

MONAHP

Paediatric Surgery Training in Papua New Guinea

A Report for 23rd-31st October 2000



Professor PA Dewan
PhD MD MS BMedSc FRCS FRACS

Overview

Paediatric Surgery development PNG has advanced significantly in the last two years. A Visiting Professor appointment has been made in the University of Papua New Guinea, one Paediatric surgical candidate is completing his training in Melbourne (Dr Mclees Mathew), a second has become the coordinator of the arrangements for the visiting team (Dr Okti Poki) and a third candidate has been identified for subsequent training. An exam is to be conducted next year for the Paediatric Surgical Diploma, and consultant positions are to be established for the Paediatric Surgical graduates in Lae and Port Moresby subsequently. It is envisaged that external visits will continue for two years, at an increased level, tailing off over a further five years, to reach a state similar to that seen in most countries where services are supplemented by visiting experts. Indeed, PNG may well be in a position to provide training opportunities for overseas Paediatric Surgical trainees, on a fee-for-service basis.

Once the three Paediatric Surgical subspecialists are in-country they will be able to provide contact and advice to peripheral PNG surgeons, Paediatricians and others wishing to seek guidance on matters related to the care of children with surgical disease. Additionally, they would be expected to provide outreach care to children with major anomalies, and set the standard for the management of the less major conditions.

The training program has been underway since 1993, and has involved three Australian Paediatric Surgeons, funded by the Ausaid funded IDP/MONAHP or PIP management groups. The program was again supported by a number of additional sources. The Huon Gulf Rotary Club and the Lae International Hotel provided the accommodation, equipment and meals in theatre, in Lae. Kendall-Sherwood-Davis and Geck, Bard and Ansell International have donated company products for a number of the 20 visits, and recycled items have been collected by the nursing and other staff in the theatres of several Victorian Hospitals, including The Royal Children's Hospital, Western Hospital Sunshine, Mercy Private Hospital, The Geelong Hospital and St John of God Hospital, Geelong: Qantas and Air Niugini have kindly transported these items free of charge. Also, a number of people have provided transportation in Lae.



Donated suture material, recycled diathermy pads and betadine are essential supplements to the Paediatric Surgical teaching program

Once again the staff at Lae/Angau and Port Moresby Hospitals have been of great assistance to the visiting Paediatric Surgical team, as on all the previous occasions.

The team travelling from Australia, on this visit, consisted of Dr Rick Horton (Anaesthetist) and myself (Paediatric Urologist/Surgeon). Dr Poki traveled from Mt Hagen to work in both Lae and Port Moresby and was pivotal to the success of the training exercise, through his work in setting up contact for referral of the patients, coordinating the training and teaching program and participating in long days and nights of lectures, tutorials, ward rounds and theatre sessions. Surgical trainees in Port Moresby played as much of a role as they were able, particularly Dr Benjamin Yap; the Anaesthetic Technical Officers participated actively in the teaching and case management. Training of nursing staff and students in theatres and the ward, on aspects of Paediatric Surgery, was also achieved, particularly related to appropriate processes of intra-operative theatre work.

In addition to the teaching, clinic work and surgery, this visit involved participation in discussions about the development of Paediatric Urology and Paediatric Surgery, particularly planning for equipment requirements in theatre and the wards. A meeting was held with the newly established Foundation, based in Lae, which has been established to assist with the development of the appropriate care of children with surgical diseases in PNG.

The project continues to flourish: Dr Albert Shun has joined the team of Surgeons from Australia, and is expected to return in 2001. Dr Mclee Mathew is soon to return for a visit as the PNG expert, then to return in July 2001 to a consultant post in Lae. Dr Okti Poki will hopefully be assigned to a 12 month training post in Australia in 2002: also, the relatively minimal equipment requirements are gradually being met. Progress has been made in the sequence of events that should be followed for the care of patients with Hirschsprung's disease and Anorectal Anomalies, particularly the aspects of the creation and care of colostomies. Minor procedures are also being conducted more in line with the principles of Paediatric Surgery, culminating in the use of day-case surgery during this visit.



Dr Poki operating Lae



An ATO is supervised doing a caudal injection

Teaching

Surgical teaching involved sessions with Dr Poki during many hours, other than those in the hospital. Living and working with the subspecialty trainee facilitated ongoing discussions related to the conditions and patients treated. During this visit the patient contact included 59 consultations, 12 ward rounds, 70 hours of operating time on 37 cases, two lectures, and two formal outpatient clinics. Paediatric Surgical nursing was taught by involvement of the visiting nurse in ward management, with particular focus on the care of patients having bowel and urological surgery. Anaesthetic training was conducted during most operative sessions, during which trainees and ATO's were available for Dr Horton to work with; safe anaesthesia within the limits of training and experience was the main theme.

Ward Rounds: Ward rounds were held in the morning and evening on most days in both Port Moresby and Lae. As for previous visits the teaching during these sessions was focused on the post-operative care of the patients, aimed at the Paediatric Surgical trainee, the resident staff and more so on this visit at the nursing staff.

Theatre Sessions/Operations: Once again the service and teaching commitment of the Paediatric Surgical development was exemplified by the amount of operating and teaching performed in the theatre. The 37 operative cases with 70 hours of theatre time were mainly focused on the honing of the technical and diagnostic skills of Dr Poki. He has improved and will benefit by being more in the front-line than he has previously been. Two other surgical staff took the opportunity to be closely involved in the operative surgery: Dr Yapo in Port Moresby and Dr George from Kundiwa, in Lae. The remainder of the surgical team in Port Moresby was also involved to a limited, but useful extent. Again, the main advantage of the other staff being involved was the participation in discussion on the appropriate use and performance of a paediatric colostomy. Teaching of the junior staff and anaesthetic technical officers was also achieved, by the concurrent visit of Dr Rick Horton, who has subspecialty skills in Paediatric Anaesthesia.

A post-operative view of a baby who had an intra-abdominal abscess secondary to gut perforation



Lectures + Tutorials: The two lectures were given in Port Moresby to medical students, residents and surgical trainees. The topics included the range of lesions learnt during the Paediatric Surgical visit. Brief surgical tutorials were also given, aimed at the registrars and the Paediatric Surgical trainees; these usually occurred when time would otherwise have been wasted while the staff was setting up for surgery. Medical students were available for tutorials in theatre in Port Moresby, an arrangement which should be fostered in future visits. The following is a list of the main topics covered in the surgical lectures and tutorials:

1. *Urological catheter management*
2. *Electrolyte disturbance*
3. *Post operative care in Paediatric Surgery*
4. *Post operative care in Paediatric Urology*
5. *Long-term follow-up of Paediatric Surgery*
6. *Hirschsprung's disease*
7. *Bowel obstruction in neonates*
8. *Case discussion and audit*
9. *Anorectal anomalies*
10. *Colostomy surgery*
11. *Acute Urology*
12. *Inguinoscrotal pathology and Surgery*
13. *Surgical techniques in Paediatric Surgery*



Adverse outcome for colostomy formation now occurs less frequently. However, stenosis (A); Prolapsed two-stoma colostomy with midline incision (B); Prolapsed transverse colostomies (C) continue to occur; A satisfactory stoma is becoming more common (D).

Consultations

The following consultations were conducted during the visit. Most of the patients were seen in the ward in Lae and in specially convened clinics in Port Moresby and Lae. Twenty-one of 26 patients in Lae came to surgery, because of the effective screening process in that centre and referrals from outlying centres, largely because of the efforts of Dr Okti Poki. Non-operative cases included a rhabdomyosarcoma behind the ear and follow-up of previous surgical cases. Only 16 of the 33 consultations seen in Port Moresby came to surgery, but there were a greater number of post-operative follow-up cases. The advantage of seeing the non-operative cases was the ability to teach on a wide range of topics that would not have otherwise been covered, and to review the outcome of previous intervention.

Consultations

Lae 27/10/000 - 31/10/00



A boy who had fractured his penis during a degloving injury was successfully repaired



This 16 yo girl had carried this large sacroccygeal teratoma all her life. She had an uncomplicated removal of the henion mass

Operative Surgery

The cases listed below were operated on during the visit; all had the involvement of Dr Poki, and the Port Moresby cases involved Dr Benjamin Yap, both of whom were involved in the pre and post-operative management. There were a total of 50 operations on 37 patients. Once again the majority of children seen were pre and post-operative cases with an anorectal anomaly (11) or Hirschsprung's disease (7) and, during this visit, 6 cases had a Paediatric Urology procedure.

Port Moresby: 23/10/00 - 27/10/00



Day-case hernia repairs were demonstrated as feasible in PNG

Lae 27/10/00 - 31/10/00

Advances that have occurred in Paediatric Surgery in PNG include survival of boys with urethral obstruction, increasingly correct management of patients with Hirschsprung's disease – ie, the biopsies are being taken and the colostomies are more often being formed correctly. Unfortunately, patients continue to have an inappropriate mid-line laparotomy and incorrectly place colostomies, which seems partly due to registrar staff, with relatively little experience, operating unsupervised.

However, the large number of cases with failed previous surgery for Hirschsprung's disease no longer exists, although the late presentation of a young man with an upper rectal stricture and a 16 year old young lady with a large sacrococcygeal teratoma are noteworthy. Most importantly, Dr Poki is performing an increasing amount of the surgery, in particular he has refined his technical skills based on the lessons learnt since the previous PIP and MONAHP Paediatric Surgical visits.

Outcome of Previous Paediatric Surgical Visit Recommendations

Surgical Technique: As in previous years, much has improved in the overall expectation of an early favourable outcome for children with Hirschsprung's disease and those with an anorectal anomaly. Tissue handling, wound closure, colostomy formation and the location of the colostomies are now more likely to be appropriate. Better supervision of trainees in general surgery is still required, and a greater participation of non-assigned registrars is desirable.

Radiological Support: Unfortunately, renal anomalies in children continue to be under diagnosed. Funding and a research fellow position should be made available to perform a prospective study of children with fever, in which a dipstick of the urine would lead to a portable ultrasound examination of the kidneys, and would provide an important insight into the profile of renal disease.

Further education in the subtleties of some of paediatric surgical material has increased the ability of those who have been involved in the Paediatric Surgical visits; medical students are better at interpretation of the radiology involved in Paediatric Surgical conditions than their counterparts in previous years. Further training sessions for Surgical and Paediatric trainees and medical students have been implemented, but sessions with Radiographers, Radiologists would also be useful.

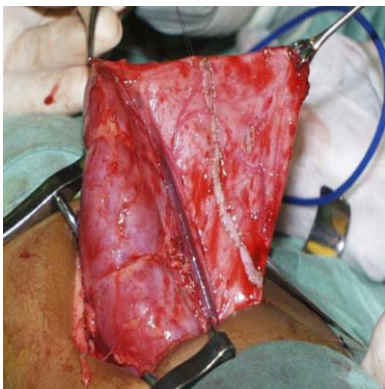
Theatre Equipment: Donations-in-kind and the Department of Health supplies have improved, but there continue to be significant shortfalls in the provision of suture material, diathermy leads and pads, quality theatre linen and paediatric surgical instruments. Unfortunately, development of inventory systems has not kept pace with some of the donations, resulting in there being a surplus of some items that are not readily accessible, although were present in the hospital. Through the Rotary Club mechanism some of the needs are now being met, particularly the linen and diathermy equipment. The arrangements have not really changed in the 12 months since the last MONAHP visit, and would be assisted by the visit of a qualified theatre nurse.

Organisation of Specialist Visit: Dr Poki, from Mt Hagen, together with Dr Benjamin Yapo in Port Moresby took the role of coordinators on this occasion. The development of the teaching program and the incorporation of Paediatric Surgery into the medical student, Paediatric and Surgical training programs will need further development, particularly when PNG Paediatric Surgeons have returned from their training in Australia. The Rotary Club of Huon Gulf has continued to be important to the organisation and overall success of PNG Paediatric Surgical training, particularly since they have established a Foundation to support Paediatric Surgical training and service.

Considerations for Further Development

The focus should now be on the development of a position in the country for the two surgeons soon to be available to be the principle advisors for Paediatric Surgery in PNG. Dr Mclee Mathew will return from Melbourne in July 2001. He will need the support of the Department of Health, the Surgical Association, the University and the Nursing fraternity to be able to deliver a cost efficient, life saving service and education program in Paediatric Surgery. Also, with the assistance of Dr Poki and the Professor of Paediatric Surgery, protocols for the management of conditions will need to be developed along the lines of those now used for the post-operative care of the anorectal anomaly and Hirschsprung's disease patients. A further development will be the formulation of a protocol for the performance of a colostomy. The diploma exam, to be conducted in October 2001 will be the next major step forward.

Paediatric Urological Disease: Despite repeated recommendations from the Paediatric Surgical visits, lives continue to be lost or adversely affected because of the delay in diagnosis of urological diseases. This situation will hopefully improve once Mclee Mathew has returned with good training in both Paediatric Urology and the use of ultrasound in the identification of renal tract anomalies. The pictures below show one boy who would have died from renal failure if not for the pictured pyeloplasty last year. His one kidney now functions well, as shown in the IVP picture.



Paediatric Surgical Nursing and Radiological Training: Still there has only been *ad hoc* addition of a nurse to assist with the Paediatric Surgical visit. Attention to the development of Paediatric Surgical nursing expertise is important to the development of services to children with such diseases. It would be of great assistance to have theatre nursing staff available to review and advise on the processes in theatre, plus provide additional assistance to the workload during the trips.



The parents tolerate accommodation that would be difficult to accept in Australian



The data are collected on a laptop, which is useful for checking on the previous management of the patients