Paediatric Surgery Outreach

to

Ghana

Dr Paddy Dewan

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Executive Summary

Ghana surgeons have pervously been involved in Kind Cuts for Kids visits to two other countries. Patrick Maison, a budding Paediatric Urologist was funded from the Red Cross Hopsital in Cape Town to attend a workshop in Bloomfontein in 2017. The coordinator of this visit, Dr Boateng Namako, was attached to the Red Cross Hospital in 2016 during a further South African workshop, following which he went to Vietnam in the same year.

On October 4th 2016, the Australian Ambassadors wife and Mr Layton Pike hosted an evening in Hanoi, Vietnam, during which Dr Dewan and Mr Pike presented Dr Nimako with a cystoscope for his unit in Kumasi,

Ghana is a West African Country with a population of 25 million. The capital, Accra is located on the southern coast, and Kumasi, the biggest city, with a population of 2.6 million, is located 280 kilometers north of the coast and 500 kilometers north of the equator. Kumasi was the centre visited during this mission, and is the town in which both Patrick Maison and Boateng Nimako work.

The major hospital in the region is the ***Komfo Anokye Teaching Hospital*** (http://www.kathhsp.org/), a 1000 bed hospital that has a Paediatric Surgical ward capacity of 20 beds, into which are squeezed 48 patients. The visit to the Paediatric Surgical Department was undertaken as a hospital Board sanctioned visit that was coordinated by Dr Nimako. During the trip 55 patients were seen by the visiting surgeon; 29 patients had an anaesthetic, (4 of whom had a second anaesthetic), during which 71 procedures were performed.

The staffing, infrastructure, the ward, the theatres, the teaching and the nature of the clinic work and lessons learnt while treating the children form the body of this report.

Many people should feel they have been part of the success of the visit to Ghana, including donors, the Kind Cuts for Kids Board and support people, and also all the staff, parents, patients and management for the Komfo Anokye Teaching Hospital.

Hospital Infrastructure

The 1000 bed hospital may be in name only, as the images of the Paedaitric Surgical ward show the additional numbers included in a confined space, despite which there is a one year wait for some surgery.


There are a number of surgery wards and operating theatre areas, one of which is assigned to the three Paediatric surgeons currently employed by the hospital. The photos below show the emergency building and the area that houses the surgical patients.


Patients have to contribute to the cost of their own care, and there were noted deficiencies in equipment available, including of fine suture material, a central oxygen supply, problems with the sterilizing processes and infection control measures in an over crowded ward. None of these comments are criticisims, but statements of reality that reflect the appropriateness of assistance to Ghana with healthcare for children. Below are incomplete woman's and children's section (background) and the accommodation area for families with people in hospital (right). The families sleep on cardboard on concrete!


Theatre

The theatre complex used for the 29 operative patients was able to handle two cases concurrently with a dedicated team of nurses assigned to the Paediatric surgical list. The three surgeons and the three surgical Fellows participated in the surgery at various stages, while still needing to service a busy emergency surgical load. The bottled oxygen and lack of disposable equipement and turn around for sterilising instruments would appropriately be addressed as part of ongoing assistance. The diathermy machine and theatre are shown:


Emergency supplies of water need to be preserved, donated sutures and catheters were a necessary part of the armamanterium of the visiting team, and drying of Paediatric endoscopic equipment was highlighted, with a lack of facilities to achieve the desired standard for cystoscope care was noted, but a solution of using a syringe and air deployed.



Noise pollution and poor turnaround times, like in most theatre complexes, were issues that were addressed by recruiting a “church” like patient-centric attitude. Note the “Kind Cuts” hats.


Paediatric Surgery Department

The Paediatric Surgery department is part of the division of surgery, therefore partaking in regular morning meeting. The head of the unit is Abiboye Yifiehehj, and the two other surgeons are Michael Amoah and Boateng Nimako. There are three senior trainees Robert Sagoe, Anthony Davor and Fareda Galley and a number of junior members of staff. A formal ward round is conducted each morning and there are theatre sessions allocated most days, with several emergency cases being serviced, including several neonatal cases. The unit is supported by medical staff with an interest in paediatric nephrology, paediatric radiology and Paediatric anaesthesia, although there is not subspecialisation for the latter two services.

The clinical load of the department is huge, consistent with the large regional Paediatric population, the relatively late presentation of cases and the limited number of Paediatric surgical services in the country. The staff work late, they work hard and with clinical approaches that are in keeping with modern Paediatric surgical practice, albiet with a lack of laparoscopy, access to CT scanning and MRI, limited surgical resources. The Kumasi Teaching Hospital is well positioned to enable medical staff to have enhanced history and examination teaching that will minimise the need for technology driven medicine.

Lessons taught

1. COPUM – the new terminology for congenital urethral obstruction.
2. Minimal contact subcuticular suturing.
3. Nixon Anoplasty flaps for anorectoplasty.
4. Considering that careful dissection enables the tissue to give direction to the surgeon.
5. Pelvic osteotomies for bladder exstrophy closure.
6. Guide-wire dilatation of strictures and vesciostomy.
7. Vesicoscopy to view the upper urethra.
8. Ureterocystoplasty for bladder augmentation.
9. Staged hypospadias surgery – the Kind cuts for kids developed Ulaan Batoor procedure.
10. Taking “the history of the investigation” to enhance interpretation of investigations.
11. The use of air as a contrast for radiological studies of the gastrointestinal tract.
12. Urinary catheter insertion over a guide-wire.
13. Efficient inguinal hernia repair.
14. Management of ultra-thin inguinal hernial sac.
15. The need for leg strapping after genitoplasty and anoplasty.
16. Safe patient centric urethral catheter strapping.

Teaching

Much of the teaching was during the surgery and ward rounds, and was focused on good patient communication, clever use of limited resources and finness in surgical technique, with emphasis also on the need to consider the specific needs of the individual patient in trying to first understand, then resolve the clinical problem.

Three meetings were attended, one in the Radiology Department and two in the division of surgery. The first meeting was a handover of the weekend cases on the first Monday, and included discussion of the adverse outcomes because of limited equipment, some of which could be solved by donors who would only have to be minimally generous. Also, the division of surgery officially welcomed the Kind Cuts for Kids visit.

The Radiology Department (photo below - left) hosted a teaching session for all their medical staff. The lecture, entitled, ***Urine infections, Vesicoureteric reflux and Pelviureteric Junction Obstruction*** discussed enabling limited resources to be maximally utilized through enhancing the input of the clinical information into the investigation process by close collaboration between radiologists and surgeons, while regarding each test as having multiple datapoints, each on a spectrum that are collected with the mindset of putting together the jigsaw puzzle picture that makes up the understanding of the patient's disease.



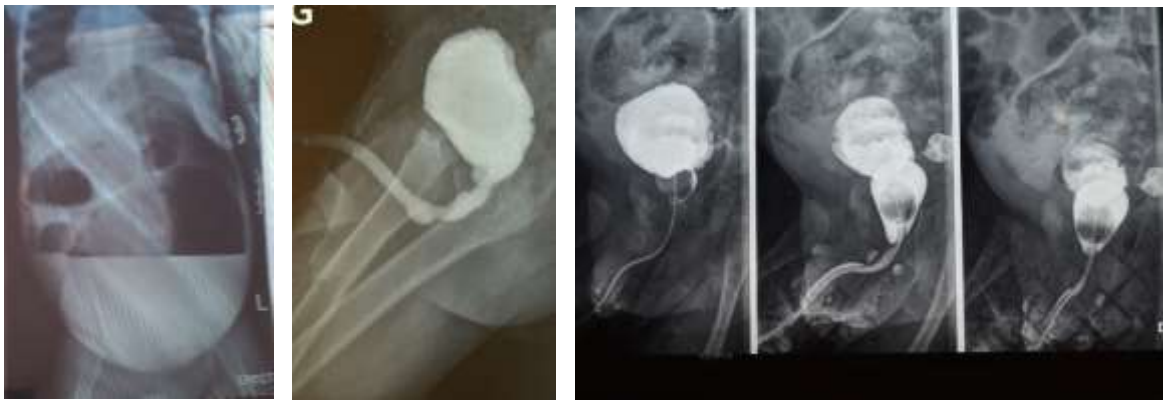
The second lecture (middle picture) was to the division of surgery, entitled ***Renal Tract Duplication and Ureterocystoplasty***, encouraged clinicians to regard each patient as an individual case, and that much of the information about them comes from the history and examination, but also from the clinical events that occur during investigation. For instance, did the child with a possibly intermittently obstructed kidney have pain during the investigation. The specifics of some of the operative techniques were also presented, with discussion leading to the topic of the "therapeutic value of death", meaning the role of care rather than futile treatment.

The teaching was also to students attahed to the Paediatric surgical unit, including during time allocated to visiting theatre (above - far right picture).

Clinical cases

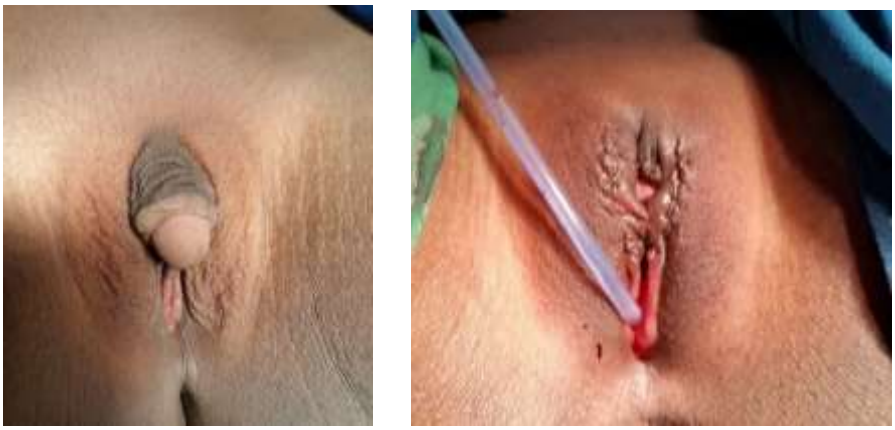
In all, 55 patients were treated, the hightlighted diagnoses being the cases of particular note in the teaching element of the program, although all surgical cases were used to demonstrate surgical decision making and technical finness.

Intersex	***5***	***Inguinal Hernia***	***4***
Fungal perineal disaster	1	Hirschsprung	2
Bladder exstrophy/epispadias	***5***	Intussusception	1
Cloacal anomaly	***4***	Sacrococcygeal teratoma	1
Urethral fistula	2	Impaled on metal rod	1
Hypospadias	4	Gut obstruction	1
Anorectal anomaly	4	Liver abscess	1
Appendicitis	4	Splenic rupture	1
Caustic Oe burns	3	Urethral polyp	1
COPUM	***4***	Neuropathic bladder	1



Radiology from a series of cases – left to right: huge distended colon in a young boy with a bowel obstruction; a cystogram from a boy with wetting due to a neuropathic bladder; three pictures from a boy with posterior urethral obstruction due to a COPUM.

The images below are from a GIRL who had a genitoplasty; SHE was changed from looking like a boy to look like a GIRL. SHE is a girl who went to school as a boy. SHE went home a very happy GIRL.



Operative Surgery

Some of the dates of birth have been recorded as the 1st January, due to lack of easy access to the definitive date of birth, which was often not know by the family. There are four patients who have two dates of surgery, three because the first anaesthetic was part of the assessment process. One patient had a wound debridement to limit the impact of an inadvertent infection.

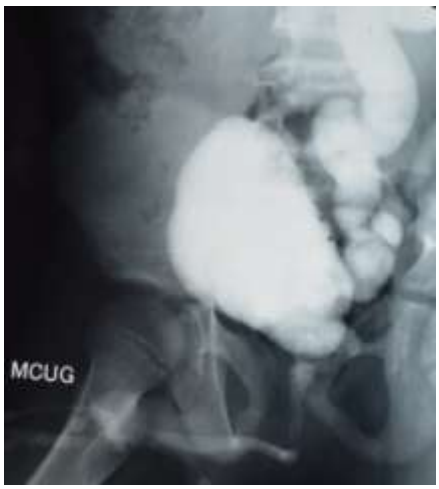
African Database				
Gender	**DOB**	**Date**	**Pathology**	**Operation**
Male	01-Jan-08	17-Apr-18	hypospadias cripple	Skin graft urethroplasty-UB I
Male	"	"	"	skin graft - from forearm
Male	"	26-Apr-18	"	debridement
Male	01-Jan-10	25-Apr-18	COPUM	Nephrectomy
Male	"	"	"	Ureterocystoplasty
Male	29-Apr-14	17-Apr-18	bladder exstrophy	Cystoscopy
Male	"	"	"	EUA
Male	"	20-Apr-18	"	Phalloplasty - epispadias
Male	"	"	"	Urethroplasty - epispadias
Male	10-Jul-16	23-Apr-18	epispadias	Epispadias repair
Male	18-May-12	19-Apr-18	bladder exstrophy	EUA
Male	"	"	"	Cystoscopy
Male	01-Jan-15	26-Apr-18	Inguinal hernia - right	Herniotomy - inguinal right
Male	01-Jul-15	18-Apr-18	Urethral stricture following PSARP	Urethroscopy
Male	"	"	"	Dilatation of vesicostomy
male	"	"	"	Insertion of SP catheter G-W
Male	"	24-Apr-18	"	vesicoscopy
Male	"	"	"	urethroscopy
Male	01-Jan-17	25-Apr-18	Anorectal anomaly	Pena
Male	02-Feb-18	20-Apr-18	COPUM	Fulguration COPUM
Female	11-Oct-17	18-Apr-18	cloacal exstrophy	EUA
Female	"	"	"	Cystoscopy
Female	07-Sep-09	20-Apr-18	DSD	Clitoroplasty
Female	"	"	"	Perinoplasty
Male	14-Sep-15	18-Apr-18	DSD-male	Hypospadias - UB I
Male	12-Sep-16	17-Apr-18	Distal penile hypospadias-midline meatus	MAGPI
Male	"	"	"	circumcision redo
Male	"	"	"	Urethroplasty - Duplay
Male	01-Jan-13	26-Apr-18	UDT R; LIH	Herniotomy - inguinal right
Male	"	"	"	Orchidopexy - right
Male	"	"	"	Orchidopexy - right
Female	02-Apr-06	17-Apr-18	perianal fungal disaster	EUA - anal sounding
Female	01-Jan-07	17-Apr-18	Rectal stone	Removal of rectal stone
Female	"	"	obstructed urethra	Rectal episiotomy
Female	"	"	rectovaginal fistula	laparotomy
Female	"	"	Vaginal stone	Abdominal vaginolithotomy
Female	21-Nov-11	19-Apr-18	cloacal exstrophy	cystoscopy
Female	"	"	"	vaginoscopy

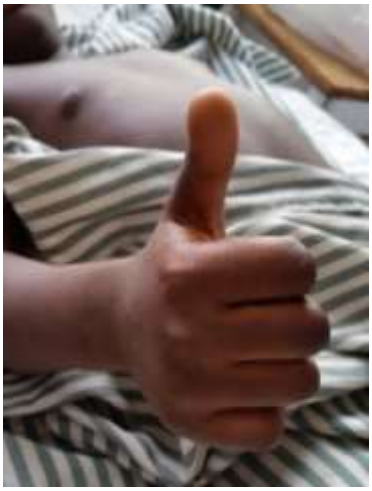
African Database				
Gender	**DOB**	**Date**	**Pathology**	**Operation**
Male	06-Jun-13	23-Apr-18	Undescended testes - bilateral	Orchidopexy - left
Male	"	"	"	Orchidopexy - right
Male	"	"	"	Herniotomy - inguinal left
Male	"	"	"	Herniotomy - inguinal right
Male	03-Oct-16	18-Apr-18	DSD - male	Hypospadias - UB I
Male	01-Jan-17	24-Apr-18	COPUM	Cystoscopy
Male	"	"	COPUM	COPUM fulguration
Male	31-Jul-17	23-Apr-18	Anorectal anomaly	Pena
Male	"	"	"	Rectoprostatic fistula close
Male	25-Feb-16	24-Apr-18	Anorectal anomaly	Repair anorectal fistula
Male	23-Oct-17	24-Apr-18	Hypospadias – severe	Hypospadias - UB I
Female	25-Aug-09	23-Apr-18	Cloacal anomaly	EUA
Female	"	"	"	cystoscopy
Female	"	"	"	Vaginoscopy
Female	25-Aug-09	25-Apr-18	Cloacal anomaly	Osteotomy Anterior left
Female	"	"	"	Osteotomy Anterior right
Female	25-Aug-09	25-Apr-18	"	Osteotomy Posterior left
Female	"	"	"	Osteotomy Posterior right
Female	"	"	"	Vaginal opening widened
Female	"	"	"	Omphaloplasty
Female	"	"	"	urethroplasty
Female	"	"	"	Wound revision
Male	02-Sep-15	19-Apr-18	bladder exstrophy	Bladder exstrophy closure
Male	"	"	"	omphaloplasty
Male	"	"	"	Osteotomy Anterior left
Male	"	"	"	Osteotomy Anterior right
Male	"	"	"	Osteotomy Posterior left
Male	"	"	"	Osteotomy Posterior right
Male	"	"	"	urethroplasty - epi
Male	01-Jan-13	18-Apr-18	Urethral polyp	Cystoscopy
Male	"	"	"	Polypectomy
Male	14-May-11	26-Apr-18	Hernia - right inguinal	Herniotomy - inguinal right
Male	11-Oct-16	17-Apr-18	urethrocutaneous fistula	Urethral fistula closure

Operative Surgery Examples

Case 1

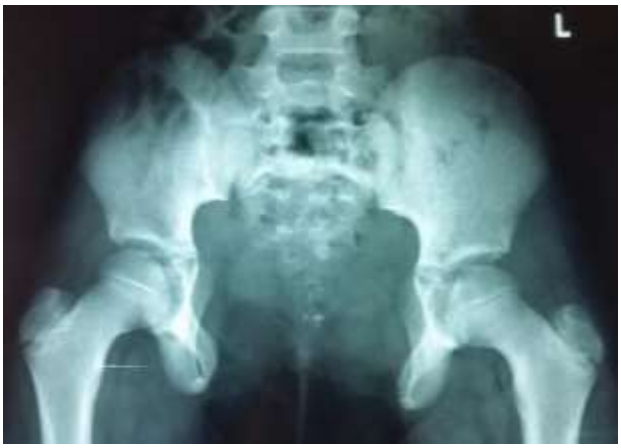
With no function in his left kidney, this boy with congenital urethral obstruction (COPUM) had recurrent infection because of the redundant left, refluxing system and a relatively small bladder that put his remaining kidney at risk. His left kidney was removed and the ureter was left connected to the bladder, opened longitudinally and sutured into the bladder to form a larger receptacle that will empty, help prevent infection and ensure a better outlook for the remaining kidney. This was the FIRST ureterocystoplasty in Ghana. ***The ring retractor was a donation from Kind Cuts for Kids.***






Case 2

This delightful little girl was born with the wide open pelvis shown in the xray was born with her bowel and bladder wide open at the lower part of her abdomen – cloacal exstrophy – a rare abnormality that produces a profound cosmetic problem, not to mention bowel and bladder incontinence. By operating and demonstrating the surgery of pelvic osteotomies, the girl has a much enhanced chance of being normal. Noting the excellent initial outcome for the primary surgery.

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Special thanks to the nursing staff in theatre Juliana P Acheampong, Dorcas Otuo Acheampong, Sena Kumordzi, Ruth Cann, Freda Saka, Diana Yeboah for their hard work, and thanks to all the staff who showed such dedication to the children, and friendship to the Kind Cuts for Kids.