

## Volunteer Surgical Camp at Gombe Hospital in Uganda.

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**Background:** *The Islamic University Habib Medical School in Uganda (IUIU), in collaboration with Doctors Worldwide (DWW) from Turkey, organized a surgical camp in April 2014. In this camp, different types of hernia repair, among other general surgical procedures were conducted. The target population was the population within the Gombe hospital serving districts.*

**Methods:** *The defined area for the surgical camp was Butambala and neighboring districts including Mpigi; Gomba, Mityana, and parts of Wakiso district. The IUIU team and Gombe hospital team were respectful to the sensitivities of the community, district and government officials.*

*The surgical team composed of 4 surgeons (three from DWW-Turkey and one from Uganda), 3 Anesthesiologists, (two from DWW-Turkey and one from Uganda), 2 nurses and 2 intern doctor, (one from DWW-Turkey and one from Uganda).*

**Results:** *The total number of patients operated was 115; however the total number of operations performed was 130. One hundred and fourteen operations were different types of hernia repair. The ages of hernia patients ranged between 1 and 80 years (mean±SD is 27.46±24.55). Hemoglobin values ranged between 9.2 and 17 (mean±SD is 12.5±1.48). Only two (1.8%) of 114 hernia patients had positive results on HIV serology. Sixteen patients underwent circumcision. Of those, only two (12.5%) patients had positive results on HIV serology.*

**Conclusion:** *Hernia is a common surgical problem in all age groups. It is more common in men. In addition to the operations conducted, the need for surgery for 187 patients was detected. This condition shows that the hernia operation is commonly accepted as a negligible condition.*

**Key Words:** Global surgery; Provincial; Hernia; World Wide Doctors; Uganda

## Introduction

Before 1960's, there had been a visible improvement in the field of health all over Africa, particularly resulting from international contribution. While many of the countries achieved their independence in 1960s, the modern health system has partially been maintained; but the exterritorial contribution sustaining the system had decreased over time and therefore, it had turned to a system that a major part of the society could not benefit from. African States had witnessed a marked collapse in the health sector. A variety of medical infrastructure had been exposed to a rapid deterioration. This, at the same time resulted in a "brain drain" in the health sector for whom seeking better life resources in other countries<sup>1</sup>. Inadequacy in the hospitals

and medical staff that can solve the basic health problems had increased in many African countries. Health care costs had been increased to such an extent that poor people had been deprived of the medical services<sup>1-2</sup>.

Unsuitable structure of the health system in the African countries is also affected tremendously by the political-military and economic crisis that had been witnessed since the 1980s in the region. This had further aggravated the existing problems in the field of health. Diseases such as HIV/AIDS, malaria, polio, African sleep disease (trypanosomiasis), diarrhea-related diseases, cholera, tuberculosis and nutritional deficiencies had caused serious hazards<sup>1</sup>. In addition to these problems, congenital and non-contagious diseases constitute serious health problems as well. For instance, death of many young men every year due to complicated or strangulated inguinal hernia is a fact of life<sup>3</sup>.

Disability-Adjusted Life Years (DALYs) measures the years of life lost and years lived with disability despite the excellent health expectation. By using this criteria, the difference between the current condition and the ideal condition can be clarified. The ideal condition is defined as the expected life with an excellent health that had been determined for every individual in that community at birth<sup>4</sup>. The burden of emergency surgical conditions reported with high rates in low and middle income countries. Hernia accounts for 3% Of DALYs and 2% of the deaths from emergency surgical conditions as reported in global burden of disease study<sup>5</sup>. DALY concept provided a strong evidence to accept the hernia disease as a public health problem<sup>3</sup>.

The IUIU, in collaboration with DWW, organized a surgical camp. The camp is intended to conduct hernia repair for all forms of hernias in addition to other surgical procedures within Gombe hospital serving area. The aim of this study was to estimate the prevalence and the distribution of hernia and related conditions within Gombe hospital serving area and to justify the variation in this distribution.

### Patients and Methods

Gombe General Hospital being under the authority of the Ministry of Health is the district hospital for Butambala. It is a 100 bed hospital in the rural setting, serving six districts including Mityana, Gomba, Mpigi, parts of Kalungu and Wakiso districts. A week long surgical camp was carried out by DWW and IUIU. A total of 130 operations were performed on 115 patients. The cases were hernia repair, circumcision, orchidopexy and hydrocele repair. There were 2 general surgeons, 1 urologist and 2 anesthesiologists from DWW-turkey and they were supported by the Ugandan medical staff consisting of surgeons, anesthesiologists and nurses.

*Statistical Analysis:* Descriptive values of age and hemoglobin were calculated as mean±SD, minimum and maximum values and descriptive values of sex, types of diagnosis, types of operation and Routine counselling testing were calculated as count and percent frequencies. PASW (ver. 18) program was used for statistical calculations.

### Results

The total number of patients operated was 115, (100 males (86.9%) and 15 females (13.1%)). However, the total number of operations performed was 130 by the end of the Gombe surgical camp. There were 16 uncircumcised patients among the 130 operations. The ages of uncircumcised patients ranged between 1 and 35 years (mean±SD is 10.88±10.61) and hemoglobin values ranged between 10 and 15 (mean±SD is 12.28±1.37). Only two (12.5%) of 16 uncircumcised patients had positive results on Routine counseling testing (HIV serology). Different types of hernia were detected in other 114 cases operated. HIV serology was positive in only two (1.8%) of 114 hernia cases. The ages of hernia patients ranged between 1

and 80 years (mean±SD is 27.46±24.55) and hemoglobin values ranged between 9.2 and 17 (mean±SD is 12.5±1.48). (Table 1)

**Table 1.** Types of Operations Performed in the Surgical Camp

Type of Operation	Number of Patients (n)	Percentage (%)
Hernioraphy	62	54.4
Orchidopexy	22	19.3
Hydrocelectomy	12	10.5
Herniectomy	8	7.0
Herniectomy&Orchidopexy	7	6.1
Bilateral Orchidopexy&Hydrocelectomy	3	2.6
Total	114	100

### Discussion

Hernia repair is one of the most frequently performed surgical procedures worldwide, yet more than half of hernias may be untreated in African countries that lack adequate and affordable surgical care. The gap between well documented repair rates in high income countries (130-260 per 100,000 people) and repair rates in African countries (18, 21 and 56 per 100000 in Malawi, Uganda and Northern Ghana respectively) suggests that more than 50 percent of hernia are neglected annually<sup>3</sup>. Lofgren et. Al declared that nearly half of the men with hernia suffered from pain, but less than one third had been operated (6). Longstanding cases contribute to a high prevalence of hernia and are associated with significant morbidity and mortality<sup>7</sup>. Although this disease burden can be effectively reduced by surgical repair, public health efforts to promote repair have been sparse because of the presumed high cost of surgery. Hence most hernia repairs in Africa are performed as high-risk emergency procedures. In Ghana and Uganda the percentage of emergency hernia surgery was of 65 % and 76%, respectively<sup>3</sup>.

There is a lack of knowledge about disease load of surgical diseases and of inguinal hernia in various communities in Africa<sup>3</sup>. The aim of this study was to estimate the prevalence and the distribution of hernia and related conditions in Gombe hospital serving districts, and to provide a possible justification of this distribution. Following advertising for the surgical camp, an overwhelming number of patients applied to be registered for the free surgeries. This condition indicates that the prevalence of hernia is high in Gombe hospital serving area. Although the data obtained in this study reveals that the incidence of inguinal hernia is higher among men compared to the women, the cross-sectional nature of the study makes it unreliable to reach such a general outcome. However, the prevalence of inguinal hernia is particularly higher in males than in females in the general population. Since the operations in emergency settings have a high ratio of mortality, elective repair of inguinal hernia should be performed following the diagnosis in order to minimize the risk of morbidity and mortality<sup>8</sup>.

Lofgren et al reported the prevalence of inguinal hernia in men to be 9.4 % in Africa. It was found in the same study that approximately one quarter of the patients operated for inguinal hernia were women. In the surgical camp, the female patients represented only 13.1% of all the cases. This can be justified by the fact that inguinal hernias constituted 80-85 % of all hernia cases, and inguinal hernias being more frequently seen in men. Although femoral hernias are seen more frequently in women than men, inguinal hernia is still the most common type of hernia in women. Indirect inguinal hernia is the most frequently encountered hernia type in both genders<sup>6</sup>. None of the cases in the surgery camp diagnosed with femoral hernia. It was observed in a study from Africa that the prevalence of hernia increases with advancing age. A high prevalence such as 37% was detected particularly among the ones over the age of 55. Still,

it can be seen in any age<sup>6</sup>. In the surgical camp, hernia repair was done for patients from almost all age groups.

External genitalia abnormalities had been reported to be seen at fairly high rates. If not treated, they can adversely affect the health of children; and they can cause infertility, malignancy, upper urinary tract pathologies and recurrent urinary tract infections. Therefore, earlier diagnoses and treatments are needed in these cases<sup>7</sup>.

“Undescended testicle” is one of the most common congenital pathologies of genitourinary system in male children. It is the second most common pathology after the inguinal hernia in the study group. The presentation ages of the untreated undescended testes in the study group were in the advanced age group<sup>10</sup>. It is claimed that uncircumcised men carries a higher risk for Sexually Transmitted Infection than circumcised men, the prepuce is sensitive to physical traumas, and forms a reservoir for Sexually Transmitted diseases’ pathogens.. HIV serology was positive in 12.5 % of uncircumcised patients operated in the camp, whereas it was positive in only 1.8% of hernia patients

Based on the findings of this study and those of other clinical studies it can be concluded that inguinal hernia leads to a significant burden of disease in Africa. Prevalence of the disease may be expected to increase with time due to the limited surgical capacity in the area. The diagnosis of inguinal hernia can be made by simple physical examination methods. Community-based studies about the epidemiology of inguinal hernia can reveal actual disease burden and the surgical and financial needs required for management of inguinal hernia in Africa. Evaluation of the hernia disease burden and being considered by health care authorities of the entire continent may provide positive changes in the health policies. Surgical care had been a basic component of health care around the world for over a century. In some diseases, surgery can be the only treatment to alleviate, and eliminate the disability and reduce the risk of death. While the more specialized surgical interventions are performed at tertiary care facilities, basic surgical services must be available in simple district hospitals.

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