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HP3 Þ š6Ð í Ú Ù Ü µ Paediatric Surgery in Papua New Guinea

Report of the MONAHP visit

June - July 1996

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MB BS BMedSc FRACS MD

Contents

.c.Introduction

There have now been four years of the specialist training program in Paediatric Surgery in Papua New Guinea. Over the five visits and a total of 11 weeks, there has been a notable improvement in the standard of care for children with Paediatric Surgical conditions. These include the level of understanding of the conditions being treated, the management of children in general and the specifics of the surgical treatment, particularly in Hirschsprung's disease and imperforate anus. The availability of new anaesthetic machines in Port Moresby and the existence of pulse oximeters in all the centres are significant steps forward, not only for children. At this stage, however, there are still many gains to be made. Various aspects of the attachment of trainees to the program have improved the referral of cases early in the evolution of the disease, reducing the number of cases in which surgeons have tried their best to ameliorate the problem, but have been hampered by the lack of specific training.

The previous practice has resulted in a significant proportion of the cases operated on being redo surgery, resulting in difficulties in imparting the skills for primary treatment to the trainees, particularly as there have been a number of people who need to learn the procedures in different parts of the country. And, as the services that support Paediatric Surgery are as important as the surgery itself, it is appropriate to focus on a stratification through-out the country, aiming to have basic Paediatric Surgery available in each surgical centre, but the major cases should be referred to a limited number of Hospitals in which the surgical, medical, anaesthetic, radiological and nursing staff have the case load, training and expertise to provide the appropriate care.

Discussions of which hospitals are involved (I would suggest Port Moresby, Lae, Mt Hagen and Rabaul) would then allow for the surgical staff in those hospitals to be more specifically trained for the provision of the PNG's Paediatric Surgical service.

The suggested arrangement imposes transport and displacement of parents and children, but it would reduce the number of cases which require redo surgery, with the prevention of the unnecessary costs and suffering.

I have outlined below inexpensive equipment which would improve the standard of care, further beneficial training and donors who have contributed to the four week visit. A study which would improve the understanding of renal disease on children would involve a cost-effective project looking at the incidence of urinary tract infection in febrile children. This project has the support of the Paediatric staff in Rabaul, a centre which would be ideal for the conduct of such a study. Research, such as this and programs aimed at educating the public on our ability to cure many Paediatric diseases would improve the care of children.

I am indebted to many people for allowing me to be involved in the development of Paediatric surgery in PNG, especially as I have also had the opportunity to care for so many, very grateful families.

.c.Location Summary

.c.:Port Moresby

10.6.96 - 14.6.96 and 3.7.96 - 5.7.96

Once again the time available to work in Port Moresby was too short and the trainee surgical staff were too busy with their clinical commitments to take full advantage of the specialist visit.

The improvements in the theatres are helpful, but the limitations on the availability of anaesthetic staff results in too much time being taken between cases, a problem exacerbated by a limited opportunity for communication between the anaesthetic and surgical staff. This could be partly overcome by a resident and registrar both being delegated to the visit and all patients being admitted to the one (temporary) unit. Thus, the home team would be more easily identified, facilitating organisation of patients, with return of the children to the parent unit subsequently.

The education program would be enhanced by the specifically delegated attachment registrar being given the task of co-ordinating the lectures and tutorials; the visitor would then have a time-table of teaching commitments which fits with the local work practice and the attached registrar could be given the task of preparing some of the lectures for comment by the visitor, rather than didactic presentations without preparation by the trainees.

Each of the two visits this year was productive and enjoyable.

The new arrangements for transportation need to be sorted out before the arrival of the visitor, and to some extent the Port Moresby office simply created another point of liaison which had to be dealt with, which is difficult with access to distant telecommunication not being easily available in many centres, during the day. I was particularly concerned with the lavish nature of the car I drove during the second stay on Port Moresby. One, because of it attracting the attention of the rascals and the other because of the expense. I am, however, unaware of the nature of the purchase/hire.

.c.:Tabubil

15.6.96 - 18.6.96

The funding for the travel to Tabubil was provided by the mining company and the outpatient and theatre time was co-ordinated by the medical and nursing staff of the hospital. Unfortunately, the arrangement to operate on the week-end fell through just prior to our expected arrival. The visits to other centres were shortened as a result of not being able to utilise the Saturday and Sunday, as we had been able to in 1995.

The staff in the hospital were of great assistance during the time and the facilities are second-to-none in PNG. The work was greatly facilitated by having Dr Pip, the trainee surgeon, and Dr John Foote, a former Adelaide anaesthetist.

The worth of the trip to Tabubil was lessened by the limited involvement of the local medical staff and the resistance of the nursing staff to working after hours. However, nine patients had 11 operations and two further cases were

transferred to Port Moresby for surgery. Sixteen patients were seen during a Sunday morning clinic.

It would be unfortunate to exclude Tabubil from further visits, but the pressure on the available time for teaching those likely to be involved in Paediatric surgery in the future may preclude a trip to Tabubil. The alternative is to encourage the mining company to fund working over the weekend.

.c.:Mount Hagen

18.6.96 - 21.6.96

Mount Hagen is in the Western Highlands Province, nestled in a cool valley with agreeable weather all year round. The hospital is a 300 bed hospital with a relatively new building housing the Paediatric and intensive care wards on the ground floor. The surgical wards houses males and females, including children, in one large room. The surgical staff consists of two relatively experienced surgical registrars who are about to sit their first part I MMed (Surg) and the consultant Mr Jacob.

The worked performed included outpatient and in-patient consultation for 10 cases on the day of arrival, followed by a Rotary club presentation on that evening, giving the opportunity to highlight the need for Paediatric Surgical teaching in the hospitals and the community. The slide show was well received.

The following day was occupied by three long theatre cases, during which teaching on Urological and Paediatric Surgical management was conducted, particularly on urethral obstruction and anorectal anomalies. The final operative case was treated on the morning of 21.6.96; a previously failed anorectal anomaly repair with an excellent example of the management of a difficult situation being provided by the opportunity to operate on this seven year old child. The two further cases were unfortunately cancelled, but allowed for the time to be used for a lecture on common Paediatric Surgical problems to a combined audience of paediatric, anaesthetic, obstetric, surgical and radiological staff.

Limitations to the visit were;

1) the concurrent refurbishing of the theatre suite.
2) difficulties with co-ordination of sterilization of drapes.
3) limited instruments, sutures and catheters for paediatric surgery.

Notable features

Mount Hagen appears to be a safe location for visiting specialists to attends; by now it will have a fully functional, three theatre complex, it has an intensive care unit and a good co-operation from the other subspecialty medical staff and the paramedical anaesthetic team. The presence of one of the three radiologists in the country is a bonus to the surgical treatment of children.

As for Lae, Port Moresby and Rabaul supplies of urethral catheters, sterile and non-sterile gloves, endotracheal tubes and diathermy pads were provided. Also fine sutures small instruments for the operations in question were made available, overcoming some of the current local limitations.

.c.:Lae

23.6.96 - 29.6.96

Lae was the busiest of the centres, due to the huge number of cases and the willingness of the medical and nursing staff to complete the work. The operative sessions were often attended by more than one of the trainees and consultants, maximizing the educational benefit of the visit while fulfilling the requirement of treating the patients.

Children with large tumours at presentation, neonates presenting late with bowel obstruction, a diaphragmatic hernia case whose parents failed to bring the child for treatment, limitations in paediatric anaesthetic equipment and skills, and poor understanding of the importance of the post-operative management were notable down-sides of a highly successful visit.

During the seven days a ward round was conducted each day (with most of the surgical staff present), two outpatient sessions were conducted, four lectures or tutorials were given to medical staff and 20 cases were operated on. Also, two presentations were given at the local Rotary clubs.

Lae is notable for the involvment of the local Rotary clubs who provided funding during this visit and have indicated a willingness to be involved in providing subsequent financial assistance.

.c.:Rabaul

30.6.96 - 2.7.97

Located in the East New Britain Province, the city of Rabaul was largely destroyed during the volcano eruption in September 1994. The Nonga Hospital is now fully functional, although at times the wards are adversely affected by the continued accumulation of dust from the on-going activity of one of the two volcano vents. The theatre is functioning well without seeming to be particularly contaminated. During the brief visit 10 patients were reviewed and nine operations performed on eight patients. These were performed with the assistance and involvement of the recently appointed Dr Anton Wal and the trainee registrar, Dr Sammy Thomas and the surgical resident. Close liaison occurred with the Paediatric department.

Teaching was conducted during the operative sessions, of which there were five, and during tutorials with the resident and registrar during the breaks between. As for the other centres, these focused on operative surgery, management of the neonate and embryology.

The surgical cases included an EUA of an anorectal anomaly, three repairs of anorectal abnormalities, a diaphragmatic eventration, a hypospadias repair, EUA of a nose and exteriorization of an infected ventriculoperitoneal shunt. Also, a laparotomy on a neonate was also performed on the first day.

Discussion, following a presentation to many of the hospital medical staff, indicated an interest in studying the observation that very few children were diagnosed with pelviureteric junction obstruction in the early phase, nor vesicoureteric reflux in childhood. The Paediatric staff indicated an enthusiasm to develop a protocol for assessing the incidence of urinary tract

infection in those children presenting with acute febrile illnesses to the casualty department.

.c.Teaching Activities - Summary

Medical Lectures	6
Tutorials	11
Outpatient sessions	5
Ward rounds	18
Theatre Sessions	11
Rotary Lectures	3

Table 1: Teaching activities during the four week visit.

One hundred and three patients were seen in either the ward rounds or the outpatient sessions, covering much of Paediatric Surgery. The principle focus during the lectures and tutorials was embryology, operative Paediatric Surgery, Paediatric Urology - especially vesicoureteric reflux, pelviureteric junction obstruction and genital reconstruction, neonatal bowel obstruction, paediatric thoracic surgery and Hirschsprung's disease and imperforate anus. The tutorials were often conducted in the theatre tea-room because of a combination of the amount of time between cases and the large number of cases presented for surgical care.

.c.Operations - Summary

.c.:General Surgery

Orchidopexy/Herniotomy		7	
Incisional hernia		1	
Laparotomy		7	
Perianal teratoma		1	
Minor anorectal			5
Colostomy or closure			5
Soave/Swenson	(1 redo)		4
Pena	(5 redo)	12	
Subtotal			42

.c.:Urology

Hypospadias/Genitoplasty			5
Epispadias		2	
Urethroplasty			1
Cystoscopy		2	
Wilms tumour			1
Vesicovaginal fistula			1
Nephrectomy		1	
Ureteric reimplant			2
Pyeloplasty		1	
Subtotal			16

.c.:Other

Lobectomy		1	
Eventration		1	
Resection of Lumbar mass			1
Ranula			1
Nasopalatine teratoma			1
Cystic hygroma		2	
Hydrocephalus			2
Subtotal			9

Total		66	

Table 2: Paediatric Surgical operative procedures performed during the four week visit

.c.Needs for Improved Paediatric Surgical Services

.c.:A. Paediatric Surgical Instruments

The following new instuments are needed to enhance the standards of Paediatric surgery.

1. Paediatric instrument sets, including forceps, needle holders, scissors.

2. A Denis Browne ring retractor for bladder and kidney work.

3. Rectal suction biopsy instrument.

4. Nerve stimulator for intra-operative management of the anoretal anomalies.

5. A Paediatric oesophagoscope.

6. Paediatric cystoscopes in some centres.

7. Temperature probe and moitoring devise. As more than one baby became overheated during surgery this would have to be seen as a priority item for each of the centres likely to deal with major surgery in children.

.c.:B. Better Supplies of Disposables

1. Diathermy pencils are recycled and often malfunction.

2. Vicrly or dexon in 6/0, 5/0 and 4/0.

3. Ventriculoperitoneal shunts.

4. Betadine antiseptic.

(Adhesive diathermy pads can easily be taken by visitors from Australia).

.c.:C. Theatre Inventory

The combination of donated materials and stores supplies appears to have resulted in some degree of confusion in Port Moresby and Mt Hagen. A review of the inventories of the theatre stocks would assist the nursing staff and the provision of service to the patients.

.c.:D. Paediatric Radiological Services

Education of medical staff and students in the specific needs for the collection of good quality information in Paediatric Surgical patients appears lacking. The lack of facilities is part of the problem, but the limited knowledge of the radiology staff of the Paediatric surgical diseases and the limited knowledge of radiology of those dealing with the clinical management exacerbated the deficiency.

An attachment of a Radiologist with a subspecialist interest in Paediatric management would certainly assist the surgical students and problably the radiographers and radiologists.

The ultrasound machines available in most of the centres are unable to produce hard copy and, in Rabaul, the machine is hardly able to produce a picture on the screen. There are now new, compact, relatively inexpensive ultrasound machines which would be readily able to be put into service with minimal training. A training program for those centres where the specific expertise is not available could be easily arranged.

.c.:E. Paediatric Anaesthesia

While temperature monitoring and pulse oximetry will help those providing the anaesthetic to children, these do not replace experience and training the subspeciality. In particular, neonatal anaesthesia is as specialised as Paediatric Surgery. The provision of training in PNG would be facilitated by the Paediatric Surgeon and a Paediatric Anaesthetist working as concurrent visitors. The dual benefit would be the more efficient through-put of cases, thus improving the surgical teaching and the teaching of the anaesthetic staff.

.c.:F. Paediatric Histopathology

Diagnosing was often made more difficult because of the long turn-around time for specimens; Opinion on the solutions would be best sort from the PNG histopathology staff but, from the surgical perspective the solution would be better to come from an improvement in the delivery of specimens to Port Moresby. Diagnostic accuracy would be better in a centre where the facilities are adequate and the case load sufficient to maintain the skills of the pathologist.

.c.:G. Research into Urinary Tract Infections

Fever in children is common in PNG and often due to viral illness, pneumonia, malaria, meningitis, gastroenteritis. As a result it would appear that many urinary tract infections go undiagnosed. This contention is supported by cases of adult renal failure with kidneys that appear to have had vesicoureteric reflux as the cause of their decline and patients who do present with a pelviureteric junction obstruction, but only after the kidney has lost all its function. A research program to study this phenomen in Rabaul should be supported, with a view to extending the program, depending on the outcome of the pilot study.

.c.Recommendations

1. Concurrent visit of an anaesthetist with subspecialist interest in Paediatric anaesthesia.

2. Education of the community, medical students, residents and General Practitioners on diagnosis and management of urinary tract infections.

3. Community education on the curability of Paediatric surgical diseases, especially inguinal herniae, a common condition which should never kill a child, but which does in PNG.

4. One registrar to go to all centres.

5. Plan of attachment to be confirmed one month before the trip.

6. A temporary unit be estabilished in Port Moresby with a designated registrar and resident

7. The above listed equipement to be purchased, in consultation with the surgeons in Lae, Mt Hagen, Rabaul and Port Moresby.

8. Teaching in radiology at the graduate and undergraduate level to be assisted.

9. Ultrasound services in the major centres to be improved.

.c.Acknowledgements

Special thanks go to Professor David Watters and Dr Pip for assistance with the overall arrangement of my visit.

The nursing staff in the wards and the theatres of each of the centres were asked to work hard, which they did willingly. The anaesthetic and radiology staff were also called upon to provide an increased Paediatric service, to which they extended themselves. Their contribution should be recognised.

Financial and material support was provided by a number of organisations: The theatre nursing staff of the Women's and Children's Hospital in Adelaide provided recycled goods for each of the PNG hospitals; Ansell supplied over 200 pairs of gloves; Ethicon provided appropriate sutures; The Huon Gulf Rotary club of Lae provide free accommodation and pharmaceutical and other equipment for the surgery in Lae; Bard made available a generous supply of urethral catheters; Qantas and Air New Guinea allowed equipment to be carried free of charge. Last, but not least, Brigid, Emily, Rachael and Simon Dewan; without their commitment my visit would not have occurred.

.End Table C.
Contact Numbers for hospitals visited

	Phone	Fax
Mount Hagen General Hospital PO Box 36 Mount Hagen Western Highlands Province	52 166	52 2127
Ok Tedi Hospital PO Box 1 Tabubil Western Province	58 3275	58 9362
Angau Hospital PO Box 457 Lae xxxxxxxxxxxx Province	43 2100	xxxxxxxxx
Nonga Hospital PO Box Rabaul East New Britain Province		
Port Moresby General Hospital Boroko		