Paediatric Surgery Training in Papua New Guinea

MONAHP

A Report for March 1999

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Overview

The development of Paediatric Surgery as a subspecialty in PNG is progressing satisfactorily. This is reflected in the large number of cases referred for subspecialty care, the improved performance of paediatric colostomies by PNG surgeons, the improved level of knowledge of paediatric surgical conditions amongst the paediatric and surgical trainees, and the wider knowledge of paediatric anaesthetic techniques. Also, the use of subcuticular suturing and transverse incisions in children is now more wide-spread, and the correct sequence of colostomy and biopsy in Hirschsprung's disease is more common.

The success of the teaching during this visit was enhanced by the large group of Registrars from a number of disciplines being involved in the lectures. Also, a few key people participated; the most notable was the participation of the Mt. Hagen surgeon in the work in Lae.

However, children are still having more episodes of surgery and greater risk of adverse outcome from surgery because some of the basic principles are not being applied. Part of the problem lies in the lack of community level knowledge that surgical disease in children can appear as malnutrition, malaria or pneumonia and that early treatment will not only prevent death and suffering, but will save money. Many of the diseases will not kill the child, but will add significant burden to the community if they are dealt with tardily or incorrectly. This latter issue particularly relates to the late presentation of renal anomalies and Hirschsprung's disease.

The training program has involved two Paediatric Surgeons, with a total of 13 visits. This trip was my 11th visit funded by the Ausaid funded IDP/MONAHP or PIP management groups. The program was again supported from a number of additional sources, with the greatest support from the Huon Gulf Rotary Club, specifically for accommodation in Lae and equipment; the Lae Lionesses also assisted. Equipment was also donated by Kendall, Sherwood, Davis and Geck, Taylor Bryant and Ansell International, and recycled items were 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 kindly transported these items free of charge.

The project is now entering a new and exciting phase via the appointment of Dr Mclee Mathew to a surgical registrar position in Melbourne; it is anticipated that a return visit with Mclee will take place on the last weekend of November, and he will return as a trained Paediatric Surgeon in mid 2000.

Summary of Activities for March 1999

Teaching

Teaching was conducted during the following sessions:

Consultations	93
Ward Rounds	20
Theatre Sessions	11
Operative Cases	52
Lectures	7
Tutorials	6
Outpatients	3
Radiology Session	1

Ward Rounds: Ward rounds were conducted in the morning and evening on most days in both Port Moresby and Lae. The teaching involved during these sessions was on the post-operative care of the patients aimed at the paediatric surgical trainee, the resident staff and particularly the nursing staff. This nurse-teaching role was enhanced by the presence of student nurses during most of the rounds.

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 52 operative cases with 133 hours of theatre time were mainly focused on the honing of the skills of Dr Mclee Mathew. Three other surgical staff took the opportunity to be closely involved in the operative surgery: Dr Willi Kaptigau in Port Moresby, Dr Benjamin Yapo and the Mt. Hagen Surgeon, Dr Poki. The main advantage of the other staff being involved was the participation in discussion on the appropriate use and performance of a Paediatric colostomy.

Lectures + Tutorials: Lectures were presented to Paediatric, Anaesthetic and Surgical trainees. The involvement of all the subspecialties is an advantage to the development of understanding of anomalies treated by a Paediatric Surgeon. Very productive, interactive sessions were conducted in combination with Dr Ken Brownhill, the visiting Anaesthetist, and the audit meeting focusing on the "lessons learnt", assisted by the use of digital images of cases dealt with during the previous week. The main theme was paediatric colostomy formation and the sequence of events appropriate to the care of Hirschsprung's disease. Tutorials on a number of paediatric surgical scenarios that Dr Mclee Mathew would encounter during his training time Melbourne were the subject material of number of tutorials between operative cases.

The following is a list of the topics covered in the Lectures and Tutorials:

1. *The acute scrotum*
2. *Gastrointestinal tract surgery*
3. *Inguino-scrotal surgery and pathology - Department*
4. *Inguino-scrotal surgery and pathology - Students*
5. *Neonatal emergencies*
6. *Hirschsprung's and anorectal anomalies*
7. *Intussusception and fluid Mx*
8. *Pyloric stenosis and colostomies*
9. *Appendicitis and diaphragmatic hernias*
10. *Paediatric urology*
11. *Urinary tract infection*
12. *Paediatric Surgery in PNG - Rotary*
13. *Hospital Management in PNG Paediatric Surgery*

Operative Surgery

The following cases were operated on during the visit, all had the involvement of Dr Mclee Mathew, including the pre and post-operative management. There were a total of 76 operations on 52 patients. Once again the majority of children seen were pre and post-operative cases of anorectal anomaly (29) or Hirschsprung's disease (19). Unfortunately, the previous increase in the number of patients with urological problems was not improved on during this visit; while it is possible that the arrival of two surgeons with urological training has influenced the referral pattern, this does not appear to be the case, particularly as two adult patients were referred with urological problems, in Lae.

Port Moresby 10/3/99 - 19/3/99

#	Age (mths)	Hosp #	Pathology	Operation
1	69	33410	Anorectal anomaly - anocutan f	Anoplasty - cutback
2	18	121560	Anorectal anomaly - rectovest	Anoplasty - cutback
3	105	127217	Hirschsprung's	Appendicectomy
4	78	074153	Hirschsprung's	Appendicectomy
5	45	120004	Hirschsprung's	Appendicectomy
6	180	112053	Hirschsprung's	Appendicectomy
7	84	128874	Urethral rupture -SP 5 mths	Circumcision
8	10	127291	Anorectal anomaly - rectovag	Colostomy - double barrel
9	34	081502	Anorectal anomaly - rectvestib	Colostomy - trans/div
10	122	11219	Anorectal anomaly	Colostomy closure
11	50	110624	Hirschsprung's	Colostomy closure
12	12	129426	Anorectal anomaly - colost prol	Colostomy revision - Dewan
13	16	134554	Dilatation on US	Cystoscopy
14	86	133314	Wound infect/blad stone CRF	Cystoscopy
15	122	11219	Neurogenic bladder/ARA	Cystoscopy + urodynamics
16	336	134467	Pelvic # unilateral sup+inf PR	Cystoscopy - rail roading
17	64	117375	Post Pena anal stricture	EUA - anal dilatation
18	69	33410	Anorectal anocutan f	EUA faecectomy
19	18	121560	Anorectal - rectovest	EUA faecectomy
20	16	134554	Testes - bilateral impalpable	Fowler-Stephens 1st
21	47	134553	Testes - impalpable	Testes - bilateral impalpable
22	157	045541	Hypospadias - post repair	Free graft skin urethroplasty
23	108	801024	Hernia - inguinal	Herniotomy
24	96	119857	Hypospadias	Hypospadias - second stage
25	64	117375	Undescended tecticle	Orchidopexy
26	16	129219	Anorectal anomaly - high	Pena
27	34	081502	Anorectal anomaly - rectvestib	Pena + plication
28	53	133770	Anorectal anomaly - rectvestib	Pena + plication

29	84	128874	Urethral rupture - SP 5 mths	Perineal urethroplasty - graft
30	33	098699	Hirschsprung's	Swenson - modified
31	168	083416	Hirschsprung's	Swenson - modified
32	33	098699	Hirschsprung's	Swenson - modified
33	45	120004	Hirschsprung's	Swenson - modified
34	105	127217	Hirschsprung's	Swenson - modified
35	180	112053	Hirschsprung's	Swenson - modified
36	78	074153	Hirschsprung's	Swenson - modified
37	86	133314	Wound infect;blad stone; CRF	Wound debridement

Lae 20/3/98 - 26/3/98

#	*Age (mths)*	*Hosp #*	*Pathology*	*Operation*
1	15	388144	Anorectal anomaly - low fem	Anoplasty - cutback
2	1	388437	Anorectal anomaly - low male	Anoplasty - cutback
3	9	388330	Anorectal anomaly - low fem	Anoplasty - cutback
4	86	352085	Hirschsprung's	Appendicectomy
5	58	388331	Hirschsprung's	Appendicectomy
6	11	388581	Hirschsprung's	Appendicectomy
7	29	388107	Hirschsprung's	Colost close - transverse
8	29	388107	Hirschsprung's	Sigmoid colostomy
9	40	388450	Anorectal anomaly - high fem	Colostomy closure
10	57	388362	Anorectal anomaly - high male	Colostomy closure
11	130	388239	Anorectal anomaly - high fem	Colostomy closure
12	25	382519	Anorectal anomaly - high fem	Colostomy closure
13	58	388322	Hirschsprung's	Colostomy revision
14	13	388360	Anorectal anomaly - high fem	Colostomy revision - Hartman's
15	25	382519	Anorectal anomaly - high fem	EUA - anal dilatation
16	71	388243	Anorectal anomaly - stenosis	EUA - anal dilatation
17	27	-	Hydrocele - L	Herniotomy
18	45	-	Hydrocele - R	Herniotomy
19	0.2	387794	Hernia - RIH	Herniotomy
20	0.2	387794	Hernia - umbilical	Herniotomy
21	78	388361	Hypospadias repair - post 1st stage	Hypospadias repair - 2nd stage
22	0.1	388337	Breast abscess	Incision and drainage
23	34	387561	Hepatoblastoma	Laparotomy
24	58	388322	Hirschsprung's	Laparotomy + Bx
25	29	388107	Hirschsprung's	Laparotomy + Bx
26	0.2	387794	Abdo distension, ? mass on US	Laparotomy - liver Bx
27	61	383543	Wilms tumour	Nephrectomy
28	502	387518	Renal calculus	Nephrolithotomy
29	336	387257	Pyonephrosis	Nephrostomy tube insertion
30	150	388364	Anorectal anomaly - high male	Pena, redo
31	57	388362	Anorectal - high male;abdo/perineal	Pena, redo
32	25	388298	Thyroglossal cyst	Sistrunk's
33	18	388186	Hirschsprung's	Swenson - modified
34	86	352085	Hirschsprung's	Swenson - modified
35	58	388331	Hirschsprung's	Swenson - modified
36	11	388581	Hirschsprung's	Swenson - modified
37	148	388106	Pelvic teratoma	Tumour excision
38	120	388299	Intrapleural tumour	Thoracotomy
39	25	388298	Lung + subcutaneous cyst	Thoracotomy - cyst excision

Outcome of Previous Paediatric Surgical Visit Recommendations

Radiological Support: Renal anomalies in children are obviously still not being diagnosed at the rate expected by the previous experience with pelviureteric junction obstruction. Wider use of ultrasound and a higher suspicion of urinary tract infection as the cause of fever in children is necessary.

The radiology staff, both in Port Moresby and Lae, provided a great deal of assistance with the management of the paediatric surgical patients. However, the subtleties of some of paediatric surgical material and the interpretation indicated that training sessions to Radiographers, Radiologists, Surgical and Paediatric trainees and Medical Students are useful.

Theatre Equipment: Donations in kind and the Department of Health supplies have shown some improvement, but there continue to be significant shortfalls in suture, diathermy leads and pads, quality theatre linen and paediatric surgical instruments. Through the Rotary Club mechanism some of these needs will be met, particularly the linen and diathermy equipment.

Nurse Education: Nursing staff have, on an individual basis at the ward level and by participation in the lectures, availed themselves of an opportunity to improve their paediatric surgical knowledge. Unfortunately, there has not as yet been any formal additional tutorial structure put in place for the assistance of the nurses in the development of their skills. Infection control and the ways in which parents may maximally assist in the care of the children would be important aspects of any such program.

Organisation of Specialist Visit: Dr Mclee Mathew has again taken on the task of co-ordinator of the Paediatric Surgical visit with the assistance of the Department of Surgery in Port Moresby, Mt. Hagen, Lae and Rabaul. The outlying centres have been proactive in the use of the service and teaching opportunity. The co-ordination was particularly assisted by the efforts of Dr Willi Kaptigau and Dr Benjamin Yapo.

Paediatric Anaesthetic Training: Dr Ken Brownhill has now provided this service during two visits. It would enhance his efforts if designated Registrar or Consultant staff were attached to the paediatric surgical lists. While the service to the patients is enhanced during the operating sessions, it is unfortunate that the PNG anaesthetic staff were not involved in a more hands-on manner; the pressure of work is obviously a significant factor.

Considerations for Further Development

The issues to be considered for the future now focus on the training of Dr Mclee Mathew in Melbourne during 1999/2000. 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 saving, life saving service and education program in 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. The next development will be the formulation of a protocol for the performance of a colostomy.

Paediatric Urological Disease: Lives are being lost because these diseases continue to be under-diagnosed, a situation which 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.

Paediatric Surgical Nursing and Radiological Training: As yet these repeated recommendations have not been implemented. Attention to these areas of expertise is important to the development of services to children with a paediatric surgical disease.