A FORGOTTEN PROCEDURE

G. B. Ong

In 1920 Kirschner described a procedure in which the stomach, after mobilization, was brought to the neck and there anastomosed to the oesophagus. He operated on two cases of benign stricture of the oesophagus. This operation was condemned by Yudin (1944) as being dangerous because of the added anastomosis in the abdomen.

During the past 2 years we have carried out this procedure on 12 patients. We have found this to be effective palliation for cases of malignant oesophagobronchial fistula. For this incurable condition we have isolated the fistula by performing a double bypass operation (Ong and Langenberg, 1970). The Kirschner Operation fulfils this requirement but instead of utilising the jejunum, the stomach is used.

The procedure consists of mobilizing the stomach which is brought up to the neck and there anastomosed to the divided cervical oesophagus. The abdominal oesophagus is transected and a Roux-en-Y anastomosis made between it and a loop of jejunum. The vertical limb should be about 18 inches long. This prevents reflux of jejunal content into the oesophagus. The advantages, complications and results will be discussed.

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#### EXPERIENCE WITH HIRSCHSPRUNG'S DISEASE AT THE UNIVERSITY HOSPITAL KUALA LUMPUR

K. Somasundaram and H. S. Saw

This is a review of our experience with 14 cases of Hirschsprung's Disease treated at the University Hospital in the past 30 months. The series consists of 9 males and 5 females of whom 10 were Chinese, 2 Malays, 1 Indian and 1 Australian. Although the age at presentation showed a wide scatter, all patients had symptoms dating back to infancy. While symptoms included reluctance to feed, diarrhoea, vomiting, and difficulty in meconium passage, the commonest presenting features were constipation and abdominal distension. The standard operative procedure has been a preliminary defunctioning colostomy followed after an interval by a rectosigmoidectomy (by the Duhamel procedure). Postoperatively,

5 patients developed complications from the definitive procedure. There were 2 deaths in this series.

The value of diagnostic procedures such as barium enema and rectal biopsy are discussed.

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### TREATMENT OF BENIGN PROSTATOMEGALY BY INJECTIONS— A TRIAL STUDY

Yahya Cohen, R. Nambiar and R. Ambivagar

The present study is based on reports from India on the successful treatment of benign prostatomegaly using a solution containing phenol 2% and glacial acetic acid 2%.

For the present study, the first one hundred consecutive patients admitted to the Unit of the Senior Surgeon, Outram Road General Hospital, with benign prostatomegaly starting from 5.6.70, were treated by injections of the prostate.

The injections were done by three members of the Unit, Mr. Y. Cohen, Mr. R. Nambiar and Mr. R. Ambivagar. A trial was made of both transrectal and trans-perineal routes of injection and the injections were carried out twice weekly to a maximum number of ten injections per patient.

An analysis of the results is presented, including the subsequent urological history, clinical findings and intravenous pyelogram findings of the patients. The subsequent management of those patients in whom the treatment was unsuccessful is also analysed.

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### HRYNTSCHAK PROSTATECTOMY

Masnan Arifin

A series of 80 consecutive, unselected cases of prostatic hypertrophy requiring open prostatectomy were dealt with by the classical Hryntschak operation. The mortality, morbidity and average post-operative hospital stay have been studied. The indications for this operation and a brief description of the operative techniques are given.

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### EXPERIENCES WITH THE LORDS OPERATION FOR TREATMENT OF HYDROCOELES IN ADULTS

Chin Yuen Fui, F. Proehoeman  
and G. A. Sreenevasan

Various operations have been used for the radical treatment of adult hydrocoeles before Lord described his operation. The older operations developed various complications, the most com-

mon among them were haematocoeles and pyocoeles. It was not uncommon for patients to find after the operation they have in fact exchanged a soft fluctuant scotal swelling for a harder bigger one.

Lord first described his operation in his paper, "A bloodless Operation for the Radical Cure of Idiopathic Hydrocoeles", in 1964. Unfortunately there have not been any reports of experiences with this operation in this region.

This paper is a study done in the Department of Urology, General Hospital, Kuala Lumpur, from May 1969 till May 1971, of the Lord's Operation for the treatment of all cases of adult hydrocoeles. Certain modifications to the original operation have been tried and will be discussed.

The advantages of the Lord's Operation over other previously described procedures are also discussed.

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### THE FIRST RENAL TRANSPLANT IN SINGAPORE SURGICAL ASPECT

Chan Kong Thoe, R. Sundarason  
Leong Hin Seng and Ang Hong Beng

I am presenting the first renal transplant done in Singapore on a 29 year-old female. To this day, the patient has remained well for over one year.

She was first seen and treated in February 1959 at the Medical Unit II of this General Hospital, for acute nephritis. Thereafter she suffered from urinary tract infection, resulting in chronic pyelonephritis, and subsequently chronic renal failure with anaemia.

On the 8th July 1970, she was admitted for renal transplantation.

Briefly, the surgical procedure of donor nephrectomy is described.

A short account of renal transplantation is described.

A description of changes—biochemical changes, that occurred during the postoperative period until discharge (on 38th day) is outlined, stressing on the first and second rejection, treatment of cryptococcal infection, and immuno-suppressive and antibiotic agents.

A description of her subsequent admissions into the hospital, such as infected A-V shunt, Amphotericin B therapy, and development of aseptic necrosis is given briefly.

A discussion is given about the longest surviving renal transplant patients, ischaemia time, and oliguria.

\* \* \*

## THE GENETICS OF $\alpha$ -THALASSAEMIAS IN SINGAPORE

Wong Hock Boon

$\alpha$ -thalassaemia as seen in Singapore results in 2 clinical entities; Hb. H thalassaemia and Bart's hydrops foetalis, the latter being invariably fatal a few minutes after birth. This being so, it is highly important to deduce the mode of inheritance, so that correct genetic advice may be given. There have been several hypotheses with regard to the genetics of the  $\alpha$ -thalassaemias but the current one concerns 2 possible genes, viz.  $\alpha$ -thalassaemia 1 and  $\alpha$ -thalassaemia 2. It is postulated that Bart's hydrops is represented by the homozygous  $\alpha$ -thalassaemia 1 state, and Hb. H thalassaemia by the double heterozygote  $\alpha$ -thalassaemia 1/ $\alpha$ -thalassaemia 2. Work on this will be summarised, consisting of family studies of about 60 cases of Bart's hydrops, 1,000 cord blood electrophoretic patterns to elucidate the various carrier states at birth and other methods to characterise the carrier state postnatally. As a result of these studies, firm genetic advice can now be given with regard to the  $\alpha$ -thalassaemias.

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## THE SCOPE OF PAEDIATRIC INTENSIVE CARE IN SINGAPORE

Loh Tee Fun

The need for paediatric intensive care is directed not only to emergency treatment of established cardio-pulmonary failure but also to the early detection of and specific measures in dealing with factors contributing to it. Intensive therapy is confined to steps taken to support insufficient vital functions, namely respiratory and circulatory; and it should be distinguished from intensive observation.

In acute paediatric admission, intensive observation as well as therapy is essential. This is supported by a study of admission and mortality of paediatric patients over the past 15 years. The striking improvement of mortality rate from 1955-1962 has reached a plateau as from 1963-1970 when the rate has remained steady at 3-4%. In more than half, the time of death has always been confined to the first 24 and 48 hours after admission.

The three commonest causes of deaths are respiratory infection congenital heart disease and gastro-enteritis—all of which require intensive care. To further advance paediatric care in Singapore, a highly organised intensive care is necessary. The scope and development of paediatric intensive

care of acutely ill-patients will be discussed in the light of the experience in established centres abroad.

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## ROLE OF IRON, VITAMIN B<sub>12</sub> AND FOLATE DEFICIENCY IN NUTRITIONAL ANAEMIA IN CHILDREN

Y. W. Ong, C. L. Tan and M. Koh

The role of iron, folate and vitamin B<sub>12</sub> deficiency and the significance of contributory factors in the causation of nutritional anaemia were studied in 100 children admitted to the Paediatric East Unit of the Outram Road General Hospital. Nutritional anaemia was most common among children below the age of 2 years and was commoner among Malay and Indian children.

Evidence of folate deficiency was found in 67% of the children. Vitamin B<sub>12</sub> deficiency appeared to play a minimal role in the causation of anaemia.

46% of the children had some intercurrent infection; the commonest being gastroenteritis followed by pneumonia and upper respiratory tract infections.

One out of every 4 children studied had a helminth infection. In about 8% of cases, triple infections with trichuris, round worm and hook-worm were found.

Infection and helminth infections are important contributory factors to nutritional anaemia in childhood.

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## ROLE OF DIAPHORASE IN NEONATAL HYPERBILIRUBINEMIA

Seet Ai Mee and Teoh Hoon Chew

Diaphorase (lipoyl dehydrogenase EC 1.6.4.3) catalyses the reversible oxidation of reduced lipoic acid by nicotinamide adenine dinucleotide. Whilst the enzyme has been widely studied in heart tissue, reports of its assay in erythrocytes have been infrequent and no investigation has been, as yet, conducted on the enzyme's causative role in neonatal hyperbilirubinemia.

The paper presents results obtained from a study of diaphorase activity in the red blood cells of neonatal jaundice cases admitted into the Paediatric Unit East over the period 1.1.69 to 30.6.71. Evidence is presented for marked difference in stability of the neonatal red cell enzyme as compared to that of the adult erythrocyte enzyme. The possibility of diaphorase deficiency acting as a contributing factor to the high incidence of neonatal hyperbilirubinemia in Singapore will be discussed.

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## PERCUTANEOUS RENAL BIOPSY IN CHILDREN

Lam Khuan Leng and K. Prathap

Percutaneous renal biopsy was carried out in 30 children whose ages ranged from 10 months to 12 years. The majority of the cases had Nephrotic Syndrome but others include those with persistent Albuminuria, Anaphylactoid Purpura and asymptomatic Haematuria.

All biopsies were done under sedation and local anaesthesia.

Changes under light microscopy and in some cases, electron microscopy will be presented.

The response to treatment in relation to histological appearance will also be discussed.

No serious complications were encountered in all cases following biopsy.

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## THE INCIDENCE OF THYROTOXICOSIS IN CASES OF ATRIAL FIBRILLATION

Yong Siu Li and Lee Guat Siew

38 patients having atrial fibrillation with no obvious aetiology, were examined and investigated over a period of 9 months at Medical Unit II.

17 of the 38 patients were found to be hyperthyroid. Most of these 17 patients were not overtly thyrotoxic and were diagnosed only after thorough clinical examination and laboratory tests. The difficulties encountered in the investigation are discussed.

The diagnosis of thyrotoxicosis as the cause of atrial fibrillation presents a better prognosis, compared to myocardial ischaemia, common cause of atrial fibrillation in the older age group. Hence the importance of suspecting the presence of thyrotoxicosis in cases of atrial fibrillation, and of carrying out full investigations to establish the diagnosis, cannot be over-emphasised.

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## RESULTS OF TREATMENT OF THYROTOXICOSIS WITH RADIOIODINE

G. S. Lee, J. S. Cheah, Y. S. Goh  
B. Y. Tan and K. B. Chia

Radioiodine was first used in the treatment of thyrotoxicosis in the Outram Road General Hospital in February 1966. The cases analysed here are all those treated with radioiodine in Medical Unit I and Medical Unit II of Outram Road General Hospital and also cases treated in Tan Tock Seng Hospital.

Altogether 343 cases were treated and they are analysed as to thyroid status at present in relation to doses used. Follow-up is from 6 to 63 months.

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## SURGERY ON THE THYROID GLAND

Alice Cheah

A survey is made of a personal series of over two hundred operations on the thyroid gland performed over a period of 3½ years. Operations performed were subtotal thyroidectomy for controlled thyrotoxicosis, partial thyroidectomy for non-toxic multinodular goitres, hemithyroidectomy for unilateral thyroid nodules, total thyroidectomy for overt malignancy of the thyroid, and excision biopsy of the thyroid isthmus for suspected auto-immune disease and chronic inflammatory conditions such as tuberculous thyroiditis.

The technical problems encountered during thyroidectomy and the management of thyroidectomy complications are discussed. Although a very vascular organ it is shown that blood transfusion is not usually required for this operation.

Other aspects discussed include the significance of thyroid antibody titres (thyroglobulin and microsomal antibodies), their correlation with the "adhesions" encountered during operation and the histological picture, and the possible link-up with a very gradual but slowly progressive auto-immune process in the thyroid gland.

A brief discussion on the management of thyroid malignancies is also included.

Lastly but by no means the least a case is made out for close liaison between the physician and the surgeon in the management of thyroid conditions, and the importance of long-term follow-up to detect development of late complications is stressed.

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## THE PREVALENCE AND CAUSES OF GLYCOSURIA IN 28,765 YOUNG MEN IN THE POPULATION IN SINGAPORE

J. S. Cheah, B. Y. Tan and A. F. Wong

In 28,765 young men of 17 years of age undergoing a medical examination for National Service, a postprandial urine specimen was tested for the presence of sugar with Clinistix (glucose-oxidase strip—Ames Co.). There were 23,163 Chinese (80.5%), 3,622 Malays (12.6%), 1,660 Indians (5.8%) and 320 Eurasians (1.1%).

Glycosuria was found in 141 cases. All had an oral glucose tolerance test done. In 27 (17.3%) the glucose tolerance test was normal; in these Clinistix was regarded as having given a false positive. The prevalence of a false positive test with Clinistix was 27 in 28,765 (or 1:1,065).

The prevalence of glycosuria was 0.40%; its prevalence in Malays (0.44%) was approximately equal to that in Indians (0.42%), while it was slightly less common in Chinese (0.38%).

The most common cause of glycosuria was renal glycosuria (77 cases or 67.5%). The prevalence of renal glycosuria was 0.27%; it was more common in Malays (0.36%) than in Chinese (0.25%) and Indians (0.24%).

Alimentary glycosuria (lag-storage, oxyhyperglycaemia) occurred in 21 cases (18.4%). The prevalence of alimentary glycosuria in all ethnic groups was 0.073%; it was more common in Indians (0.121%) than in Chinese (0.075%) and Malays (0.028%).

Two cases of diabetes mellitus (previously unknown) was found in this survey (prevalence of 0.7 per 10,000). One was a Chinese while the other was an Eurasian.

The mean height and weight of those with renal or alimentary glycosuria did not differ significantly from those with a normal glucose tolerance test. One of the diabetic was underweight while the other was overweight.

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#### CLINICAL STUDIES OF NEW DIABETICS IN SINGAPORE

Lim Pin and O. T. Khoo

A clinical survey was undertaken of new

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*Abstracts of paper read at the Pathology Lecture Theatre will be published in December 1971 issue.*

diabetics seen at a general medical unit in Singapore. Over a period of 12 months, there were seventy-five cases of which 38 (50.7%) were Chinese, 15 (20%) Malays and 22 (29.3%) Indians. Male patients were twice as common as female patients. The majority of patients (61.3%) were in the 5th and 6th decade and only 23 (30.7%) were obese. Oral sulphonylurea and dieting provided effective control in 80.6% of the patients, and only 9% of patients required insulin. Ketosis was present in only 6 cases and was easily controlled with appropriate treatment. Other clinical features are presented and discussed.

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#### TOLBUTAMIDE TOLERANCE TEST IN HYPOGLYCAEMIC PATIENTS

A. Nakhoda and H. A. Wong

Plasma insulin levels of 4 hypoglycaemic patients suspected of islet cell tumours were determined. Intravenous tolbutamide tolerance tests showed typical excessive insulin response in two of the patients, one of whom also showed excessive response to glucose.

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