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From India to Africa: a different approach for faith-based healthcare in Africa

Gnanaraj Jesudian[a], Henning Mothes[b]

[a] MS (Gen), MCh (Urology), FICS, FIAGES, FARSI, International Federation of Rural Surgeons, Adjunct Professor (biomedical engineering), Karunya University, and Director Medical Services, SEESHA, Coimbatore, Tamil Nadu, India

[b] MD, Professor, Department of General, Visceral and Vascular Surgery, University Hospital Jena, Germany, and President, Global Surgery Germany

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Introduction

Africa has been a major focus for medical missionary work for many years. This has involved missionary work at varying scales of effort. Some, like Mission Aviation Fellowship, are capital intensive, owning 132 airplanes and using them in 34 countries.[1] There is the Pan African Academy of Christian Surgeons [PACS] which is non – denominational and multinational, helping to meet African surgical needs by training local surgeons.[2] There are many smaller missions like the German Zomba Hospital project[3] which caters to the medical needs in Malawi. We look at how our experience from India could help surgical care in Africa using the example of urology care in Malawi.

The Problems

A team from Canada reviewed Urology records at Zomba Hospital[4] and estimated that in this region there are at least 2000 men unable to void on their own, walking around with chronic indwelling catheters.[5] This is despite Zomba Hospital having several surgical specialists from Germany and Canada visiting the hospital two or three times a year over two decades spending plenty of resources. The visiting surgeons find it difficult to manage the problems in Africa as the patients come in very late, and the facilities that they are familiar with are not available.[6] Local surgeons can struggle to learn to tackle these difficult problems after they come back from training in Western countries. Hence, urology surgical care is available, mostly, only during the time visiting surgeons are present.

Background Information

A study at the Surgical Outpatient department of Zomba Central Hospital revealed that more than a third of the patients had presented with continuous bladder drainage, and there were almost equal numbers of patients with benign prostatic hypertrophy, urethral stricture, and bladder tumors.[4]

The Planned Solution

Early diagnosis, simpler treatment methods, and surgical care all through the year instead of being available only during the short-term missions would help solve the problem. With these in mind, the Zomba Hospital project[3] arranged a urology seminar and urology camp in March 2022 in association with the International Federation of Rural Surgeons (IFRS)[7] and DTC.[8]

The following were the objectives of the Urology Camp:

1. To train local urologists to use the safe, low cost, and easy-to-learn “Vaporization Surgeries for Prostate and Bladder tumors.”

2. To create awareness about "Rural Urology Practice" among the six district hospital doctors who refer patients to Zomba Hospital.
3. To train the District Hospital doctors to use the ultra – low – cost laptop cystoscope.

Method

The participants were encouraged to register and do the free online course in rural urology practice at https://academy.one.surgery/.

During the two-week period a two-day seminar was arranged for the district hospital doctors with didactic lectures in rural urology. On the other days, onsite training was arranged in the urology operating rooms of the Zomba Central Hospital.

Results

None of the participants enrolled for the free online course at One.Surgery. However, many of them subscribed to the IFRS YouTube channel for teaching rural surgeons.

https://www.youtube.com/channel/UCH8Rgx9cY0QCRgWMiD0lSIw

The two-day seminar was attended by 16 participants from Zomba Hospital and the six district Hospitals along with urologists from Lilongwe Hospital.

In the Urology Operating Room, 47 major procedures were carried out including 14 vaporization surgeries for prostate. During the last two days, the local surgeons were able to independently perform these surgeries. They also learned to do vaporization surgeries for bladder tumors and even treat the tumors that almost filled the entire bladder (which they would not have attempted to do previously). Dr. Chisenga and Dr. Duncan were able to independently perform vaporization surgeries and learn endoscopic urethrotomies. They and the visiting urologists were able to use the laptop cystoscope comfortably and to demonstrate its use to the district hospital surgeons. There was insufficient time for the local Urologists or the district surgeons to learn low cost cystometrogram or bladder pressure studies.[9]

Discussion

Unlike other areas, almost all the patients who were posted for surgical procedures presented with continuous bladder drainage. The resultant inflammation, the thickness and loss of elasticity of the bladder wall, and the increased vascularity made prostate surgeries difficult. Similarly, long-term, supra pubic drainage would make the endoscopic surgeries and other surgeries for urethral strictures difficult. This should be anticipated by the visiting teams who come to help. Unfamiliar operating facilities add to the difficulty of the procedures for the visiting surgeons. It was also noted that most of the local population had hypertension, and increased blood pressure adds to bleeding during surgery.

In this context, the vaporization approach was an advantage as there is hardly any significant bleeding during the procedure. Clear visualization of the operating field helps the local urologists learn quickly. It is difficult to arrange blood transfusions at places like Zomba hospital. The vaporization approach reduces the need for arranging blood transfusions. However, what local urologists liked most was the fact that the postoperative irrigations were clear, and there were no calls for catheter care and bladder wash etc. Hence, they were willing to stay late and do more cases.

The Laptop Cystoscope costs one twentieth of the conventional cystoscope and can be used to diagnose and treat almost half the urology problems if used along with low cost cystometrogram.[10]

Take Home Messages from India to Africa

The problems in rural India are often similar to the ones in Africa, and the experience of missions from India can be used to inform practice in Africa. The use of vaporization surgery in Malawi is an example.

Although it is a great advantage to surgery in rural areas, vaporization surgery is not popular in the West.[11] The rural and remote hospitals in India benefit from various ways rural surgeons in India make modern surgical

procedures available, especially with the help of the Churches and youth organizations. Burrows Memorial Christian Hospital successfully took care of the surgical needs of the rural areas with the Diagnostic camp /Surgical camp model, working with the churches in Mizoram and the Mizo Youth organization.[12] This model helps deal with surgical conditions in rural areas by experts using equipment like ultrasound, various scopes, and the laboratory. In remote and rural areas, Churches and local medical teams help to make use of facilities there for performing surgical work by visiting experts.

Another important lesson from rural work in India is the Human Resource and Equipment sharing program.[13] Equipment for minimally invasive surgeries like laparoscopes and endoscopes is expensive, and patient turnover in rural hospitals is insufficient to make them affordable. This type of equipment also needs specially trained staff to use and take care of them. Rural hospitals in Northeast India helped each other by sharing expenses, equipment, and trained personnel. Working together, they were able to achieve more work than what they would have done individually.

Gas Insufflation Less Laparoscopic[14] equipment and technique make surgeries possible using easily available and low-cost spinal anesthesia. Special techniques for removing renal stones using ureterorenoscopes make renal stone surgery possible under spinal anesthesia.[15]

Conclusion

Frugal Innovations, training, and empowering the local staff and equipment and human resource sharing are some of the ideas from India that could be used in Africa.

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Correspondence: Gnanaraj Jesudian, Tamil Nadu, India, jgnanaraj@gmail.com

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