Cuban Paediatric Urology and Nursing

A Report for 28th May - 11th June 2005

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A project of the Cuban Department of Health,
And
Kind Cuts for Kids Foundation

Overview

The initial visit to Cuba was stimulated by contact between the Cuban Children's Fund of APHEDA, and motivated by the late Tas Bull. Two visits were undertaken in 2003, with a focus on major Paediatric Urology at the William Soler Hospital; particularly patients requiring bladder exstrophy redo surgery. The funding for the first three trips has been provided by a combination of ***Northcote Rotary Club***, the Cuban Children's fund committee, and the generous donations from various companies, orchestrated through the Kind Cuts for Kids Foundation. The third visit was funded by the Kind Cuts for Kids Foundation, the Ministry of Health in Cuba, and by extending a visit funded to present at the Chilean Urology Society annual meeting.

This visit, the forth, was again funded by a combination of the Ministry of Health, who funded the accommodation in Havana, the Urology Society of Cuba supporting the visit to their annual scientific meeting, and the Kind cuts for kids Foundation providing the airfares for the surgeon and nurse. The latter monies came from generous donations following a presentation organized by the ***Preston Rotary Club***. Various companies also supported the visit, including Ansell, Qantas, Bard and Tyco International.

The operative sessions were divided between two Hospitals, the William Soler Hospital and the Juan Manuel Márquez, Hospital Pediátrico Universitario, and again included participation by surgeons from the Havana Central Paediatric Unit.

During the Urology conference at Varadaro, both members of the team participated in contributing during two round table presentations, and a presentation on the development of understanding of the anatomy and pathology of the posterior urethra in males. Several academic interchanges took place between sessions, and at the social gatherings.

The striking feature of this visit was the lack of suture material in both hospitals. Sutures taken on this trip and previous visits were the only "appropriate" sutures available in many instances.

Consultations

The team was met at the airport by Dr Rosario Calveat, Head of the Paediatric Urology Unit at the William Soler Hospital, and Amarilis Santfiel, a Plastic Surgeon. The following day (Sunday), three previous patients were reviewed at Juan Manuel Márquez, Hospital Pediátrico Universitario, but the main purpose of the days work was to resect a bladder rhabdomyoscarcoma from an 18 month old boy. The Oncologist, three surgeons and the Radiologist all were involved in the case conference prior to operation.

The next three days were spent at the William Soler Hospital, consulting and operating, followed by a return to Juan Manuel Márquez for a further three days of consulting and operating. Several consultations occurred regarding difficult cases in different centres throughout the country.

The remainder of the time was spent traveling to, and participating, in the Urology conference.

A total of 25 patients were formally assessed in the either William Soler (17) or Juan Manuel Márquez (8) Hospitals. The patients had all been screened previously, to that the number seen was less than previously, and many were cases for whom surgery had been planned at the end of the November 2004 visit. Again, many of the patients were complex bladder exstrophy cases who had had previous surgery. The complex cases and the surgery will be described under the section on operative procedures. Those patients who were reviewed after previous complex operations had all had a satisfactory outcome.

Seventeen patients went on to have surgery, with all cases being major operations. Only one patient was cancelled, due to a respiratory tract infection; a baby boy with urethral obstruction and an indwelling urethral catheter.

Fidel, a boy who had previously had a bladder exstrophy closure was seen in one of the outpatient sessions in a ***teaching*** room adjacent to the ward at the William Soler Hospital. His penile repair was planned with the next visit.

Consultations (cont'd)

Several cases had been operated on previously, and had an outcome that was considered unsatisfactory; obviously being ideal cases for teaching and collaboration. The principle focus of the surgery was the establishment of continence in bladder exstrophy patients, and managing complex genital anomalies.

Three such cases are described below.

Case Description 1

Carlos, an eight year old boy who had surgery on four previous occasions, having been born with the congenital penile anomaly of hypospadias. The outcome, until now, was that the penile opening was between the scrotum and the glans penis, and most of the penile skin had been lost. Using the Ulaanbaatar principle (a technique developed during a Kind Cuts for Kids Foundation trip to Mongolia), skin was taken from both groins and the right inner, upper arm, resulting in a straight penis with a composite of three full thickness grafts, including the completion of the distal urethra. A second procedure is planned as part of the next visit.

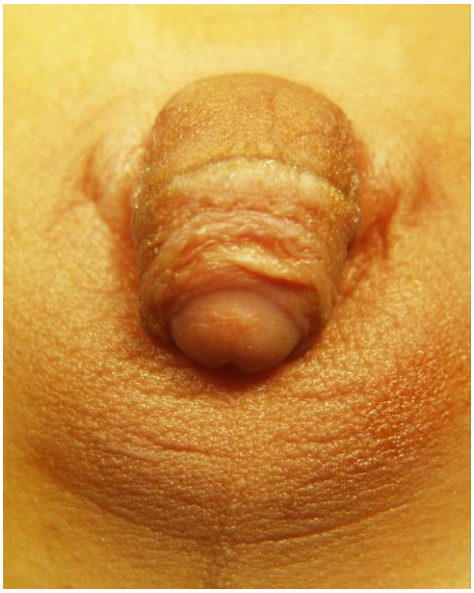
Importantly, the surgical technique used in this case was part of a round table discussion at the National Urology Conference, in Varadaro on 10th June.

Case Description 2

Maria was a 2 year old girl with congenital adrenal hypoplasia. The family had endured the tragedy of having had a previous child with the same anomaly, who had died from the associated biochemical disturbance. Therefore there was a high degree of anxiety about having to have their daughter put through a major surgical procedure.

The procedure was made more interesting by the lack of the availability of a catheter to introduce into the vagina, which in this condition is attached to the urethra, just below the bladder. The operation was also made more challenging by an unusual degree of haemorrhage, which again was due to the specifics of the pathology in this girl.

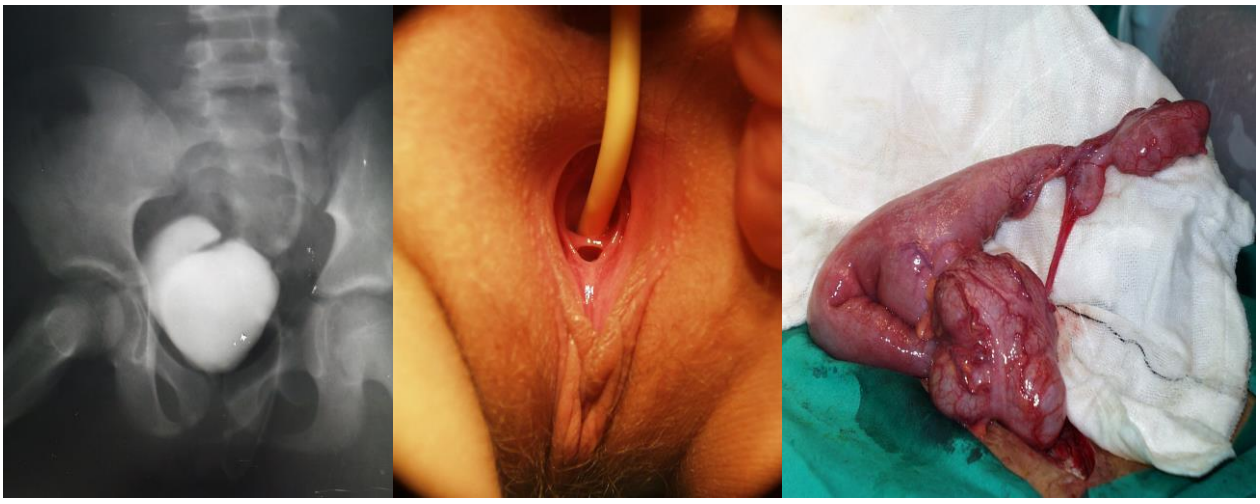
As can be seen from the photos the outcome has been very satisfactory. The operation involved converting the foreskin to the labia minora, and the "male" urethra into the distal vagina and the "wet" mucosa between the urethra and the vagina. Concurrently the clitoris is reduced in size, while preserving its nerve and blood supply



Case Description 3

Ana Beatriz, a pretty and pleasant mannered child with a number of anomalies, the true nature of which had not come to light until the time of the procedure in June. The girl has only one kidney for which she had repeat operations to stoop reflux from the "bladder" to the kidney. She had also undergone a major laparotomy in the past, plus a cystoscopy and laparoscopy. She was known to be incontinent of urine, which had been investigated with a cystograms (below – left), which suggested the partial duplication with the structure being likely to be the bladder.

During a 7 hour operation, Ana Beatriz was identified to have two openings for her genitourinary tract, with urine draining from the posterior (vaginal) catheter (middle picture – below). The urethra was a short blind tract that was probably congenital, as was the connection of the single kidney to the vagina. Continence via the perineum was, therefore, not possible. Thus, the short urethra was incorporated into the remainder of the distal vaginal to make a "normal" vagina, with separation of the organ of urine storage (the upper vagina), being converted to become a bladder which was disconnected from the perineum, then connected to the umbilicus by a Meckel's diverticulum that had been taken from the bowel (a congenital additional piece of bowel – far right picture)



Despite her previous surgery, and the long operation on this occasion, Ana Beatriz is shown singing the theme from "Titanic" – the day after her operation, despite no morphine infusion, and almost oblivious to her three urinary catheters

Operative Surgery Summary

The surgery was divided to between two hospitals with in excess of 70 hours of operating in the 8 days operating. The outpatients and ward cases were seen, interspersed with the operative cases. Seventeen patients had 42 operations, all involving the assistance of the local surgeons, and facilitated by Spanish/English translation by Nancy Gonzalez. The operations, group by procedure, are shown in the table:

Operations performed

Hosp	DOB	Gender	Operation
Unknown	11/1/2003	Male	Abdominal wall resection
Unknown	11/1/2003	Male	Adhesion - division
663758	3/22/1995	Male	Anterior pubic osteotomies
635279	3/11/2000	Female	Bladder neck transection
90	1/1/1991	Male	Bladder neck transection
663723	5/24/1993	Female	Bladder neck transection
546031	12/21/1988	Male	Bladder neck transection
1040184	5/31/1998	Female	Bladder neck plication
50974	4/5/1989	Male	Cantwell Ransley - epispadias repair
122964	7/7/1996	Male	Cantwell Ransley - epispadias repair
58122	7/21/1984	Male	Chordee release - reverse
60200	6/26/1987	Male	Chordee release - reverse
114127	5/8/2003	Female	Clitoroplasty
663723	5/24/1993	Female	Colocystoplasty
Unknown	11/1/2003	Male	Cystectomy - partial
50974	4/5/1989	Male	Cystectomy - residual
1040184	5/31/1998	Female	Cystolithotomy
561015	2/6/1990	Male	Duplay/Dewan to Mitrofanoff
635279	3/11/2000	Female	Ileocaecocystoplasty
629878	6/10/1999	Male	Ileocystoplasty
1040184	5/31/1998	Female	Ileocystoplasty
663723	5/24/1993	Female	Mitrofanoff - Meckel's diverticulum
635279	3/11/2000	Female	Mitrofanoff - appendix
546031	12/21/1988	Male	Mitrofanoff - appendix
90	1/1/1991	Male	Mitrofanoff - appendix
89040	10/15/1996	Male	Penile skin graft
663854	10/1/2001	Male	Proximal urethroplasty
89040	10/15/1996	Male	Skin graft harvest * 3
89040	10/15/1996	Male	Ulaanbataar I c graft
60200	6/26/1987	Male	Urethroplasty - diverticulectomy
58122	7/21/1984	Male	Urethroplasty
60200	6/26/1987	Male	Urethral fistula - distal
561015	2/6/1990	Male	Urethroplasty - diverticulectomy
90	1/1/1991	Male	Urethroplasty - diverticulectomy
58122	7/21/1984	Male	Urethroplasty - proximal
114127	5/8/2003	Female	Vaginoplasty
663723	5/24/1993	Female	Vaginoplasty
Unknown	11/1/2003	Male	Wound revision
58122	7/21/1984	Male	Young-Dees
663758	3/22/1995	Male	Young-Dees
635279	3/11/2000	Female	Young-Dees
561015	2/6/1990	Male	Young-Dees

During the operative session, general anaesthesia plus caudal Bupivicaine was used in 11 of the 17 cases. Two of the caudal anaesthetic injections were performed by Anaesthetists at William Soler Hospital, trained during previous visits. The remainder were performed by Professor Dewan, with a total of 14 junior and senior Anaesthetic staff observing the procedures. Caudal anaesthesia for hypospadias repair was also discussed during the Urology convention.

Surgical Teaching

Surgical teaching was enhanced by the involvement of two different institutions, and participation in the National Urology conference. Surgical teaching was also assisted by the Nancy Gonzalez having Spanish as her first language, facilitating free flow of discussion during the ward rounds and operative sessions. Topics of discussion included:

1. Rescue hypospadias repair (with skin graft)
2. Epispadias repair
3. Urinary catheter management
4. Caudal anaesthesia
5. Intermittent catheterisation
6. Urodynamic evaluation
7. Bladder exstrophy management
8. Bladder neck transection
9. Bowel anastomosis with single layer
10. Mitrofanoff with Meckel's

Participation in the Urology conference enabled lengthy discussion in both a formal and informal context, particularly related to the care of patients with hypospadias, vesicoureteric reflux and urethral obstruction.

Nursing Teaching

Nancy Gonzalez gave continuous input into the understanding of the pre-operative, operative, and postoperative nursing and surgical management, and provided input to suggested changes in management of the theatre complex.

A scrub (instrument) nurse was used at Juan Manuel Marques Hospital. Instrument set up and organizing of sutures were discussed and modified during the visit. Further education would assist. The scout nurse has the same role, unfortunately due to lack of equipment, the response is often "we don't have that". However, the staff often had ideas that overcome the short-fall, an example would be catheter bags *(see next page)*.

Glass syringes were a notable feature of the lack of resources.

An IV set is used to drain urinary catheters. The tubing is into a sodium chloride glass container, with markings up to 500mls. The bottle has a rubber lid, into which a hole is made, through which the tubing is placed. Thus a "catheter bag" is created.

Sharps containers are not used in either of the two hospitals. However, the attempt at introduction of sharp "containers", using plastic drink bottles, proved to be unsuccessful! Reason being, the plastic bottles are taken to be used for personal containers/home use, due to a lack of such of such devices.

Nancy Gonzalez also assisted with solving the problem of the very limited availability of sutures, by helping manage the meager supply. However, 3/0 Vicryl was required for the majority of the cases, but was difficult to obtain, despite the donations taken to Cuba by the visiting team. The less useful nylon, cat gut and silk were the in-house available suture materials.

Systems in place in the operating theatre are not all to the standard that are applied in Australia, often because of the resource limitation. Instruments are soaked in antiseptic solution, the smaller pieces of gauze are not counted, sutures were not systematically placed on the instrument trolley. Only the Juan Manuel Márquez Hospital had nursing staff scrubbed during the procedure, with surgeons taking on the role of instrument technician at William Soler Hospital.

A limitation of nurses in the ward resulted in families playing a major role in the care of the children, to the general advantage of the child, and with great enthusiasm of the parents. Catheter care required medical vigilance, particularly due to the tendency of the tubing to kink because of the "inventive" connections, and poor quality of some of the urine bags.

Surgical Resource Limitations

The William Soler Hospital and the Juan Manuel Márquez Hospital continue to provide most of what is required to given a good standard of care, but within buildings which lacks many of the "fancy" trimmings of an Australian Hospital - even light globes for many of the lights. However, staff developed inventive solutions, such as modifying knives to make instruments with which to perform osteotomies. Unfortunately, inventiveness cannot solve all problems, and ***the lack of suture material is a major cause of adverse surgical outcomes***. Some of the other limitations include:

1. ***Limited range of suture material.***
2. ***Old and poor instruments.***
3. ***Limited supply of ureteric catheters.***
4. ***Limited supply of diathermy tips and handles.***
5. ***The range of surgical drapes is limited.***
6. ***No urodynamic equipment.***
7. ***Repaired, the damaged Paediatric cystoscope.***
8. ***No containers to discard sharp instruments.***
9. ***Stomal devices are not available.***
10. ***Radiology hard copies often not available.***
11. ***No video recording device for fluoroscopy.***
12. ***Images of the ultrasounds are not always available.***
13. ***No nuclear medicine service in the Paediatric Hospitals.***

Much of the equipment that in each of the two hospitals we visited is in need of an upgrade; instruments, theatre tables, lighting, ward facilities and general hospital maintenance included. Notably, instruments are often prepared for use by soaking in antiseptic solution, and glass syringes and reusable needles are often used

The most significant shortage is the lack of appropriate suture material. Even with the resources the visiting team provided, sutures used were often totally inadequate, but the best available from the limited supplies. The usually available materials are obviously part of the reason that the children seen during the visit had not had a successful outcome from their original surgery.

Donated Items

Many people and companies assisted with the equipment for the visit to Cuba including; Bard, Ansell, Tyco, Qantas, Smith-Kline Becham. Recycled items came from theatres at Saint John of God Hospital (Geelong), Geelong Hospital, and Sunshine Hospital. Very few items were taken on this occasion because of difficulties with visa arrangements resulting in little time from the final approval to the commencement of the visit. In future these items should be sent in advance, via London, with which ***Solutions-Plus Consulting*** have agreed to assist. ***Qantas*** was of valuable assistance to the success of the visit, with thanks to the ***CEO Geoff Dixon*** and his staff.

- 480 x pairs Sterile Surgical Gloves
- 50 insulated needle point diathermy tips
- 24 rolls 1" Elastoplast
- 30 x urethral catheters (8FG, 10FG, 12FG)
- 13 disposable diathermy handles
- Hypafix dressings – two boxes
- 10 boxes sutures

30 x 100ml Betadine antiseptic
50 needle point diathermy tips
12 rolls 3" Elastoplast
13 x Cliney catheters
4 reusable diathermy handles

Recommendations for Future Visits

Travel arrangements

Appropriate visas should be organized, with the help of the Cuban Department of Health, well in advance. The approval for the visas for the visiting team has been a major cause of difficult for the last two visits.

Donations

Melbourne could supply a large quality of needed items, which should be sent ahead, via London, to avoid the difficulties in transport of excess baggage. Equipment should be transferred prior to the anticipated dates, to:

Instituto Cubano de amistad con los Pueblos
Hospital William Soler
Ciudad Havana Cuba
Attencion Dra. Rosario Calviac Mendoza

Language

A member of the visiting team should be fluent in Spanish. Team members should also take time to develop some basis knowledge in Spanish. Members of the Cuban team should also preferable have some knowledge of English.

Surgical Topics

With regard to the teaching, research and service the following could be considered.

1. A lecture schedule, which includes the presentation on topics by the Cuban Urologists.
2. Case discussions on more common Paediatric Urology.
3. A symposium for part of the visit.
4. Research papers by Cuban Urologists and trainees.
5. Anorectal anomalies to form part of the surgery sessions.
6. Surgery on more common conditions, such as hypospadias and primary surgery for intersex.
7. A case list is prepared prior to the visit.
8. Fetal hydronephrosis be a significant included subject.

Theatre Management and Equipment

Containers to dispose of sharps should be made available, a count sheet for all items should be developed, the development of which will be part of follow-up visits.