

Paediatric Surgery Training in Papua New Guinea

Higher Diploma Examination Visit



A Report for 1st - 4th September 2002

Professor Paddy Dewan

Overview

The Paediatric Surgical visit to PNG on this occasion was very different to the usual frenetic trips that provide service and skill-transfer. The principle aim on this occasion was to conduct the first Higher Diploma Paediatric Surgical exam.

The orchestration of the exam is the culmination of the efforts of three Australian Paediatric Surgeons, AUSAID funded projects, Rotary assistance, a newly formed Paediatric Surgical Foundation and the dedication of many surgeons in PNG, including Mclee Mathew, Okti Poki and Benjamin Yapo. Also, the assistance of the PNG Health Department, Professor David Watters and the staff of the Department of Surgery over the last 10 years cannot be overstated.

Having reached the examination milestone, and having the candidate pass, gives the sub-specialty improved status, and encouragement to the other potential Paediatric Surgical trainees. It also gives impetus to the further development of infrastructure, such as Paediatric Surgical wards, and certainly gives this component of the AUSAID/RACS development project a real sense of sustainability, accepting that the main role of the PNG Paediatric Surgeon is to set the standard, rather than provide all the clinical care and teaching related to the specialty.

Now that there is one Paediatric Surgeon in PNG it is important to have a vision as to how services are to be provided to children with surgical disease in the future. Dr Okti Poki is the next Paediatric Surgical candidate, and is currently in Canberra undertaking further surgical training, as follow-up to his previous participation in Paediatric Surgical visits to Papua New Guinea recently. Dr Poki's appointment to a position at Westmead Children's Hospital has been announced, and is thanks to the support from Albert Shun. Importantly, it is through Dr Mathew and Dr Poki that skill development of General Surgeons, Anaesthetist, General Practitioners, Nurses and others will be facilitated, rather than the two being the only providers of service.

In addition to recent training, enhancing the abilities of the medical and nursing team, it is now envisaged that early patient referral will be more common, particularly because of PNG enhanced community and student awareness. Hopefully we will now see wards with a focus on Paediatric Surgery in the major centres, Paediatric Surgeons providing outreach within PNG, and PNG workshops for Southeast Asia on conditions such as anorectal anomalies. This new approach is soon to be launched by Dr Mclee Mathew providing outreach Paediatric surgery to the Solomons for the PIP project, through his participation in the 2002 Annual Scientific Meeting of the RACS, and with the assistance of the PNG Paediatric Surgical Foundation. Two visits will be undertaken to PNG in 2003, one by Dr Albert Shun's team and the other, in March, by Professor Dewan and Dr Andrew Jeffreys.

Despite the limited duration of the visit on this occasion, teaching and service delivery were also provided, as detailed below:

Front Page: Dr Mcleee Mathew is shown at work in PNG.

Higher Diploma Exam

The examination consisted of two written papers, an examination on clinical cases, a viva voce, and a ward round. The examiners were myself, Professor John Vince, Professor David Watters and Dr Ikau Kavau. The questions used for the exam indicate the wide curriculum to be covered by the candidate.

Written Paper I:

Question 1: A male infant presents in the newborn period with abdominal distension secondary to an imperforate anus. Describe the clinical assessment, radiological investigations and their likely findings. Detail the early surgical intervention, and the subsequent definitive surgery, including the post-operative management after the definitive repair.

Question 2: A baby is born with spina bifida, with good leg function and anal tone with a lumbar lesion. Following closure of the back the child develops an increasing head circumference and sun-setting eyes. Describe the surgical treatment of the back lesion, the investigation of the head changes and the surgical treatment of the Hydrocephalus.

Question 3: A four-year old boy presents with a hugely distended abdomen with a history of chronic constipation and failure of the passage of meconium until one week of age. How would investigate this boy, what would be your initial surgical management, and describe in detail the definitive surgery (together with the post-operative management) for this child.

Written Paper II:

Question 1. Write short notes on the presentation, differential diagnosis and management of a child with septic arthritis in the first five years of life.

Question 2. Describe the features of a boy with a major hypospadias and outline the principles of the surgical techniques used to repair such an abnormality, presuming the boy has two normally descended testes.

Question 3. A 10 year old boy presents with a 5 day history of pain that has initially been central and colicky, which moved to the right iliac fossa, and is now generalised and associated with a high fever and generalised signs of peritonitis. He has been vomiting and is now 7% dehydrated. Describe the initial management, and the operative treatment of this boy.

Question 4. A 10 year old girl is admitted with a one day old supracondylar fracture. Discuss the potential problems and your management of this girl in both the short and long term.

Question 5. Briefly describe the embryology of the diaphragm and indicate how you would surgically repair a Bochdalek defect.

Question 6. A four year old girl present with fever, a urinary tract infection, and an ultrasound that shows a kidney with thin parenchyma and marked dilatation of the pelvicalyceal system, with pus in the kidney. With the presumptive diagnosis of a pelviureteric junction obstruction, what would be your initial management and how would you definitively repair the obstruction, including the range of options.

Higher Diploma Exam (cont'd)

Clinical Examination Cases:

**Cerebella tumour,
Major hypospadias,
Anorectal anomaly,
Cleft lip + microcephaly,
Undescended testicle,
Cholelithiasis,
Cystic hygroma**

Ward Round:

**Hydrocephalus
Duodenal atresia
Ovarian mass
VUJ obstruction**

Viva Voce:

Varicocele, Club feet, Colonic atresia, Burn injury, Bladder stone, Udeka cyst, Sacrococcygeal teratoma, Thyroglossal cyst, Acute scrotum – torsion of testicle, Torted appendix, Cut-back for low male anorectal anomaly, Intussusception, Tetanus, Lung cyst



Dr Mcleee Mathew with his examiners at the end of the three days of oral tests and written papers.

Teaching

Ward Round: A ward-round of difficult cases was conducted with resident, registrar and consultant staff.

Theatre Sessions/Operations: Three registrars Benjamin Yapo, Ako Millan and Ronnie Jagilly scrubbed-in to assist with the reimplantation of a difficult primary megaureter case.

Lectures + Tutorials: A tutorial on operative Paediatric Surgery was given to the Master of Medicine students, and a lecture was given at a Surgical Department meeting, which included medical students, and which dealt with a cross-section of Paediatric Urology.

Consultations

Thirteen patients were seen in either the ward or the theatre waiting area. These represented complex cases that were beyond the experience of the PNG Surgical and Paediatric team, resulting in sub-specialty guidance and planning for subsequent surgery. One young adult subsequently served as the demonstration case for ureteric reimplantation. The girl shown below was treated after advice given by email; the consultation was to plan the anticipated cloacal repair in March 2003.



This unfortunate girl had a perineal infection (far left), resulting in the scarring seen during this visit (near left). Surgery to improve her anatomy will be similar to that for the congenital cloacal anomaly.

Operative Surgery



A 26 year old man was admitted with haematuria, and had a nephrostomy inserted to help treat the infection. After an antegrade pyelogram (far left), he had a ureteric reimplant, conducted with 3 registrar assistants. Notably he did not have a suprapubic catheter after the reimplant (near left).

Outcome of Previous Recommendations

Surgical Technique:

Further improvement is needed in the handling of Paediatric tissues by the MMed students, but continues to improve.

Student Participation:

Student and registrar participation both in the surgery and the teaching sessions continues to improve. Ben Yapo's audit of Paediatric Surgery in Port Moresby strongly supports this contention.

Radiological Support:

No change has occurred with regard to the limited number of cases diagnosed with a renal anomaly.

Theatre Equipment:

Inventory of theatre supplies remains a problem, with donations-in-kind not being integrated into the theatre management system in a manner that would be of maximum benefit to the project. This particularly relates to disposables.

Paediatric Surgical Nursing:

Nursing training in the ward has been partly addressed.

Paediatric Surgical Appointments:

Dr Mclee Mathew is currently working in Lae; Dr Okti Poki is currently undergoing further training in Paediatric Surgery in Canberra, then moving to Sydney.

Communications:

The Internet is being increasingly used in the management of patients via contact with the three surgeons who have visited PNG to help with the Paediatric Surgical training program, as was for the perineal infection girl shown earlier.

Recommendations for Future Development

Surgical Technique:

Basic surgical skills training courses should be considered for medical students with a focus on tissue handling with similar training for the MMed candidates. Greater involvement of MMed candidates with the visiting teams would assist in the development of their skills.

Student Participation:

A process of accreditation for the attendance of students and the MMed candidates might improve the level of participation in all the specialty visits.

Theatre Equipment: Donations-in-kind need to be better managed and integrated into the theatre management system, in a manner that would be of maximum benefit to the project, particularly disposables. Allocation of funding for theatre nursing staff experienced in management, and perhaps conducting a course, would assist with inventory management.

Paediatric Radiology: Funding of a research fellow position should be made available, to allow a prospective study of children with fever. Such a study in which a dipstick test 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. Negotiations are currently underway for a student to conduct such a project with the guidance and assistance of Professor John Vince, Mclee Mathews and Professor Paddy Dewan.

Paediatric Surgical Nursing: Contact with nurse education groups would help facilitate the development of Paediatric Surgical nursing modules. Also, staff should be identified to assist with evolution toward a Paediatric Surgical ward in Lae and Port Moresby. Further support in theatre and ward training in Paediatric Nursing should be continue, both associated and separate from the Paediatric Surgical visits. A visit in the near future of Royal Children's Hospital International from Melbourne may enhance the progress.

Paediatric Surgical Wards: As yet no specific wards have been established, and there has not been any specific plan to develop the skills of nurses to compliment the developments of the surgical staff. The development of a Paediatric Surgical ward in Lae in the first instance would be appropriate, and Ward 6B at the Port Moresby General Hospital would appear to be the appropriate location. As other surgeons are appointed to other locations, similar facilities should be put in place. Locating the patients in the one ward gives a focus of nursing care, and ease of surgical team management. The development of ward facilities would help focus the developing the appropriate skills nursing personal and skills.

Paediatric Surgical Appointments: Dr Mclee Mathew should stay in Lae, from where he could provide education and service to the regional centres, teaching and service in Port

Moresby, and form part of the PIP team in teaching in the Solomons. As previously stated, if teaching blocks were established he could be a productive member of the University of PNG surgical teaching. Funding for his work is able to be augmented through the Paediatric Surgical Foundation, in Lae. Following the return of Okti Poki, one of the two Paediatric Surgeons should have an appointment in Port Moresby. The next two trainees should be identified to give a total of four appointments by the year 2010. Two strong candidates for Paediatric Surgical training would be Benjamin Yapo and Charlie Turharus. The four should then form a network, or PNG Paediatric Surgical Unit, with a common audit and with an appointed head who also carries a University title.

Appropriateness of care: it would be appropriate to develop a discussion paper on appropriateness of care for patients who present with illness where the management may have been so compromised by the lateness of the presentation as to render the benefit of the surgery to be less than the benefit of non-intervention. This perspective is important in all communities, but is of a different focus in a community such as Papua New Guinea.

Workshop development: With the experience with complex cases in both anorectal anomalies and Hirschsprung's disease it would be appropriate to look to develop training workshops to develop the diagnostic skills of the PNG doctors, but also to invite Australasian surgeons to gain from the patients as they present in PNG.

Paediatric Urological Disease: As for my last report - 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, which would be improved by funding a project to look at the prevalence of urinary tract infections and associated renal anomalies.

Donations to Taken or Delivered to PNG

<i>Donated Item</i>	<i>Number</i>	<i>Donor</i>
Betadine, 100 mL bottles	68	Sunshine
Diathermy plates, large used	200	St John of God
Diathermy plates, small used	20	Sunshine
Gloves - sterile: pairs	240	Ansell

Since the visit a further 15 boxes have been forwarded through the assistance of the Huon Gulf Rotary Club and the Paediatric Surgical Foundation.