Dr Mclee Mathew, Dr Paddy Dewan,

Dr David Allen and Sr Blendina Jim

8th- 18th June 2013

A project of Kind Cuts for Kids:

Sponsored by Islands Petroleum

Introduction

Paediatric surgery in PNG only started in earnest in 1993, during the first visit of Dr Dewan. In the visit reported here, his 20th visit, it was evident that there have been major advances in the care of children with disease needing surgery, particularly through the development of a University of Papua New Guinea Diploma of Paediatric Surgery. Three candidates have since sat and passed the exam, including the team leader for this mission, Dr Mclee Mathew, Papua New Guinea's first Paediatric Surgeon. Dr Okti Poki, one of the two other Paediatric Surgeons works in Port Moresby and Dr Ben Yapo is the Paediatric Surgeon to the Mt Hagen region.

During the recent Kind Cuts for Kids visit, 37 patients were reviewed, 14 of whom were female; 5 of the 37 were seen in Lae. The geographic distribution relates to the location in which Dr Mclee Mathew works, where he is able to complete most of the necessary services; another factor is the lack of funding for outreach to East New Britain, a third is the accumulation of highly complex cases over time in the more remote locations.

Of the 37 patients reviewed, 18 underwent a total of 43 operative procedures under one anaesthetic each; 4 patients were seen in Lae and, overall, 6 operative patients were female. Those not operated on will either have surgery by the local Kokopo team, or will undergo surgery during a return visit by Dr Mathew to East New Britain. Others were deemed to either not require surgery, or have circumstances that surgery was not an appropriate option.

Development of Paediatric Surgery

In 1993, paediatric surgery did not exist as a specialty in PNG; in fact surgery was only developing as a service available in the major centres, and with limited support services. Through the input of AusAID and various organisations providing management of part of the program, paediatric surgery has since developed significantly.

Initially, the cases treated during Kind Cuts for Kids' visits included minor cases and management of significant complications arising from previous surgical care of minor cases, such as recurrent inguinal hernia and failed testicle operations. The surgical lists also had a high proportion of cases that were surgery for poor outcomes for bowel conditions such as anorectal anomalies and Hirschsprung's. In particular, colostomies were poorly formed, and were far too frequently complicated. Surgeons untrained in paediatric anorectal anomaly surgery had done the best they could.

Most of the minor and major cases are now done by the three trained PNG Paediatric Surgeons, all of whom have had some training in Australia, two of whom have had overseas experience with Kind Cuts for Kids, and all have sat and passed the PNG Paediatric Surgery Diploma. Now, the only need for visiting Paediatric Surgical specialists is the presence of a number of cases that the local team are unhappy to manage without additional expertise. Concurrently, but less impressively, anaesthetic services for children have also improved.

Unfortunately, there are various matters that have not advanced as had been expected, possibly due to a focus on an outmoded model of assistance, noting that visiting specialists continuing a similar pattern of aid have not assisted in alternative infrastructure improvement and empowerment of local providers. Attention to the following would enhance the near-term outcome for the care of children with surgical conditions.

1. Lack of hospital infrastructure in Lae and Rabaul.
    a. Poor buildings in Lae.
        i. Theatre facilities have declined.
        ii. Paediatric ward in state of marked disrepair.
    b. No paediatric intensive care.
    c. No intravenous nutrition facilities.
    d. Inadequate surgical instruments; including no endoscopic light source in Kokopo.
2. Sutures, urethral catheters and dressings for paediatric surgery are still lacking, the supply of which should not be the precipitant for funding a visiting surgeon.
3. Lack of appropriate access to disposable items such as fine sutures and catheters.
4. In-country outreach funding has not been easily accessible.
5. Diagnosis of urological conditions rare, despite previous case loads.
6. Colostomies are formed by inexperienced surgeons without resort to available expertise and can result in complications.
7. Concerns have been expressed that training and service for paediatric surgery in Port Moresby is problematic.
8. Proactive involvement of the country's paediatric surgical expertise is limited.
9. Decisions in the development of paediatric surgical services have been influenced by personalities rather than principles.
10. Clinical evaluation of children's bowel conditions at birth continues to confuse the anorectal anomaly and Hirschsprung's disease diagnoses too frequently.
11. The lessons learnt in PNG about the management of anorectal anomaly associate megarectum have not been universally applied, necessitating two major redo cases during the visit covered by this report.
12. Colostomy formation is available at world's best practice standard, but is not being applied country-wide.
13. The basic paediatric surgical skills amongst trainees have advanced significantly.
14. Supervision of paediatric surgery in Port Moresby is reported to be limited.
15. All trainees with an interest in a visiting specialty should be facilitated to be involved, which was not so for Jack Mulu.
16. Despite the disease profile of PNG children previously showing an expected incidence of urological problems, these appear to be being missed due to the lack of screening of febrile episodes for urine infection as the cause.
17. Laparoscopy as an alternative access for otherwise routine surgery would result in an inappropriate distribution of resources for most procedures in paediatric surgery.
18. Radiology service extremely limited.
19. Ultrasound equipment was utilised via the obstetric services in Kokopo.

Also,

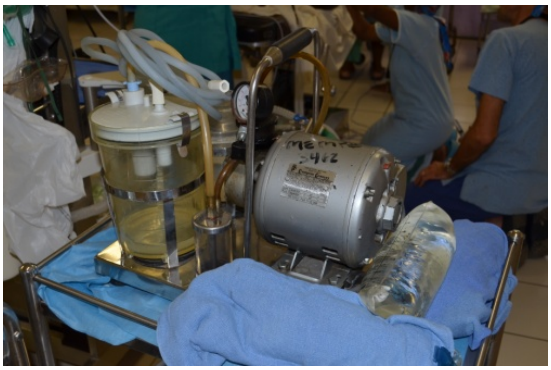
20. Visa application for volunteer medical staff could be streamlined.

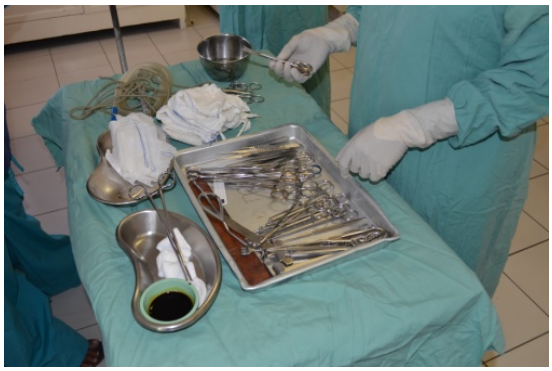
One marked change is the skill of the trainees, who have had the benefit denied to their PNG mentors, namely supervision by highly skilled and trained PNG surgeons.

The next phase for Paediatric surgery, which was started during this visit, is the development of a private-public-partnership, which will assist in the infrastructure and networking for care issues pivotal to future improvements.

Dr Mclee Matthew leads the team on arrival in Kokopo. Annette Sete and Tim Masiu, from the sponsoring company Islands Petroleum, flank the visiting team of Dr David Allen (left) and Professor Paddy Dewan.

Kokopo Hospital, Rabaul

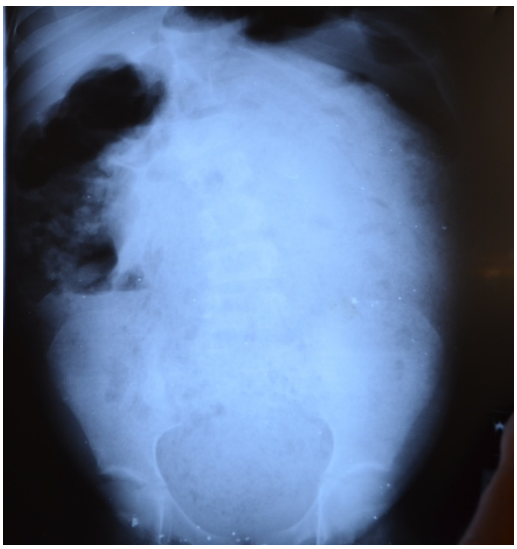




The Vunapope Hospital was host to the Kind Cuts for Kids team, where the local surgeons, nurses and anaesthetists provided excellent support, as did the administration of the hospital. Some of the equipment was basic, and disposable materials had to be supplied by the visiting team; surgery was performed within the limitations of the infrastructure and support available.

Kokopo Hospital - Patients

The patients and surrounds show the happy people and the basic nature of the infrastructure. The family on the left required their daughter to have redo surgery, and the girl in the two pictures below with a wrong diagnosis indicates the need to better use the expertise of the PNG Paediatric Surgeons and the need to have a national audit of the management of major surgical problems in children.



Operative Procedures

Operation	Pathology	Date
Colostomy closure	*Anorectal anomaly - cloaca*	*17/06/2013*
Laparotomy	*“*	*“*
Pena – redo	*“*	*“*
rectal resection	*“*	*“*
Hernia repair – incisional	**Anorectal anomaly - incis hernia**	**10/06/2013**
Wound revision	**“**	**“**
Excision of tongue lesion	*Multiple anomalies*	*13/06/2013*
Myelomingocele excision	**Meningomyelocele**	**14/06/2013**
Colostomy revision	*Anorectal anomaly - prolap col*	*11/06/2013*
Faecalectomy	*“*	*“*
Ileal Biopsy	**Hirschsprung's - long segment**	**17/06/2013**
Ileostomy – divided	**“**	**“**
Laparotomy	**“**	**“**
Non rotation positioning	**“**	**“**
Anoplasty – cutback	*Anorectal anomaly - prolap colostomy*	*12/06/2013*
Colostomy closure	*“*	*“*
Faecalectomy	*“*	*“*
Hypospadias - UB II	**Hypospadias**	**14/06/2013**
Reduction of rectal prolapse	*Rectal prolapse*	*12/06/2013*
Anoplasty – cutback	**Anorectal anomaly**	**13/06/2013**
Cystic Hygroma – excision	*Cystic hygroma - right neck*	*16/06/2013*
Hypospadias - Fistula repair	**Hypospadias fistula *2**	**13/06/2013**
Hypospadias urethroplasty	**“**	**“**
Colostomy – divided	*Anorectal anomaly*	*10/06/2013*
EUA perineum	*“*	*“*
Faecectomy	*“*	*“*
Laparotomy	*“*	*“*
Hypospadias - UB I	**Hypospadias**	**14/06/2013**
Cystoscopy	*Hypospadias*	*16/06/2013*
Hypospadias repair - UB II	*“*	*“*
Colostomy closure	**Anorectal anomaly - rectal ectasia**	**10/06/2013**
Laparotomy	**“**	**“**
Pena	**“**	**“**
Rectal resection	**“**	**“**
Wound revision – abdominal	**“**	**“**
Hypospadias – BMG	*Hypospadias; epispadias revers*	*13/06/2013*
Omphaloplasty	*“*	*“*
Vesicotomy	*”*	*“*
Hypospadias - distal Duplay	**Hypospadias – intersex**	**11/06/2013**
Hypospadias - proximal graft	**“**	**“**
Hypospadias – scrotoplasty	**“**	**“**
Hypospadias - Duplay tube	*Hypospadias – intersex*	*12/06/2013*
Hypospadias – scrotoplasty	*“*	*“*

The 43 operations on the 18 patients are listed above, noting that some patients obviously had more than one operation. Seven patients had surgery for an anorectal anomaly and eight boys had surgery for the penile abnormality hypospadias.

Consultations

Pathology	Date	Location of Service
Anorectal anomaly - incis hern	9/06/2013	Kokopo
Multiple anomalies	"	"
Feeding difficulties - ? TOF	"	"
Meningomyelocele	"	"
Anorectal anomaly - prolap col	"	"
Cleft lip and palate	"	"
Haemangioma - right arm	"	"
Anorectal anomaly	"	"
Hirschsprung's	"	"
Anorectal anomaly - prolap col	"	"
Hypospadias	"	"
Anorectal anomaly	"	"
Hydrocephalus - Gross FTT	"	"
Hypospadias fistula *2	"	"
Hypospadias – fistula	"	"
Anorectal anomaly	"	"
Hypospadias	"	"
Microcephaly	"	"
Hydrocephalus - blind	"	"
Urine Retention? Aetiology	"	"
Anorectal anomaly - rectal ect	"	"
Hirschsprung's	"	"
Hypospadias; epispadias revers	"	"
Hypospadias - post release	"	"
Hypospadias - intersex	"	"
Hydrocephalus - open fontanell	"	"
Lipoma/hygroma - right facial	10/06/2013	"
Macrocephaly	12/06/2013	"
Rectal prolapse	"	"
Hydrocephalus FLK	"	"
Hydrocephalus	13/06/2013	"
Lipomeningocele - lumbar	14/06/2013	"
Cystic hygroma - right neck	16/06/2013	Lae
Hypospadias	"	"
Anorectal anomaly - cloaca	17/06/2013	"
Hirschsprung's - long segment	"	"
Wilms' tumour	"	"

In all there were 8 children with an anorectal anomaly, 3 with Hirschsprung's, 5 with hydrocephalus and 8 with genital anomalies, including children several who had multiple anomalies.

Sponsors and supporters

The following people and organisations have contributed to the project with their time, effort or money, or all three. The major financial donors were Islands Petroleum and Johnson and Johnson.

PNG High commissioner, Medical Board of PNG, Immigration Department PNG, Gazelle International Hotel, Sandra Lou, Felix Diaku, Tim Masiu, Annette Sete, Graham Vinivel, Dr Moi and other ENB surgical and nursing team, David Anderson, Qantas, Air New Guinea, Islands Petroleum staff - Kokopo & Lae, Anaesthetists - Kokopo & Lae, Theatre Nurses - Kokopo & Lae, Ward Nurses, Johnson and Johnson, Warner & Webster, Ionie, Nathan and Elliot and all those who attended and supported the fundraising dinner: Kevin Wright for providing the harbour cruise, Walter Benny and Lae Huon Gulf Rotary Club for arranging the hosting of accommodation in Lae.

Recommendations

1. More proactive use of PNG Paediatric Surgery expertise by PNG.
2. Private/public partnerships be encouraged.
3. A national Paediatric Surgical database to be set up and funded, with annual review by a different international surgeon each year.
4. Improved funding for Paediatric Surgery outreach within PNG.
5. Disposable equipment and visit specialist funding should be rebalanced.
6. A study of urine infections in children be initiated
7. Ultrasound equipment and training be broadened.
8. A review of current services and future needs be commissioned.