

ABSTRACTS

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The Clinical Applications of Myocardial Infarct Imaging Using Technitium- 99m Phosphate

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This paper describes experience with ^{99m}Tc -stannous pyrophosphate and ^{99m}Tc -methylene diphosphonate myocardial imaging and discusses the clinical value and pitfalls of this safe, simple, sensitive, repeatable, reproducible and non-invasive method. The study concerns 34 patients admitted to the coronary care unit of the University Hospital in 1979 with the diagnosis of acute myocardial infarction. 11 of the 14 patients diagnosed to have transmural infarction on the basis of the E.C.G. had a positive scan i.e. sensitivity of detection was 80%. A high rate could have been possible if those with negative scans had an earlier imaging done. Subendocardial infarct was demonstrated as a less intense and diffuse myocardial uptake in 2 of the 3 patients. 2 of the 6 patients considered to have unstable angina had positive scans and could indicate severe ischaemia without infarction. 3 patients in whom diagnosis was problematic due to persistent abnormal electrocardiogram resulting from conduction defects or previous ischaemic damage the myocardial imaging helped to establish recent infarcts. 5 patients suspected to have ventricular aneurysms showed positive scans. No false positive scans were obtained in a group of 50 patients with non cardiac conditions. The images obtained with the 2 tracers were generally equal in quality but those using pyrophosphate exhibited a more intense myocardial uptake while background activity was lower with methylene diphosphonate. This study did not compare the sensitivity of the 2 radiopharmaceuticals.

Doubts as to whether infarction has occurred arises most often in patients with old infarction with persistent ECG changes; after cardiac surgery when serum enzymes concentration is raised because of tissue trauma, subendocardial infarctions, and left bundle branch block. Serum enzymes measurements may not be helpful. With ^{99m}Tc -phosphates imaging accurate diagnosis can be made 24 hours after acute episode. The sensitivity of detection rate is high and an old infarct can be distinguished from a recent one since only the latter will concentrate these radiopharmaceuticals. Persistent positive scan could suggest ventricular aneurysm. Myocardial uptake may also occur in patients with stable and unstable angina, valve calcification, cardiomyopathy, after DC transthoracic shock and uremic pericarditis. Serial scanning increases the sensitivity of detection and meaningful interpretation is possible by correlation with the clinical status and comparison with previous scintiscans. Baseline myocardial scans should be considered for patients with symptomatic coronary artery disease.

The main value of ^{99m}Tc -labelled phosphate scan is in the demonstration and localisation of myocardial infarction in patients where the electrocardiographic or serum enzyme changes are not helpful.

Grey Scale Ultrasonography — Techniques and Applications

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The technical advancement in ultrasound has been so great over the last 30 years that ultrasound scanning is now one of the most useful imaging techniques available. At the Universiti Kebangsaan Malaysia, the Nuclear Enterprise 4200 imaging system is used.

The principle of ultrasonography involves the passage of high frequency sound into the tissues or organs under investigation and the image formed by the returning echoes as displayed on the cathode ray oscilloscope and television analysed. Because organs and tissues are displayed as tomographic slices, alterations in tissue structures can be inferred and the disease process diagnosed.

With the availability of ultrasound imaging, certain investigations involving conventional radiography have been reduced. This is especially so in obstetrics and gynaecology. Being non-ionizing, ultrasound is very safe. It is well tolerated and no elaborate preparation is required.

Ultrasound imaging has its limitations. At the moment, the brain and lungs cannot be imaged and in this, the Computerised Tomographic Scanner has an advantage. Hence, it can be seen that imaging techniques used in combination can assure a more accurate diagnosis so that the appropriate treatment can be given.

Examples of lesions and disease processes involving various organs including liver, pancreas, kidneys, ovaries and uterus will be shown.

Renal Transplantation and Its Implications

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The current status of renal transplantation using living related donors for treatment of end stage renal failure at the Institute of Urology and Nephrology is reviewed.

The first patient to undergo renal transplant at this Institute received a well matched brother's kidney in December 1975; from then up to the end of 1979, thirty two renal allografts have been performed using living related donors.

Preference for prior haemodialysis is now given to end stage renal failure patients with well matched living related donors because of the higher rate of success of transplantation in these patients, the very limited places available for haemodialysis because of costs, and the difficulties involved in getting cadaver organs.

The present philosophies regarding the selection and preparation of donors and recipients, immunologic consideration, renal preservations, renal preservation techniques and other aspects of medical and surgical care are briefly outlined.

The results of living related renal transplantation involving thirty-two patients between 1975 and 1979 showed a continuing improvement in survival rate each year with an overall patient survival rate of 85 percent and all patients with functioning allograft achieved a high degree of rehabilitation. The causes of death in the five patients was infection (3 cases), rejection complicated by disseminated intravascular coagulation (1 case) and diabetic coma (1 case).

There was no morbidity among the donors and all were discharged from hospital within two weeks after their nephrectomy.

The oldest donor was 70 years old and the youngest 17 years old. There were 24 sibling donors and 8 parental donors. The experience gained in surgical techniques and renal preservation in renal transplantation implies the use of similar techniques in other forms of renal surgery such as surgery for renovascular hypertension and renal stone surgery.

It is concluded that living related renal transplantation as a definitive form of treatment for end stage renal failure is now established in this country and can be applied safely to the majority of patients with end stage renal failure with potential living related donors.

Intractable Diarrhoea in Childhood

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Intractable diarrhoea of infancy is a syndrome rather than a disease. It is a diarrhoea which persists for more than 2-3 weeks after an acute episode.

The causes are multiple and intractable diarrhoea can sometimes pose a difficult problem both for diagnosis and management. Giardiasis, trichiuriasis, sugar intolerance and cow's milk protein allergy are some of the main causes of protracted diarrhoea in this country.

In clinical practice some of these children may be dehydrated and gravely ill and thus management has to proceed *pari-pasu* with investigations. Elimination diet or an elemental diet is used early to avoid endless formula changes and nutritional deterioration. A regime has been proposed. Total parenteral nutrition is life-saving in refractory cases but one must be aware of its inherent complications.

Primary Closure of Fistulectomy Wounds

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Treatment of anal fistula by the classical operation of fistulectomy is simple and effective, but suffers the disadvantage of leaving an open discharging anal wound which is allowed to heal by granulation. Wound management is troublesome. Healing time is prolonged to an average of 5 weeks.

Primary wound closure offers a good solution if healing *per primam* could be achieved. However this technique is rarely practiced because of the fear of infection in a wound which is heavily contaminated. The author has used this technique since 1977 with satisfying results.

Of 75 consecutive patients with anal fistula 31 were treated with primary suture after fistulectomy, using one layer of 20 chromic catgut. There was no special regime of rigorous pre-operative bowel preparation nor prolonged post-operative bowel confinement. 23 patients attained primary wound healing. Partial wound disruption occurred in 5 and complete disruption in 3 patients. Uncomfortable wound pain occurred in only one patient as a result of a single stitch abscess, easily treatable by removal of the offending stitch. Wound disruption did not cause any more discomfort nor did it retard wound healing. Healing was complete within 2.8 weeks in partial wound disruption, and within 3.5 weeks in complete wound disruption. This compared very favourably with the average healing time of 5 weeks following classical fistulectomy. The average hospital stay was 4.2 days, the great majority of patients being discharged within 2-3 days. It is felt that approximately 70 percent of patients can be treated by primary closure of the fistulectomy wounds.

Management of Neglected Supracondylar Fractures of the Humerus in Children

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Neglected supracondylar fractures of the humerus in children present problems in management and remains an enigma to the profession. Although uncomplicated fractures are amenable to conservative treatment, a small proportion of these fractures may defy reduction even in the best of hands. In these patients, if satisfactory alignment within the constraints of reasonable correction of tilt and torsional deformity is achieved, late cosmetic and functional results are excellent.

In Malaysia, the problem is more complicated. These children are often brought initially to quack bone setters so that by the time they present to the orthopaedic surgeon, these fractures would have usually united in deformity, with the elbows held in extension with little or no active or passive movements.

This paper reviews the preliminary results of 50 consecutive cases treated surgically from 1972 to 1979. The results are presented and discussed. Union occurred without significant complications and the majority of patients regain full movements within 3 to 6 months after operation. Late sequelae such as recurrence of deformity of growth disturbances are not discussed pending further follow up over a longer period of time.

Fetoscopy. Its Scope in Intrauterine Diagnosis and Evaluation

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Fetoscopy, or the direct intrauterine visualisation of the fetus, has evolved over the last 25 years into a potentially useful tool in the antenatal diagnosis of fetal abnormalities. Its major application is in the intrauterine diagnosis of fetal Beta-thalassaemia, and more recently, of hemophilia. Other diagnostic possibilities following successful fetal blood sampling at fetoscopy include sickle cell disease, other hemoglobinopathies, coagulation defects enzymopathies, immunopathies, etc.

Direct fetal visualisation allows for recognition of major structural anomalies e.g. anencephaly, myelomeningocele, phocomelia, etc. Potentially, successful tissue biopsies of fetal skin, amnion and placenta provides a major advance over amniotic fluid cell analysis in cytogenetic and metabolic diagnoses. The study of fetal and placental pathophysiology via fetoscopy could also be useful in assessing placental dysfunction and intrauterine growth retardation. This technique could also possibly aid in intrauterine transfusion and intrauterine fetal drug administration.

Potential complications include haemorrhage from abdominal and myometrial wounds, sepsis, premature rupture of membranes, abortion, and placental and fetal damage.

The technique is still in its early stages of clinical application but there is no doubt that fetoscopy opens up a whole new and exciting field for the intrauterine study of the fetus and its environment.

Diagnostic Markers of Hepatitis B Infection and Their Significance

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The accurate diagnosis of hepatitis B Virus (HBV) infection has wide implications in blood transfusion services and in hospital practice, particularly in haemodialysis units. The prevalence of HBV in the population has also a bearing on the pathogenesis of serious chronic liver disease including primary liver cancer which is relatively common in this part of the world.

In recent years several well-characterized immunological systems of the Hepatitis B Virus have been identified - the surface (HBsAg), the core (HBc), and e(HBeAg) antigens and their antibodies. An additional serological marker - DNA polymerase activity has been found to be associated with HBeAg and with evidence of increased Hepatitis B viral replication.

The antigens antibodies occur in serum and the sequential order of appearance during the course of typical acute hepatitis is HBsAg, HBeAg, Anti HBc, Anti HBe, and Anti HBs. HBsAg is usually produced early in the course of the disease, is found in chronic carrier states and is an easily detected marker for the presence of infectious virus. A persistence of more than 6 weeks is often followed by the development of a chronic hepatitis. Seroconversion to Anti HBs is an indication for recovery and immunity. Anti-HBc arises during the acute phase and persists through recovery and immunity. This antibody is frequently the only detectable marker for exposure to HBV. HBeAg rises in serum at the same time as HBsAg, and its presence is associated with acute disease, chronic disease and is associated with high infectivity. Seroconversion to anti-HBe signifies better clinical prognosis and low infectivity.

Results of several parameters of HBV infection in the local general population, in high risk groups, haemodialysis and hepatoma patients will be discussed.