Establishing a Laparoscopic Program in the Department of Urology at Cape Coast Teaching Hospital, Ghana: A Collaborative Experience

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Introduction

Laparoscopy, first performed in 1911 by Bertram M. Bernheim, minimizes abdominal wall trauma compared to open surgery.

Benefits include:
- Faster recovery and shorter hospital stays
- Lower infection rates
- Improved procedural efficiency

Laparoscopy has now become the gold-standard for many surgical procedures across specialties

Laparoscopy in Ghana

Laparoscopy has been successfully introduced in several major hospitals in Ghana, demonstrating clear clinical benefits. However, access to laparoscopic surgery remains limited outside these centers due to gaps in surgical training and local expertise.

The International Healthcare Volunteers (IHCV), a non-profit organization dedicated to improving healthcare delivery and education in resource-limited settings, partners with Cape Coast Teaching Hospital (CCTH) in Cape Coast, Ghana. Despite the donation of laparoscopic equipment to CCTH by another charitable organization, insufficient local expertise prevented its routine implementation.

In response, we launched a training initiative to build foundational skills among local surgeons and establish a sustainable laparoscopic surgery program at CCTH.

Methods

Case Selection

- With the urology team at CCTH, three cases were selected to demonstrate the main types of surgery:
  - Ablative – varicocelectomy
  - Extirpative - laparoscopic adrenalectomy
  - Reconstructive - pyeloplasty

Surgical Cases

- Surgeries were open to all surgical residents that wanted to observe laparoscopic techniques.
- Select residents were able to successfully perform aspects of the operation under supervision



Education

- A comprehensive lecture was delivered covering laparoscopy basics: equipment, setup, patient positioning, intraoperative considerations and complications.



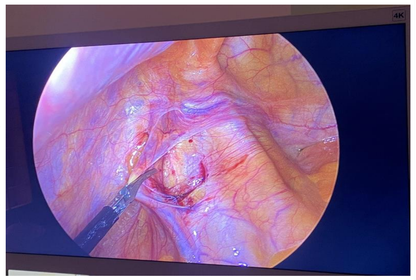
RUTGERS
- Surgeon must face the site of interest and the tower
- Cords/Gas Cylinders/Energy Devices/Suction
- Scrub Team
- Anesthesia position/Access for bed adjustment

Sustainability

- Contact has been maintained with the surgical team at CCTH to monitor patient outcomes, including:
  - Length of postoperative hospital stay
  - 3-month postoperative semen analysis
  - 6-month postoperative hydrocele rate

Results/Discussion

While reconstructive techniques such as laparoscopic suturing during the pyeloplasty present a challenge for beginners, their inclusion highlights the future potential of laparoscopy at CCTH.



Patient Outcomes

- Varicocelectomy
  - The Patient will undergo repeat semen analysis three months post-surgery
- Adrenalectomy
  - The patient experienced some persistent postoperative hypertension that ultimately improved with pain control.
- Pyeloplasty
  - Patient is recovering well with stent in place

This experience underscores the importance of tailored training and partnership in advancing surgical care in resource-limited settings.

Future Direction

The Department of Urology at CCTH has committed to performing all future varicocelectomies laparoscopically with longitudinal postoperative tracking. Thus, marking the first phase of a stepwise introduction to laparoscopy that will expand to include extirpative and reconstructive surgeries.

We will return to CCTH annually to continue developing these next phases of the laparoscopy program and in the interim are continuing to provide remote guidance.

Acknowledgements/References

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