Cuban Paediatric Urology, Nursing and Anaesthesia

A report for 29th January - 12th February 2006

Professor Paddy Dewan, Cris Aiviolitis, Warren Saunders and Charmion Phillips

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

Overview

We arrived in Havana with 23 boxes of donated and recycled equipment, and were met by Dr Luis Orlando Rodriguez, the Director of the William Soler Hospital, and his assistant, Dr Manual Gonzales Fernandes. The 23 boxes, four cases and six people were squeezed into two small cars with inventiveness often seen in Cuba. The three members of the team who had not been to Cuba on a Kind cuts for kids visit previously had jumped in the deep end, and were to continually learn over the coming two weeks what a richly complex and successful visit they were to have.

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 to the Chilean Urology Society annual meeting. The visit in 2005 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 which provided 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. This, the fifth visit, was funded in a similar way to the 2005 trip, with the photographer (Charmion Phillips) providing not only her time, but her own funding.

All clinics and surgery were conducted at the William Soler Hospital, but with the involvement of many surgeons. Those from William Soler included the Head of the Paediatric Urology Unit (Professor Rosario Calveat), Maria del Carmen Castro, Itsel Vela, Amarylis Santfiel, and Guerra-Rodriguez, Marlen, as well as a Plastic Surgeon, General Paediatric Surgeons, Urology trainees, a Paediatric Tumour surgeon and a Paediatric Orthopaedic Surgeon also participated. Also, Professor Emilio Cordie Jackson and Dr Barbara Mora Casaco came from Havana Central Paediatric Hospital, and Dr Fermin Fernandez Diaz, Dr Rodrigues, Carlos and their registrar visited from Juan Manuel Márquez Children's Hospital. Despite the transportation difficulties most of these people were involved in the surgical program on most days. The importance of the training program was highlighted by a Paediatric Urologist from a peripheral centre spending a week at the William Soler Hospital.

Cris is the second Spanish speaking nurse to be involved in Cuban visits, with her role including teaching sterile technique and instrument care. Warren Saunders provided a good opportunity for the Cuban Anesthetic staff to have academic interchange with an international colleague, and to provide extra Anaesthetic manpower.

Consultations

A total of 44 patients were formally assessed, 19 more than on the previous visit. The patients had all been screened previously, so that only highly complex patients were discussed and reviewed between the many surgeons. Some of the patients were only for review of surgery during previous visits, others had surgery planned for 2006, during the 2005 consultation. Again, many of the patients had complex bladder exstrophy pathology, and scars from multiple 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, in the main, a satisfactory outcome. Twenty-six patients went on to have surgery, all of which were major procedures. Several cases had been operated on previously by Cuban surgeons, and had an outcome that was considered unsatisfactory; obviously being ideal cases for teaching and collaboration. The principle focus of the surgical session was the establishment of continence in bladder exstrophy patients, and managing complex genital anomalies.

Four cases are described in detail, below:

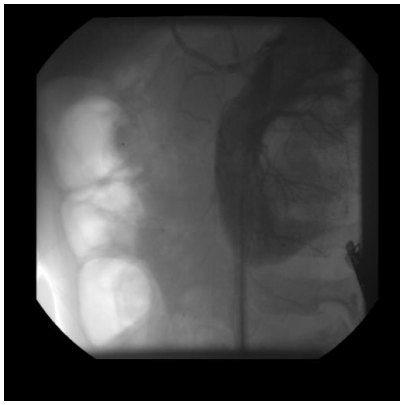
Case Description 1

Carlos, a nine year old boy who had surgery on five previous occasions, had been born with the congenital penile anomaly of hypospadias. His surgery in 2005 is shown in the first two pictures, which was to establish the foundation for completion of his reconstruction with a bladder mucosal graft urethroplasty, using the Ulaanbaatar principle (a technique developed during a Kind Cuts for Kids Foundation trip to Mongolia). At his initial rescue operation, 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 completes his reconstruction, using a bladder mucosal graft and rotation flaps (not shown).

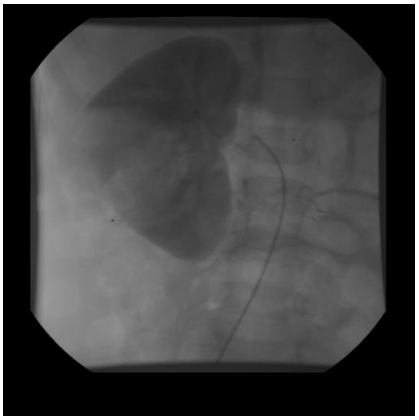
Consultations (cont'd)

Case Description 2

Manuel is a 4.5 year old boy who had previously had a Wilms tumour removed, with the necessary loss of his left kidney. He had developed a second tumour in his remaining kidney that had responded well to chemotherapy. An arteriogram showed the tumour to be in the posterior, inferior and lateral portion of the kidney (see below). Surgery was performed that completely excised the tumour, and although complicated by initial clot obstruction of the ureter, his recovery allowed him to go home within a week. His renal function was normal on discharge.

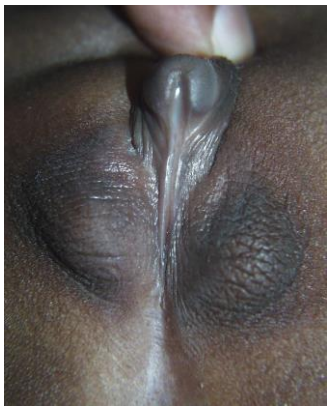


Manuel had an ateriogram, the pale patch of which is the tumour in his remaining kidney.



Case Description 3

Daniella, a four year old girl was born with intersex, required surgery to normalize her appearance, and to connect her vagina to her perineum, rather than to the back of the urethra.



Consultations (cont'd)

Case Description 4

Yanebi, is a 13 year old girl who previously had two major operations, including partial osteotomies. Her bladder was widely open (below - top left) resulting in her being constantly wet with urine, and she had an offensive body odor. At operation her left ureteric orifice was found to be obstructed, further complicating the complex surgery. The procedure involved fracturing the pelvis in four places, the incisions for which are shown below (top right). The bladder was separated from the perineum and enlarged with bowel, after which a continent stoma and umbilicus were formed. Her urine from the right kidney was diverted through the left ureter and her perineum was made much more normal. The final outcome was a well girl post operatively who will have catheters in her bladder for three weeks (below - bottom left) and plaster for six weeks (below - bottom right). Yanebi can look forward to a life that requires artificial emptying of her bladder, but with the prospect of being continent.

Operative Surgery

All surgery was performed at the William Soler Hospital in Havana, with 120 hours in 11 days, consisting of 29 inductions on 26 patients. Twenty-six patients had 62 operations, all involving the assistance of the local surgeons, and facilitated by Spanish/English translation by Cris Aiviolitis, Amarylis, other Cuban surgeons, and the improving Spanish skills of Professor Dewan. The following list gives the patient hospital number with the operations performed per patient. The table shows the operations by patient record number; most patients had more than one operation under the same Anaesthetic, and three children had two different Anaesthetic events (shown in bold italics).

666084	Osteotomies - * 4 Ileocaecocystoplasty Transureteroureterostomy Mitrofanoff - appendix + skin Bladder neck transection Introitoplasty
609346	Hypospadias – redo
585679	Vaginal dilatation
559160	Ileocaecocystoplasty Omphaloplasty c appendix Mitrofanoff – appendix
671518	Anorectoplasty - redo Urethral diverticulum - excision ***Suprapubic insertion***
671467	Urethroplasty - bladder mucosal Vesicotomy
652248	Nephrectomy – partial ***Laparotomy***
643537	Transureteroureterostomy Ureterocystoplasty
663758	Urodynamics Colocystoplasty
668679	Vesicocutaneous fistula closure Cystolithotomy
671537	Urethroplasty - bladder mucosal Vesicotomy
666835	***Cystoscopy*** ***Urodynamics*** Bladder neck transection Mitrofanoff – appendix Ileocaecocystoplasty
664255	Cystoscopy + Fulguration
655033	Cystoscopy Urodynamics
671507	Clitoroplasty Vaginoplasty
663747	Young-Dees
651672	Hernia Inguinal – Left Urethral fistula closure
615078	Vesicolithotomy
561015	Urodynamics Bladder neck transection
89040	Urethroplasty - bladder mucosal Penile z plasty Vesicotomy Wound revision
514390	Nephrectomy – Left Ureteric meatoplasty Bladder neck transection Ureterocystoplasty – Left Mitrofanoff - right residual ureter
652787	Vesicocutaneous fistula closure Urethroplasty – perineal
58122	Mitrofanoff – appendix Ileocaecocystoplasty
635279	Cystoscopy via Mitrofanoff Urodynamics Bladder neck transection
598016	Anorectoplasty – redo
657962	Cantwell Ransley - epispadias repair

Operative Surgery (cont'd)

Anorectoplasty	2
Bladder neck transection	5
Mitrofanoff	5
Cystoscopy	4
Ileocaecocystoplasty	4
Transureteroureterostomy	2
Wound revision	many

Clitoroplasty, Cystolithotomy, Fulguration – COPUM, Herniotomy, Introitoplasty, Laparotomy, Wilms heminephrectomy, Nephrectomy, Ureterocystoplasty, Ureteric meatoplasty, Suprapubic insertion, Osteotomy - Bilateral posterior, Osteotomy - Bilateral anterior, Hypospadias redo, Urethroplasty – perineal, Vesicolithotomy, Vaginal dilatation, Urethral diverticulum – excision, Omphaloplasty - appendix, Vaginoplasty, Young Dees bladder neck. 1

Lenier is representative of the adolescence who have had a series of major operations, with out having achieved an adequate outcome. The combination of Australian/Cuban teamwork and additional equipment has produced continence and improved self-esteem for this boy

Surgical Teaching

Surgical teaching was enhanced by the involvement of surgeons from four different institutions, several nurses and a number of Anaesthetists. Surgical topics of discussion included:

1. Wilms Heminephrectomy
2. Rescue hypospadias repair, including bladder and skin graft
3. Redo anorectoplasty
4. Epispadias repair
5. Urinary catheter management
6. Transureteroureterostomy - extraperitoneal
7. Transureteroureterostomy – pelvic brim
8. Bladder neck transection
9. Bladder exstrophy management
10. Bladder neck transection
11. Bowel anastomosis with single layer

Nursing Teaching

Cris Aiviolitis provided continued input into the training of both the doctors and the nursing staff, in the processes used in Australia to improve sterility and safety. Certainly, there are a number of steps that need improvement, including counting of items on and off the operative field, sterility, instrument care and the handling of sharp objects during surgery. Still a scrub nurse is not used at the William Soler Hospital, and there appears to be somewhat rigid boundaries between the tasks performed by the staff. Cris added to the input from Nancy last year, but further input is require to developed understanding of the processes and to facilitate change that would be "no cost" and an improvement.

Glass syringes continue to be notable feature of the lack of resources, and the handling of sharps has still not advances.

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. ***Old and poor instruments.***
2. ***Limited supply of ureteric catheters.***
3. ***Limited supply of diathermy tips and handles.***
4. ***Poor surgical drapes***
5. ***No adequate Paediatric cystoscope.***
6. ***No containers to discard sharp instruments.***
7. ***Stomal devices are not available.***
8. ***Radiology hard copies often not available.***
9. ***No video recording device for fluoroscopy.***
10. ***Images of the ultrasounds are not always available.***
11. ***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

Donations to Cuba are an important part of the project, and 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. A large number of items were taken with over 200kg being carried with the assistance of ***Qantas*** via a commitment from the ***CEO Geoff Dixon*** and with the assistance of his staff. A further $100,000 of laparoscopic equipment is to be transferred with the assistance of ***Solutions-Plus Consulting.*** More is need to be done to ensure the welfare of the children having surgery in Cuba, and the types of items that are useful are indiated in the list below.

1 pulse oximeter - $15,000
1 carton unsterile gloves
3 cartons urine drainage bags
2 boxes cliney malecot catheters
10 glide wires
20 sheath dilators
1 box size 15 blades
1 carton sutures
30 feeding tubes
2 boxes gloves
1 carton gowns
3 cartons betadine
1 carton syringes
10 ureteric catheters
2 cartons face masks
1 box size 10 blades
20 hypafix dressings
50 urethral catheters

One of the main difficulties for surgery on children in Cuba is the limitation of surtures available.

Recommendations for Future Visits

These recommendations are largely unchanged from the previous visits

Travel arrangements

The appropriate Visa should be organized in advance by the Cuban Health Department and the Cuban Consultate, and be provided by the Cuban Governement.

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 Calviat 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.