A Report of
Paediatric Surgical Teaching in Bangladesh

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Background

Paediatric Surgery is an important specialty in Bangladesh, not least of all because of the large proportion of the 130 Million population who are children. It is important to realise that the extent of the problem in providing care to these children is made more enormous by the accumulation of previously untreated major anomalies. The focus of the Bangladesh Association of Paediatric Surgeons, and of the training assistance provided by the visits from Australia, is to improve quality of life, rather than on the prolongation of suffering. Australasian assistance with the teaching of Paediatric Surgery and Urology began in 1993 with a visit funded by the International Federation of Surgical Colleges. The one month training program was initiated by the executive of that organisation with the assistance of the then Secretary of the IFSC, Mr E Durham Smith of Australia and Professor Golam Rasul of Bangladesh. Teaching and surgery were conducted in both Dhaka and Chittagong, and involved the trainees of the recently initiated Masters course in Paediatric Surgery. Three further visits have occurred in 1994, 1997 and 1998, the 1997 visit funded as a follow-up to the awarding of Dr Tahmina Banu (a Bengali Paediatric Surgeon) with the Royal Australasian College of Surgeons, 1996, Rohan Nicks Scholarship. Dr Kamal, from Sylhet, has since been awarded a similar scholarship for 1998 which took him to a Registrar post in Perth. The current visit was organised as an association between the Royal Australian College of Surgeons and the Association of Surgeons of Bangladesh, through the Paediatric Surgical Associations of each country.

Paediatric Surgical training has only been in existence in recent years and there is still only one Professor of Paediatric Surgery in the country. The burden of both the clinical and teaching load is therefore enormous, thus the continuation of assistence with training and with the care of children with surgical problems remains essential.

Bangladesh medical authorities have continued their expansion of paediatric surgical posts, however, the facilities are relatively limited.

Paediatric Urology Facilities

In Dhaka paediatric surgery is conducted in four teaching hospital locations, the main facilities being provided by **Bangobandhu Sk Mujib Rahman University** (known as BSMMU), the **Dhaka Shishu Hospital** and the **Dhaka Medical College Hospital.** The majority of the teaching and patient care during the two weeks occurred at either BSMMU or DSH.

The **Bangobandhu Sk Mujib Rahman University** provides care for paediatric urology patients through the Urology Service as well as the Department of Paediatric Surgery. Unfortunately, the children are not housed in the same ward, nor are the two serviced adequately linked to provide the optimum care for such patients. The Department of Paediatric Surgery is extremely limited in the ward space and operating theatre time with only one day per week of theatre and only 16 beds. The ward infection control, and perioperative management could be improved by the development and implementation of appropriate protocols, the involvement of the junior medical staff and parents in the monitoring of patients, plus the more extensive use of audit to ensure the maximum good is achieved; this would relate particularly to

the management of patients with a know poor prognosis. The well supplied resource for the unit is that of manpower, with a Professor, two Associate Professors (Dr Mohamad Mutiur Rahman; Dr M Saiful Islam), two Assistant Professors (Dr Ruhul Amin; Dr Jamal Siddiqui), three Assistant Registrars, one Medical Officer, one Research Assistant, and usually one or two Masters of Surgery students

Dhaka Shishu (Children) Hospital is a 305 bed hospital which opened the current premises in 1977. There is a well developed service in Paediatric Surgery, providing service to a mainly fee paying patients in 50 in-patient beds. There is an active Masters program which is unfortunately run separate to that of the **Bangobandhu Sk Mujib Rahman University;** obviously a unification of the trainining program for Paediatric Surgery for all Universities under the Society of Paediatric Surgeons of the Bangladesh Association of Surgeons would facilitate more broadly based training accreditation and manpower planning. Supplies of equipment in the ward and theatre are similarly limited as in other hospitals in Bangladesh.

Paediatric Surgical Equipment

Donations in Kind

Teaching Sessions

Teaching activities included nine lectures and eight tutorials on the following topics:

	Lecture Title	*Date*	*Location*
1.	Urodynamics + unstable bladder	31/5/99	BSMMU
2.	Bladder augmentation	1/6/99	BSMMU
3.	Hypospadias	2/6/99	BSMMU
4.	Pyeloplasty + horseshoe	3/6/99	BSMMU
5.	Urethral obstruction	7/6/99	DSH
6.	Duplex systems	8/6/99	DSH
7.	Neurogenic bladder	11/6/99	DSH
8.	Renal investigation	11/6/99	DSH
9.	Vesicoureteric reflux	11/6/99	DSH

	Tutorial Title	*Date*	*Location*
1.	Pyeloplasty	1/6/99	BSMMU
2.	Urinary tube management	4/6/99	BSMMU
3.	Urolithiasis	6/6/99	DMCH
4.	Operative Paediatric Urology	7/6/99	DSH
5.	Operative Paediatric Surgery	8/6/99	DSH
6.	Anorectal anomalies	10/6/99	DSH
7.	Prenatal hydronephrosis	11/6/99	BSMMU
8.	Pyloric stenosis	11/6/99	BSMMU

The lectures at Bangobandhu Sk Mujib Medical University were conducted at 9.00 am in the 9th floor Lecture Theatre, with 20-30 surgical staff and trainees in attendance, both from the Department of Paediatric Surgery and Urology and trainees from other institutions. Lectures at the Dhaka Shishu Hospital were mainly conducted on the holiday Friday, because of the difficulty fitting the lectures in between completing surgery at DSH in the morning and commencing operating at BSMMU in the afternoon. The Dhaka Shishu Hospital lectures were given to the Paediatric Surgical Trainee, some of whom had been able to attend the other series of lectures. In all, 50 different surgical trainees and staff were involved in the teaching program, much of which occurred during the ward rounds and operative sessions.

Surgical staff participating in a surgical procedure at BSMMU

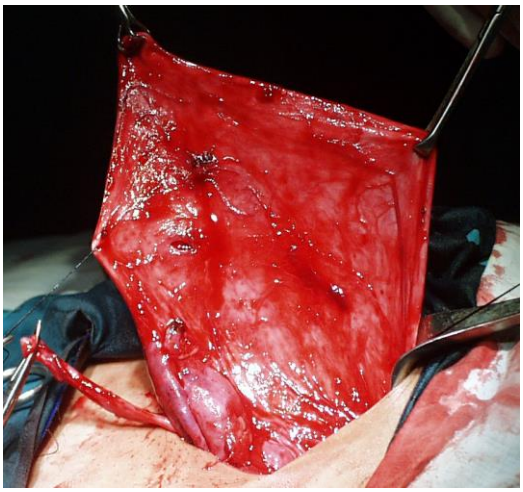
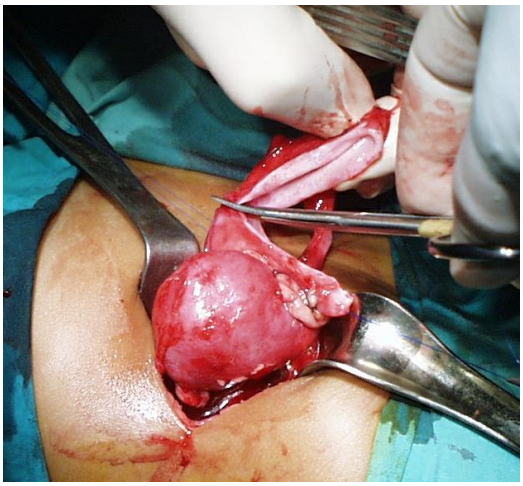
Clinical Work

Seventy-eight consultations were conducted during the visit, 35 of which occurred in the wards, 43 as part of inpromptu or formal outpatient sessions; 53 of the patients were seen in BSMMU and 25 in DSH. Ward rounds were usually conducted as a teaching exercise with the junior surgical staff; in all, 16 ward rounds took place, five of which were at the DSH and 11 at BSMMU.

During the theatre sessions a total of 31 patients had a total of 51 operations, over 75 hours of theatre time, which covered 17 theatre sessions. The operations performed during the two week visiting Professorship included:

Operation	***Date***	***Pathology***	***Hosp and Number***
Bladder exstrophy closure	2/6/99	Caudal defect + exstrophy bld	BSMMU - 186/26
Bladder exstrophy closure	31/5/99	Bladder exstrophy - M	BSMMU - 967/1
Bladder exstrophy closure	6/6/99	Bladder exstrophy - F	- 9190/9
Chordee release	9/6/99	Hypospadias	DSH - 6923/4
Circumcision	12/6/99	Neurogenic bladder	DSH - 9539/4
Cloacal repair	12/6/99	Cloacal anomaly	DSH - 9412/14
Cystoscopy	12/6/99	PUJ obstruction - ? VUR	BSMMU - 91012
Cystoscopy	12/6/99	Cloacal anomaly	DSH - 9412/14
Cystoscopy	3/6/99	COPUM - old OK	BSMMU - 1965/14
Cystoscopy	11/6/99	Bladder exstrophy	BSMMU - unk
Cystoscopy	31/5/99	VUR, diverticulum	BSMMU - 604/10
Cystoscopy	12/6/99	Neurogenic bladder	DSH - 9330/19
Cystoscopy	12/6/99	Neurogenic bladder	DSH - 9539/4
Cystsocopy/fulguration	3/6/99	COPUM	BSMMU - unk
Dilatation	10/6/99	Urethral stricture	DSH - unk
Dilatation-failed cystoscopy	2/6/99	COPUM	BSMMU - 98960
Diverticulectomy	1/6/99	VUR, diverticulum	BSMMU - 604/10
Duplay tube - 2nd stage	1/6/99	Hypospadias - distal, redo	BSMMU - unk
Duplay tube - 2nd stage	5/6/99	Hypospadias - redo	DSH - unk
Duplay tube - 2nd stage	30/5/99	Hypospadias - distal, redo	BSMMU - 895/1
Epispadias repair	10/6/99	Epispadias	DSH - 9447/2
EUA - evacuation of collection	1/6/99	VUR, divertic, bladder leak	BSMMU - 604/10
EUA penis	5/6/99	Meatal stenosis	DSH - unk
Exploration	10/6/99	Bladder leak	BSMMU - 604/10
Free graft repair	6/6/99	Hypospadias - scrotal	DMCH - unk
Fulguration	10/6/99	COPUM	DSH - unk
Incision + Drainage	8/6/99	Fistula - huge perianal	DSH - 6934/15
Laparotomy	9/6/99	Sacrococcygeal teratoma	DSH - 9441/14
Laparotomy	8/6/99	Abdominal mass	DSH - 6877/7
Laparotomy + drainage	8/6/99	Abdominal mass - abscess	DSH - 9324/10
Laparotomy - excision	8/6/99	Ovarian teratoma - huge	BSMMU - unk
Nephrostomy	3/6/99	PUJ obstruction	BSMMU - 964/8
Orchidopexy	9/6/99	Undescended testicle	DSH - 6923/4
Orchidopexy - bilateral	1/6/99	Undescended testes - intraabdo	BSMMU - 65396
Osteotomies - anterior	6/6/99	Bladder exstrophy - F	DSH - 9190/9
Osteotomies - anterior	2/6/99	Caudal defect + exstrophy bld	BSMMU - 186/26
Osteotomies - bilatl posterior	31/5/99	Bladder exstrophy - M	BSMMU - 967/1
Partial Resection	9/6/99	Sacrococcygeal teratoma	DSH - 9441/14
Phalloplasty-full-thick graft	7/6/99	Penis - electric injury	DSH - unk
Pyelopalsty - L	3/6/99	PUJ obstruction	BSMMU - 1133/20
Pyeloplasty - L	9/6/99	PUJ obstruction	BSMMU - 964/8
Pyeloplasty - L	3/6/99	PUJ obstruction	BSMMU - 47594/4
Pyeloplasty - R	2/6/99	PUJ obstruction	BSMMU - 91012
Rectal Suction Bx	9/6/99	Hirschsprung's	DSH - unk
Small bowel resection	8/6/99	Ovarian teratoma - huge	BSMMU - unk
Ureteric reimplant	1/6/99	VUR, diverticulum	BSMMU - 604/10
Urethroplasty	8/6/99	Epispadias/exstrophy	DSH - 9380/5
Urethroplasty - female	11/6/99	Bladder exstrophy	BSMMU - unk
Vesicostomy	2/6/99	Caudal defect/ exstrophy	BSMMU - 186/26
Vesicostomy	12/6/99	Neurogenic bladder	DSH - 9539/4
Young Dees	8/6/99	Epispadias/exstrophy	DSH - 9380/5\

Operative Cases

Three of the four pyeloplasties performed were of the appearance of the patient on the left. The patient on the right was an unusual opportunity to demonstrate the "usual" Australian pyeloplasty procedure. The trend away from nephrectomy and late pyeloplasty may be in part due to the paediatric urology training since 1993.


This 10 year old boy had undergone four previous operations for an electrocution injury to his penis. A full-thickness graft was successful, and was in preparation for a subsequent urethroplasty which will probably require the use of buccal mucosa, as his bladder has been previously damaged.

A girl with a cloacal anomaly, with a colostomy, underwent a complete repair, separating her rectum from the common channel to create the urethra and vagina *en bloc.* The final cosmetic result is shown in the far right picture.

Structure of the training program

Retrograde urethrograms in children using IV cannulae
Nuclear medicine studies overutilised
Ultrasounds being done without sufficient pictures
Nuclear medicine being done without pictures being available

Organisation of visit should focus across the institutions

No co-operation between institutions for the education of the masters students

No picture for the nuclear medicine and few available for the US studies.

Elizabeth's role

Anaesthesia in BSMMU

Radiology and NM for the paediatric patients

suction drain using syringe

ureteric catheter being made reusable

making a needle ppoint diathermy

stricture dilatation, nephrostomy insertion, SP catheter insertion - 10FG JMS

Need to dathermy pencils, no need for the plates

No running water in BSMMU

instruments in the theatres

laundry in the theatres

gloves

sutures

supply of the equipment to the theatre

payment for the care of the patients

Urine drainage system

-

What has changed - PUJ obstruction
- subcuticular suturing

What needs to be improved
sterilization of
counting of the gause
training of the scrub team
cordination of the teaching program across the institutions
postoperative monitoring
triage of the patients for care
standard of radiology
facilities for the care of paediatric surgical patients

What should be done in the furure

The first of the two radiographs is one of the many boys who had a retrograde urethrogram in which the urethral pathology was not identified, the hands of the radiographer irradiated and the external sphincter caused to develop spasm. The second image indicates the high quality information usually produced when a micturition study is provided by the Bangladesh radiology services.

The Sponsors

ROMAC provided funds for transport. The Eltham Rotary Club provided logistics and financial support for the transport of drapes, gowns etc., which were provided by the Ballarat Central Linen Service. Ansell International provided sterile gloves for use by Professor Dewan, and Kendall Sherwood Davis and Geck donated sutures material for the operations performed and for the use of the Hospitals after the Paediatric Surgical training. Also, Bard Urological donated catheters and the theatre staff from the Royal Children's Hospital, the Mercy Private Hospital, Sunshine Hospital and The Geelong Hospital, in Victoria, all assisted with the provision of discarded reusable theatre items. Accommodation and living expenses were covered in Bangladesh by generous support from Elizabeth and Russell Brown.

One of the many boys with urethral obstruction and severe renal damage