A project of Kind Cuts for Kids,

Supported by

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HOSPITAL CENTRAL DE MAPUTO
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Professor Paddy Dewan

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Introduction

The visit to Mozambique was arranged following the September 2022 mission to South Africa, during which Dr Amâncio Oliveira met with Professor Dewan to discuss the lack of development of the specialty of Paediatric Urology in his country. Subsequently an internet meeting with Mozambique Paediatric Surgeons and the Maputo Urology team confirmed the appropriate case material for potential quality improvement in the service provided to Mozambique children, the equipment needed to be provided by the visiting team; thus, a trip to Mozambique was scheduled, to be based at the Central Hospital in Mozambique's capital.

Mozambique ***(Moçambique)***, is the 35th largest country in the World, divided into two topographical regions by the Zambezi River. It is the only country in the world with a modern firearm on its flag, which reflects the struggle for independence, gained from the Portuguese in 1975, who had initially settled in 1498, after the arrival of Vasco de Gama. A civil war wracked the country from 1977 to 1992.

The country is located on the East side of Africa, across the water from Madagascar. Almost all the population is black African; 56% are Christian, 26% traditional faiths and 17% are Moslem, with a total population of 32 million.

Maputo, previously named ***Lourenço Marques***, became the capital in 1898, with the name change in 1976. The port city, with a population of around 2 million, is located 120 Km from the South African Border in the southern part of Mozambique.

There are three medical schools in Mozambique, the first founded in 1962, one of which is located close to the Maputo Central Hospital, in which we worked. The hospital has existed for over 100 years and employs 4000 people, with 1500 beds, including all major medical departments, which are located in low level buildings spread over a large area, much of which is in a state of some disrepair.

Paediatric Surgery

The Paediatric Surgery is managed from the Paediatric Centre and is staffed by three surgeons and four residents. The case load is enormous and the resources to manage the cases relatively limited, but there are many improvements that are able to realised. Most notably, ***the department does not have a cystoscope***, which is an essential piece of equipment for any service wishing to care for children with urological and anorectal anomaly problems.

The Paediatric surgical ward is in the same building as Paediatric Medicine, with the surgical wing consisting of a moderate number of rooms all of which are overfilled with beds to accommodate the large number of patients, a significant proportion of whom have had burn injuries. The outpatient clinic was conducted in the treatment room of the ward.



Above are photos of the Paediatric surgery corridor with waiting outpatients, the treatment room in which they were reviewed, and one of the inpatient rooms.

The operating theatres are on the third floor in a block separate from the Paediatric Surgical ward, to where the patients are transferred by ambulance on return, but often taken to theatre by walking, or being carried by their parents, depending on the clinical state and age of the patient.

The above photo shows part of the journey from the Paediatric surgery ward to both the Radiology Department and the Emergency theatre.

Paediatric Surgery

Paediatric surgery is usually conducted on two days of the week in the theatre shown below, with the standard of the equipment being evident in the first photo and the relative proportion of the room shown in the second (as is the number of staff who had joined in to learn from and assist with the care of the patients).

Most instruments were of lower quality than usually available in Australia, and were sourced from outside the theatre complex, provided in metal boxes wrapped with paper. Drapes and gown availability was also limited by separation of the central sterile department.

When cystoscopy was performed the camera and light-lead were cleaned with alcohol, as is the practice in many similar countries, instruments are soaked in Cidex, a practice that is considered unsafe in Australia and has not been used for decades. However, best practice of wound preparation with an aqueous iodine solution is notable happening.

Sutures, particularly fine sutures were available, except for out-of-date sutures, which are now being used. And, laparoscopic equipment had to be borrowed for the case for which is was essential. Diathermy handles (the instrument used for the electrical cutting if tissue), which are single use in Australia, are reused until the mechanism fails; and the electrical tip used is broad and long, making it unsafe – in the "equipment provided" (below) list it is noted that 73 of the appropriate "needle-point" tips were provided.

Equipment taken to Mozambique

Prior to the trip to Mozambique, the need for both disposable and reusable equipment for the complex surgery was assessed, noting the greatest need was for suture material and catheters. The photos show some of equipment used, and materials handed over at the end of the mission.

Donated items:

Sutures - fine	–	378 pieces
Sutures – heavy	–	456 pieces
Silicone catheters	–	38
Sheath dilators	–	48
Scalpal blades	–	2 boxes
Feeding tubes	–	100
Elastoplast/tape	–	3 boxes
Steristrips	–	1 box
Glidewires	–	9
Needle point diathermy tips	–	73
Surgical masks	–	1 box
Surgical gloves	–	1 box
Bipolar diathermy leads + forceps	–	3
Mono diathermy kits	–	5
Prolene Mesh	–	3
Laryngeal masks	–	16
Hypafix dressing	–	40
Yanker suckers	–	3
Sponge holders	–	2
Laryngeal masks	–	16
Lonestar ring retractor	–	1
Access and nephrostomy kits	–	2

Used and returned:

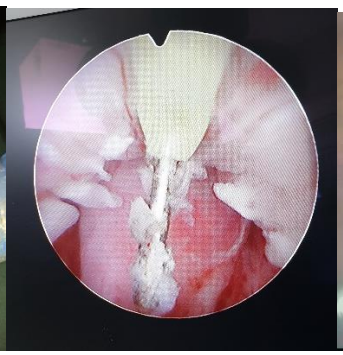
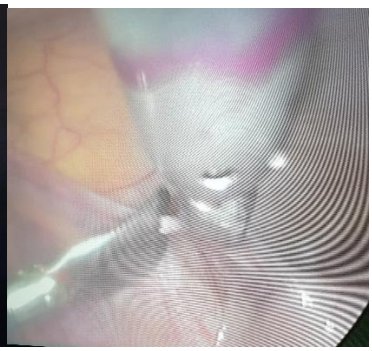
Forceps	–	2
One-piece cystoscopes	–	2
Resectoscope and telescopes	–	1
Scissors – various	–	14
Needle holders – various	–	6
Retractors – various	–	10
Endoscopic instruments	–	6
Clamps – various	–	14
Forceps – various	–	9
Fine suckers	–	3
Long handle scalpel	–	1

Points of Learning

Numerous points were made during surgery, the clinic consultations, during ward rounds, impromptu lectures, and surgery. Most, but not all are listed below; the underlined lessons are illustrated photographically at the bottom of the page

1. Use of needle point diathermy tips
2. Plastering of bladder exstrophy patients after osteotomies.
3. Subcuticular suture.
4. Usability of out-of-date sutures.
5. Disadvantage of latex catheters.
6. ***Catheter over guidewire insertion of indwelling catheter.***
7. Redo bladder exstrophy technique.
8. Anterior osteotomy.
9. Epispadias repair.
10. Management of a rectourethral fistula in anorectoplasty.
11. The jack-knife position for anorectoplasty.
12. Using the diathermy for muscle stimulation during the Pena procedure.
13. Investigation and surgery for cloacal anomalies.
14. Vesicostomy formation.
15. ***Insertion of nephrostomy tube.***
16. Anatomy of posterior urethra obstruction (COPUM).
17. Initial management of COPUM.
18. ***Fulguration of COPUM.***
19. Duplex urinary pathology and surgery.
20. Wilms tumour management.
21. Surgery of duplex urethra.
22. Two-stage repair of hypospadias.
23. Management of bladder spasm.
24. Anderson-Hynes pyeloplasty.
25. Surgery for urethral polyp.
26. ***Laparoscopic Fowler-Stephens orchidopexy.***
27. Inguinal herniotomy crease incision.
28. Catheter insertion and strapping.
29. Infection reduction with subcuticular sutures.
30. Posterior urethroplasty via Pena approach.
31. Antegrade cannulation of the urethra.
32. Catheter strapping for ease of removal (see Case Study 1)



Clinical Care

A total of 71 patients were reviewed, with one girl being seen on two occasions because she presented with a post operative complication of a previous operation. Many of the patients (14) had a range of diagnoses of a general surgical nature, which were discussed for comparison with the Australian treatment perspective, including the role of subcuticular sutures. The largest group were boys with the penile anomaly of hypospadias, and the remainder were complex urological cases, cloacal anomalies and other imperforate anus that required either primary or redo surgery.

Diagnoses included:

COPUM	–	5
Cloaca/exstrophy	–	3
Bladder exstrophy/epispadias	–	3
Burn/Abscess	–	5
Pelviureteric junction obstruction	–	2
Hypospadias	–	18
Hernia/hydrocele	–	3
Hydronephrosis	–	3
Anorectal anomaly	–	6
General - other	–	14
Disorder of sexual differentiation	–	2
Urology – other	–	8

53 operations were performed on 20 patients, who had a total of 22 anaesthetics; one patient had a cystoscopy, then a major cloacal repair; another had a nephrostomy that proved the adequate function of the kidney that led to a pyeloplasty.

Operations included:

Cystoscopy/urethroscopy	–	8
Bladder Exstrophy closure	–	1
Osteotomy	–	4
Omphaloplasty	–	1
Vaginoplasty	–	1
Laparoscopy/laparotomy	–	3
Vesicostomy closure/formation	–	4
COPUM/Cobb's Mx	–	6
Urethral stricture Mx	–	4
Pena cloaca/anorectoplasty	–	9
Hernia repair	–	3
Excision of duplex urethra	–	1
Epispadias repair	–	1
Release of dorsal chordee	–	1
Fowler Stephens Stage I orchidopexy	–	1
Nephrostomy/Pyeloplasty	–	2
Other	–	3

Clinical Care

Case Study # 1

A 10 year old girl, who had born with bladder exstrophy, the condition that Kind Cuts for kids has treated dozens of children in multiple countries, demonstrates a number of notable features. One, the difficulty of the surgery, which in 2015, since when her bladder has prolapsed position (Fig 1). Two, her tolerance of incontinent, deformed existence. Three, her stoic state – no pain after a 5 hour operation that broke her pelvis in 4 places

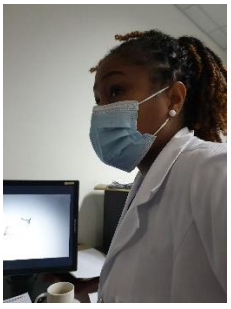





Case Study # 2

A baby with two obstructed kidneys had a nephrostomy, then 5 dyas later a reparative pyeloplasty, and was well enough to go home the following day, depsite the 2 hour 2nd operation. The first had proven the kidney was worth saving, when nuclear medicine function tests are not available.

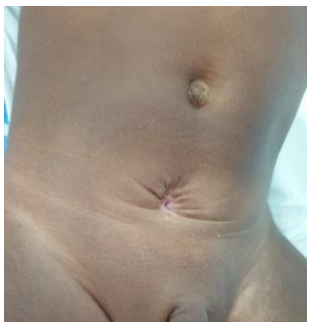
The Pictures Tell the Story – The Work



The Pictures Tell the Story – The Patients

















Epilogue

One of the teething problems for this visit was the lack of buy-in of all staff, and the institution, to the opportunities for learning and patient care – these issues were addressed with senior management, and resolved extremely well, enabling an ultimately very successful visit.

Kind Cuts for Kids is extremely grateful to the staff and management of the Maputo Central Hospital, particularly Dr Mandar Massada da Rocha and his junior staff, the nurses in theatre and the anaesthetic staff. Dr Amâncio Oliveira also played a significant role, and the ultimate success of the trip was because of the input of Dr Mouzinho Saide, the hospital director, and the Australian Consul, Michelle Smith, and her husband, Professor Alnor Rawjee.

Last, but not least, thanks to our supporters … our sponsors, "South Western Drilling" and "Edge", our platinum donors and Rotary Clubs in Australia.

Fittingly, the last photo of the working 2 weeks shows the conditions under which the staff work, noting the lack of corridor lighting as they were leaving theatre at 7pm.