REPORT OF THE PAPUA NEW GUINEA

PAEDIATRIC SURGICAL PROGRAM

JULY 1995

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Summary

Over a two week period 42 operations were performed on the 10 operative days, with most operating sessions being at least 10 hours long. The majority of cases were major procedures, many were redo operations and a number took over 4 hours (Fig.1). This workload was only possible through the co-operation of the surgical staff in Port Moresby, Lae, the medical staff in Tabubil and the anaesthetic and nursing staff in each of those centres. The person who contributed most was Dr Pip, a surgical trainee, who helped with the preoperative arrangements, assisted with 33 of the operations and helped clarify the post operative care. The superb team attitude of all the staff made this trip the most successful yet, both with the number of children treated and the amount of subsequent teaching achieved.

The number of formal tutorials and lectures was less than on previous trips, however, the informal bed side teaching was attended by a larger number of students and medical staff than occurred on previous visits. Importantly, many of the former lessons appeared to have had an impact. This was particularly evident with the surgical staff in Lae.

The most significant group of patients on this occasion were the five children who had difinitve surgery for Hirschsprung's disease (congenital aganglionosis coli). Three had previously had one or more attempts at definitive repair, with failure due to a lack of training in the principles of treatment of this condition. The other two had to be treated in a way modified by the lack of perviously accumulated biopsy and barium enema information. Three further cases, allowed the appropriate diagnostic work up to be demonstrated. The junior surgical staff appear to be learning the management of this condition, but further educational input is required. The importance of this group is highlighted by three having had a total of 9 operations prior to the recent procedure; the suffering and worsened prognosis of the protracted management of these children are obviously significant, but less appreciated is the cost and facility saving if they had initially been treated by a trained person. To overcome these problems, at this stage, it is probably appropriate to educate the surgical staff as to the emergency care and encourage an attitude of seeking further specialist advise and involvement.

Figure 1: The patients are grouped according to the different pathology, the operation performed and the age of each patient is presented.

Age (mths)	Pathology	Operation
General		
2	Cystic Hygroma	Excision of cystic hygroma
9	Duodenal Web & gastric malrotation	Gastroduodenostomy, Web excision
24	Haemangioma R leg	Amputation
24	Peritoneal pseudocyst	Laparotomy
24	Hydrocele	Herniotomy
60	Inguinal Hernia	Herniotomy
Anorectal anomalies		
4	Imperforate anus - high	Pena procedure
8	Imperforate anus - high	Pena procedure
11	Imperforate anus - high	Pena procedure
12	Imperforate anus - high	Pena procedure
96	Imperforate anus - high	Pena - abdo perineal
24	Imperforate anus - low	Pena - minor
36	Vestibular anus	Pena - minor
12	Imperforate anus	Colostomy revision
60	Anal fibrosis - post Pena	Colostomy revision
12	Imperforate anus - high	Colostomy - sigmoid
54	Incontinence - post Pena	EUA + dilatation
Congenital aganglionosis coli		
8	Hirschsprung's	Soave - Transverse colon
12	Hirschsprung's	Soave - Rectosigmoid
24	Hirschsprung's	Soave - Rectosigmoid
24	Hirschsprung's	Swenson - modified
60	Hirschsprung's	Swenson - modified
4	Hirschsprung's	Open rectal biopsy
36	Hirschsprung's	Open rectal biopsy
60	Hirschsprung's	EUA and bowel washout
60	Hirschsprung's	Colostomy, rectal Bx
36	Colostomy breakdown	Colostomy repair
36	Two colostomies, sigmoid strict.	Sigmoid colect., close colostomy
54	Constipation - post Soave	Posterior myomectomy
Urology		
9	Hypospadias - coronal	King-Duplay
18	Hypospadias - mid shaft	Pedicle Patch repair
24	Hypospadias	Pedicle Patch repair
24	Hypospadias - coronal	Pedicle Patch repair
11	Megaureter, primary obstructed	Ureteric reimplant - imbrication
96	Meatal stenosis	Glansplasty
72	Intersex - CAH	Genitoplasty
96	Xanthogranulomatous Pyeloneph.	Nephrectomy
180	Vesicovaginal fistula - prev.	Urethral dilatation, cystoscopy
420	Urethral obstruction-traumatic	Urethrouthrethrostomy-perineal
30	Urethral stricture	Cystoscopy and dilatation

12	PUJ obstruction - huge	Pyeloplasty - Anderson Hynes
24	Bladder exstrophy	Primary closure

Figure 2: The distribution of the 42 patients according to age group. The group included one adult with a bulbar urethral stricture.

Areas of Concern

Radiology

The Port Moresby radiology department has improved the quality of images produced, but has recently had a restriction of the availability of contrast material and is still restricted in their ability to produce studies to the time scale often appropriate for the optimum care of the patients. I am sure this is with a background of attempts to provide the best service possible with their limited resource. The radiology departments in Tabubil and Lae are more fortunate, and although they have limited facility are co-operative and provide a high standard of images.

Unfortunately, there is still little availability of hard copy images from ultrasound studies. This information allows for further clinical questions to be asked after the study, without the need to inconvenience the patient. The full potential of ultasound can only be gained if hard copy of the images is available.

Theatre facilities

The theatres in Port Moresby do not have the appropriate suture material for Paediatric Surgery and the heating for babies are often deficient. Suture materials are part of the kit carried and are essential for the procedures to have the best chance of success. A paediatric cystoscope was also carried and used on two occasions. A supply of previously used diathermy pads and pens were also supplied, along with a number of other items either not available or in restricted supply in PNG. These were able to be supplied because of the generosity and efforts of the nursing staff of the Women's and Children's Hospital in Adelaide

As in previous reports, I mention the skin preparation solution and urinary catheters. An iodine containing substance is recommended for the prepartion and cleansing of the skin and bowel, and a water based form is required for the bowel. The Betadine required was not usually available, and would be an important addition to the regular theatre supplies. Silicone catheters, appropriate to children, were not available, apart from those supplied by myself; particulary in male children, the prevention of urethral strictures makes these more expensive catheters cost effective. These were carried in the kit taken to PNG.

Post operative nursing care

The ward nursing staff, like the resident medical staff have not had the advantage of specific training in the care of Paediatric surgical nursing managment. In Tabubil and Lae this deficiency was largely compensated by the numbers of staff available, allowing for adequate time to attend to all the requested or subsequently indicated needs of the patients. In Port Moresby, however, the ability of the nursing staff to fulfill the post-operative orders was at times less than adequate. This situation was exaserbated by the lack of time of the resident staff to review the care of the patients in the ward. While further funds would be required to improve the standard, an additional approach would be the inclusion of either tutorials to the nurses by the visiting specialists or an alternative program of nurse education.

Paediatric colostomy formation

A often observed complication was that of colostomy prolapse or stenosis. Very few of the colostomies seen were free of complication, usually prolapse of one or both of the proximal and distal bowel. This problem was addressed by identifying the difference in the surgical approach to the paediatric colostomy formation, in order to prevent the prolapse problem. Fortunately, the lesson was able to be widely taught.

Cost saving, but at a price

Another issue which I have mentioned in other reports, but which improtant enough to restate, is the practice of taking of aliquots of saline from a larger container for use in a syringe, both in the ward and in theatre. The risks of this technique are unacceptably high, and the practice should be abandonded, despite the cost of providing the smaller ampules of saline and water.

Funding

The venture was inexpensive because of the need for paid accommodation for six nights only, and the use of a hire car for the time in Port Moresby only. The accommodation was thanks to the Huon Gulf Rotary club.

Conclusion

This trip has been the most successful of the four Paediatric surgical attachments over the last three years. It was successful because of the co-operation of a large number of people and improved expectation of higher standards in the care of Paediatric Surgical patients, with subsequent reduction in morbidity and cost per patient. Further training is obviously needed to enhance the achievements thus far. This could be orchestrated by an expansion of the program to four weeks in 1996 and the appointment of a Surgeon with a subspeciality interest to Port Moresby and Lae by the turn of the century.

Funding has been offered by the Lae Huon Gulf Rotary club for a one week attachment in 1996, a gesture which I think should be taken up and which I am happy to facilitate by presenting to Rotary clubs in Adelaide.

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Lae report

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From 31.7.95 to 5.8.95 a Paediatric surgical training and service program was conducted at the Angau Memorial Hospital in Lae. The visit was co-ordinated by the surgical staff of Dr's Liko, Beaso and Pip and carried out with the asistance of the nursing staff of the wards and theatres, and the anaesthetic and radiology staff. The program was an enormous success due to the dedication and good-will of many people and the high standard of the medical, nursing, anaesthetic and radiological support received.

A total of 14 operations were performed, many with complicated diseases requiring long and difficult surgery (Fig. 1).

Figure 1: The description of the disease, operation procedure and age of the 14 operative patients. Ten of these were major operations.

Age (mths)	Pathology	Procedure
2	Cystic Hygroma	Excision of cystic hygroma
9	Duodenal Web & malrotation	Gastroduodenostomy & Web excision
24	Hirschsprung's	Soave
24	Hirschsprung's	Swenson - modified
60	Hirschsprung's	Swenson - modified
4	Hirschsprung's	Open rectal biopsy
60	Hirschsprung's	Colostomy, rectal Bx
60	Hirschsprung's	EUA and bowel washout
11	Imperforate anus - high	Pena
36	Vestibular anus	Pena - minor
9	Hypospadias - coronal	King-Duplay
72	Intersex - CAH	Genitoplasty
420	Urethral obstruction-traumatic	Urethrouthrethrostomy-perineal
30	Urethral stricture	Cystoscopy and dilatation

Despite the long hours, no-one complained. The patients have gained enormously, especially those who have had failed surgery in the past and one man in particular, who had to have a bladder catheter for 12 years, he will now be free of his tube, continent of urine and fertile.

The visit was part sponsored by AusAID (administered through IDP) and given support from the Huon Gulf Rotary club.

Deficiencies identified include the lack of the skin preparation solution Betadine, the lack of the fine suture material needed for neonatal and paediatric surgery and a lack of urinary catheters for children.