UROLINK report on Hawassa Stone Service Project 2023-Feb 2024.

Objectives

To introduce of endoscopic surgery [ureteroscopy (URS) and percutaneous nephrolithotomy (PCNL)] at the Hawassa University Comprehensive Surgical Hospital (HUCSH), Hawassa, Ethiopia.

Timeline

	Nov-23	Mar-24	Nov-24	Mar-25	Nov-25	Mar-26	Nov-26
Visit							
PCNL workshop 1							
Visit							
PCNL workshop 2							
Visit							
URS workshop 1							
Visit							
PCNL workshop 3							
Visit * Out of Programme Training Opportunity							
Endourology (locally run)							
Visit *Out of Programme Training Opportunity							
Review skills transfer							
End of Project Review Full report							

November 2023 Workshop

In November 2023, a close urologist friend, Dr. Pedro Campillo (Hospital Universitario del Vinalopo, Elche, Alicante, Spain), from Spain, agreed to visit the centre. Pedro had spent a month at the HUCSH in 2014 and helped the team with the development of lower urinary tract endoscopy. Dr. Campillo stayed at the HUCSH between November 26 and December 14, 2023.

Dr. Campillo approached me in July 2023 and offered to visit Hawassa. Following discussion with the Urolink Team, I had a few meetings with Dr. Campillo to outline our vision for the stone service. As he was happy to travel in November, we did not approach any colleagues in

the UK. We started planning the Hawassa visit in September 2023. Prior to the visit, three of us (Dr. Teferi, Dr. Campillo, and CSB [Urolink member]) had two Zoom meetings to plan the trip and the workshop. In addition, we had regular updates on WhatsApp. It was agreed that at least two urologists would attend the theatre session during the training. Weeks before the trip, Dr. Campillo contacted industry representatives and urology colleagues locally and gathered 40 kg of hardware (guidewires, stents, and Teflon dilators). He got an invitation letter from Dr. Teferi, which happened to be very useful at customs in Addis.

The X-ray machine was not available in the urology theatre; therefore, Dr. Teferri approached orthopaedic colleagues in the hospital and managed to secure the other only available machine for two weeks. It was also arranged for the odd days that ortho did not need the c-arm. An X-ray machine was available at the private hospital, and it was used to deliver the workshop during the weekends.

On the first day, Dr. Campillo visited the hospital and reviewed patients on the ward and scans for planning the next day. It also reviewed the available equipment and discovered many more scopes than expected (it was supposed to be only a short 16-cm Storz Alken-Hohenfellner telescope without an operation sheath), but it was a nice surprise. Dr. Campillo started the workshop with training on equipment, and during this activity, he identified a number of nephroscopes available at the unit (Figure 1). There were a number of flexible cystoscopes and they were very useful during the workshop.

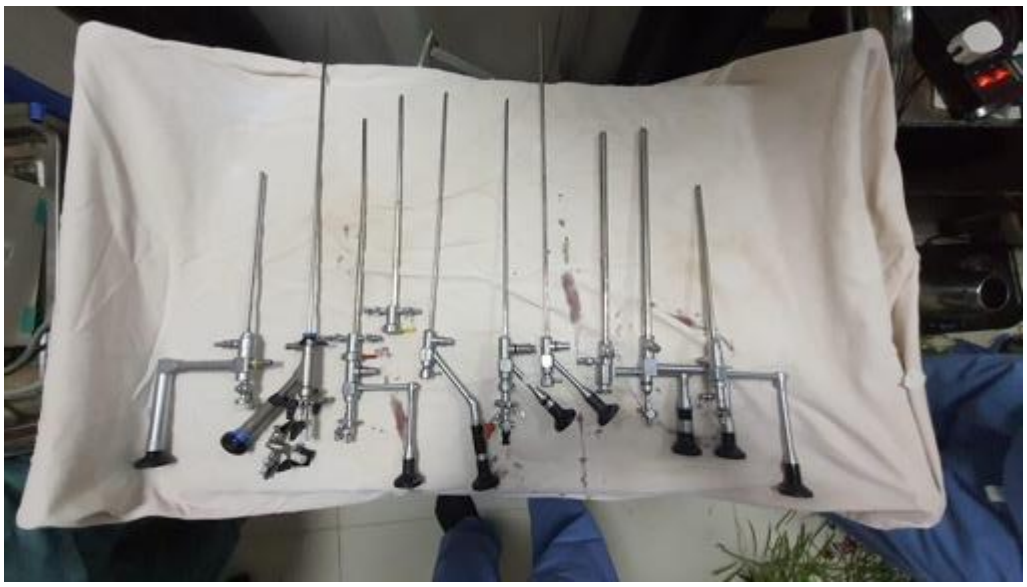

Figure 1: Nephroscopes identified at the unit.

Initially, watermelons were used for simulation training to teach the renal puncture (Figure 2).

Figure 2. Watermelon was used to simulate percutaneous puncture.

During the 3-week workshop, there were 13 days of endoscopic theatre; 14 PCNL and 13 URS were performed on 22 patients, plus some nephrostomy insertions, flexi cystoscopies, TURBT, and others; nearly 22 cases were done (Table 1). Dr. Tilaneh, Dr. Teferi, and Dr. Tizuzu's involvement was as follows:

Dr. Teferi: PCNL: 6 (main surgeon) + 2 (assistant) = 8; URS: 5 (main) + 0 = 5

Dr. Tilaneh: PCNL: 4 (main) + 5 (assistant)= 9; URS: 4 (main) + 4 = 8

Dr. Tizuzu: PCNL: 3 (main) + 1 (assistant)= 4; URS: 1 (main) + 4 = 5

Figure 3. The theatre set-up for PCNL.

Main surgeon PCNL	Dr. Campillo	1 (intended)	7% (intended)	6 (reality)	43%
	Dr. Teferi	6 (intended)	43% (intended)	4 (reality)	29%
	Dr. Tilaneh	4 (intended)	29% (intended)	2 (reality)	14%
	Dr. Tizuzu	3 (intended)	21% (intended)	2 (reality)	14%

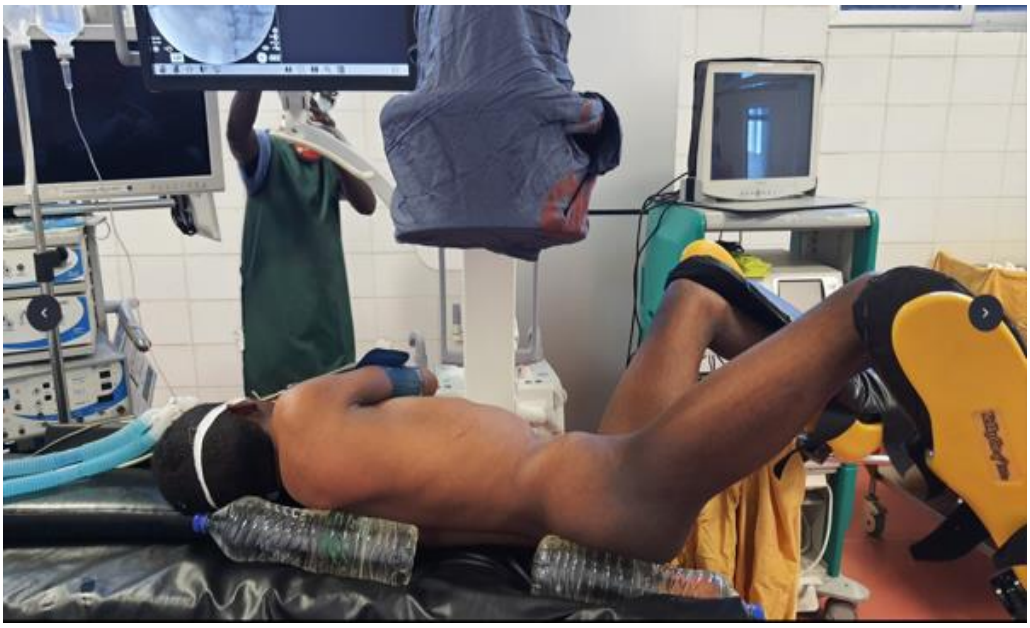

Figure 4. Patient positioned for anterior puncture.

Figure 5. Nephroscopy under screening.

Consolidated summary of cases

URS					PCNL			
		No	%				No	%
Stone size	1 cm	6	55%		**Stone size**	1 cm	2	14%
	1.5 cm	2	18%			2cm	5	36%
	2 cm	3	27%			3 cm	3	21%
						4 cm	1	7%
						≥5 cm	3	21%
Side	Right	6	50%		**Side**	Right	7	50%
	Left	6	50%			Left	7	50%
Location	Distal	3	23%		**Location**	Renal pelvis	8	53%
	MId	6	46%			Inferior	4	27%
	Proximal	4	30%			Mid calyx	1	7%
						Superior	2	13%
Impaction	Impacted	11	84%		**Impaction**	Impacted	7	50%
	Non impacted	2	15%			Non impacted	7	50%
Pre-stented	Yes	4	30%		**Tract size**	18	2	15%
	No	9	70%			24	5	38%
						30	6	46%
Cleared	Totally	11	85%		**Cleared**	Yes	11	79%
	Partially	1	8%			Partially	2	14%
	No	1	8%			No	1	7%

Challenges

- The pneumatic device was satisfactory; however, lasers may be useful with a flexible scope.
- Case selection was an issue at the beginning and in most parts of the workshop, mainly because most simple cases don't seek medical attention.
- Pre-op urine culture and antibiotics were scarce. Anyhow, only one patient had to remain admitted for fever. None needed a blood transfusion. Dr. Campillo didn’t leave any nephrostomy tubes post-PCNL; always JJ stents.

- One day, the team ran out of oxygen as a source of air pressure for lithoclast. No surgeries were performed that day.
- Even theatre personnel had an excellent temperament to work lengthy hours, but many distractions from mobile phones led them to run out of water frequently. (It did not help that saline bags were only 1 litre. Figure 6).

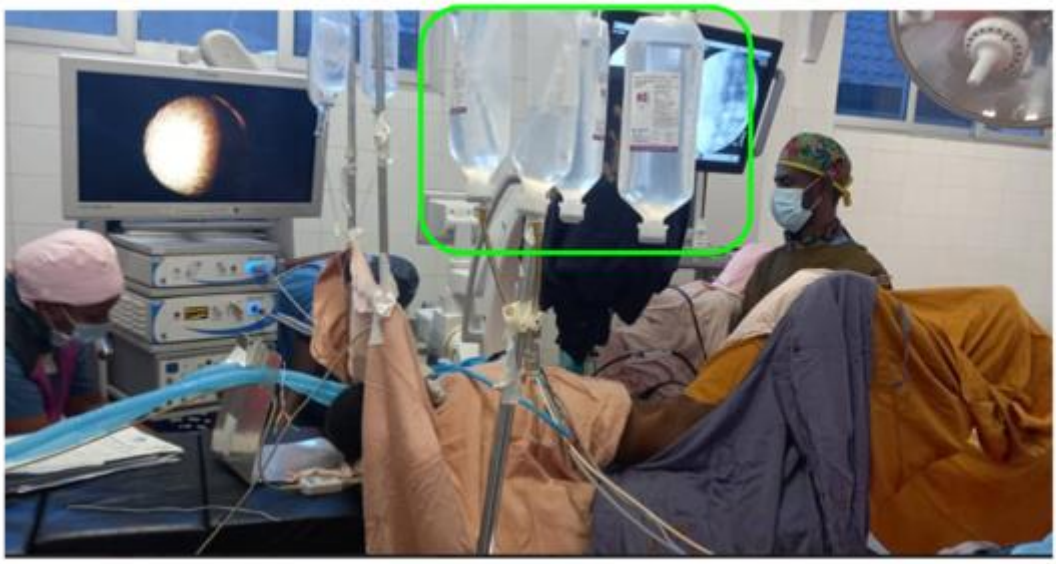

Figure 6. Multiple irrigant bottles needed for PCNL.

- Lack of instrument tidiness on the surgical table (Figure 7).

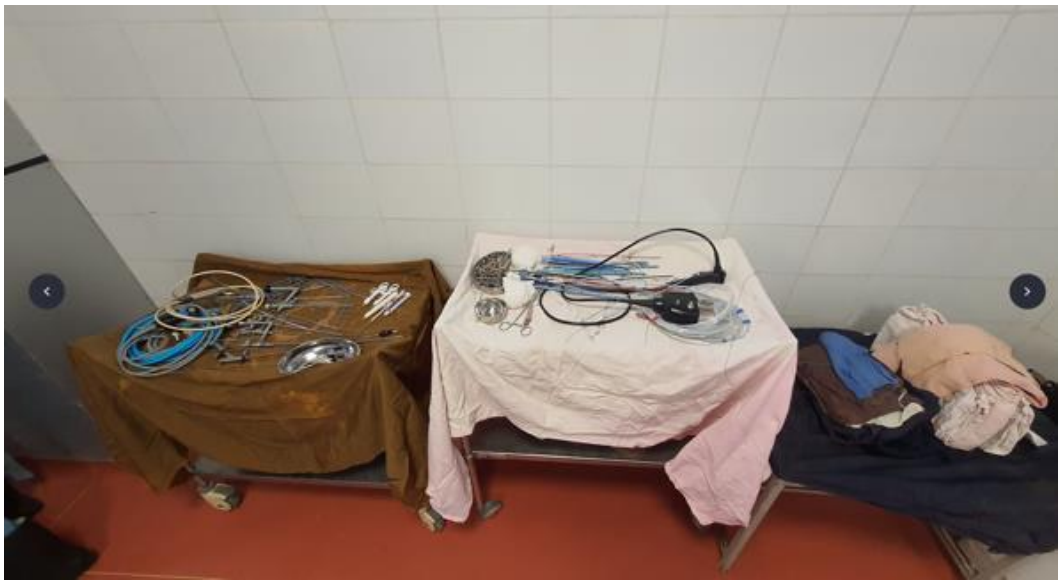

Figure 7. Multiple tables used to set up for percutaneous surgery.

- C-arm availability
- The main problem is a lack of continuity, as Ortho will not allow the Urology team to use their C-arm anymore. So, for now, they are doing URS without a C-arm and waiting for the renovation of theatres to finish. They have been promised a new C-arm for the urology theatre and it should arrive in July 2024. After the workshop they were considering to explore the possibility of using the C-arm from the Ortho theatre on an ad-hoc basis.

Hotel rooms and full board without drinks were provided by the hospital. The accommodation was very good.

Post-workshop: We understand that they have managed to perform nephrostomies, ureteroscopies and PCNL in a small number.

We have to postpone the **March 2024 workshop** as renovation work has started in theatres. This should take 4-5 months. We therefore plan to do a workshop on November 11, 2024. I have contacted colleagues in the UK, and two colleagues have agreed to join.