Hernia Surgery in Nyeri Provincial General Hospital, Kenya: Our 6 Year Experience

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Abstract

Introduction: Hernia is a common surgical condition world over. Much of hernia surgery in Africa is carried out as an emergency while elective procedures are few. Knowledge of the burden of hernia disease would facilitate optimal resource allocation. **Methods**: A retrospective audit between 2007 and 2012 was carried out in Nyeri Provincial General Hospital. **Results**: Hernia surgery accounted for 5.9% (N=239) of all surgeries excluding obstetric operations. The male to female ratio was 1.6:1 and 35.6% were aged below 5 years. Inguinal hernia was the most common type (51.4%) followed by umbilical (21.5%), epigastric (17.5%), incisional (6.2%) and hiatus hernia (3.4%). A painless abdominal or groin swelling was the most common presentation (81.6%). All cases underwent open surgical repair with 93.8% of the operations done electively. The average length of hospital stay was 3 days. Of the inguinal hernias, 81.3% were right while 18.7% were left sided. Methods of inguinal hernia repair included Modified Bassini (79%), Shouldice 4% and Mesh (19%). Surgery was done under general, spinal or local anaesthesia (86%, 12% and 2% respectively). **Conclusion**: Hernia disease continues to be a significant source of morbidity in our set-up. While majority of the cases can be handled as elective cases, uptake of mesh repair remains low.

Key Words: Hernia surgery, Herniorapphy, Groin hernia, Mesh repair

Introduction

Hernia is a common surgical condition whose frequency is estimated at five percent of the total male population (1,2). Hospital based African studies have demonstrated varied incidence of inguinal hernia ranging from 7.7% to 30% (3-7). Strangulated hernia is a surgical emergency which claims many patients in Africa each year (8). In spite of this, asymptomatic reducible hernia remains a largely ignored disease 8 and most hernia patients will be operated on as emergencies (2). Hernia repair is the second most common abdomino-pelvic surgery after caesarean section (9). Third world countries lag behind in embracing recent technological advancements in hernia surgery as a result of cost and human resource limitation (10). Besides, due to scarcity of data, hernia surgery output in Africa is largely unknown (8). Knowledge of the prevalence, pattern and management of hernia disease locally will highlight local surgical needs and inform health resource allocation. This clinical audit aims to highlight available data on hernia disease with reference to prevalence, pattern and management at a provincial general hospital in Kenya.

Methods

After obtaining permission from the hospital administration, we carried out a 6-year retrospective cross sectional study on all patients operated for hernia at the Nyeri Provincial General Hospital from January 2007 to December 2012. The setting is a referral hospital serving most of central Kenya and parts of Eastern and North Eastern Kenya. The hospital's department of surgery is led by general, cardiothoracic, orthopaedic, plastic and urologic surgeons. Hernia disease is primarily managed by the general surgeon assisted by medical officers and College of Surgeons of East, Central and Southern Africa (COSECSA) residents. From the theatre records we extracted data pertaining to age, sex, diagnosis and type of surgery. Using the patient's file number, we retrieved files from the medical records office and extracted data pertaining to patient's demographics, clinical presentation, physical findings, diagnosis, mode of anaesthesia and type of repair. Information on post-operative hospital stay and clinic follow up was

also extracted. These data were stored in a data base using SPSS® for windows v17.0 (Chicago, Illinois). Analysis was done using descriptive statistics.

Results

There were 5055 surgeries, excluding obstetric and gynaecological operations during the period of study. Of these 293(5.9%) were hernia surgeries, with an annual average of 49 cases. The files for 116 patients could not be retrieved. Therefore, our analysis of the presenting complaints, physical findings and post-op follow-up does not include these 116 patients. Sixty two percent (N=181) of the patients were males (male to female ratio 1.6:1) and 35.59% of the patients were aged below 5 years (Figure 1). Of the inguinal hernias, 81.3% were right sided and most were found in male patients (Figure 2). Table 1 portrays the clinical presentations. All hiatus hernias were diagnosed via upper gastrointestinal endoscopy for gastro-oesophageal reflux disease (GERD) symptoms.

Figure 1: Age and sex distribution of hernia disease

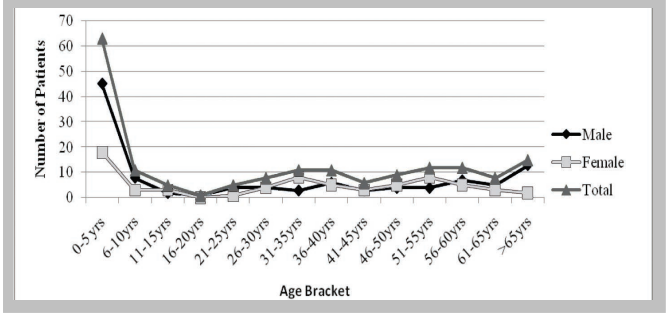

Figure 2: Type of hernia by sex

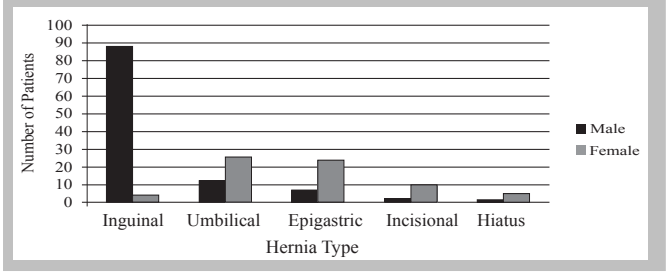

Figure 3: Length of hospital stay

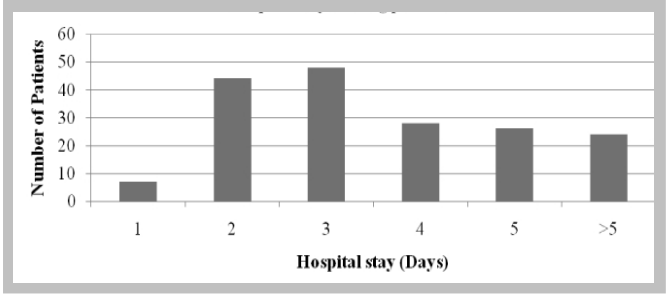

Table 1: Clinical presentation

Presentation	Frequency	Percentage
Painless swelling	144	81.36
Reducible painful Swelling	17	9.60
Irreducible painful swelling	8	4.52
Vomiting	8	4.52

All patients had open surgical repair with 93.8% (N=166) being elective cases. Surgery was done under general, spinal or local anaesthesia (86%, 12% and 2% respectively). For groin hernia, tissue repair was done in 83% (79% and 4% for Modified Bassini and Shouldice repair respectively) of the cases while 17% had mesh repair. Most patients were admitted for three days (Figure 3).

Discussion

In our study, hernia surgery accounted for 5.9% of total non-obstetric non-gynaecologic surgical operations. This is comparable to a study by Nordberg et al (7) which found a prevalence rate of 6.4%. Inguinal hernia was the commonest type (51.4%) followed by umbilical (21.5%), epigastric (17.5%), incisional (6.2%) and hiatus hernia (3.4%). Over a third of inguinal hernias occurred in boys less than 5 years. Fewer inguinal hernias were seen in ages 16 to 20 years but the number increased gradually after 25 years. This could be attributed to developmental anomalies of the inguinal region associated with testicular descent in the young and weakening of inguinal canal floor muscles in the elderly (3,5). Inguinal hernia was four times more common on the right than on the left. This agrees with previous observations of a right sided predominance (8, 11) which has been linked to later descent of the right testis; an anatomical fact that also explains the higher incidence of inguinal hernia disease in males compared to females (22 times in this study) (8,9, 11, 12). Umbilical, epigastric, incisional and hiatus hernias were more common in female patients with sex ratios of 0.5, 0.3, 0.1 and 0.25 respectively. Kulah et al (11) demonstrated similar ratios for umbilical and incisional hernia. All except one case of incisional hernias followed caesarean section surgery. Incisional hernia among women could be attributed to unrepaired rectus sheath and/or use of catgut suture material for rectus sheath repair as has been observed in earlier accounts (13).
The most common presenting complaint was anterior abdominal wall or groin swelling. General anaesthesia remains the main mode of anaesthesia for hernia

surgery (11,14,15). The same is reflected in our study. However, Irabor and colleagues in their study found that Ketamine and local anaesthesia can be used with success in hernia surgery as long as awareness of their side effects and subsequent remedial measures are taken (16).

All hernia repair surgeries were done using open surgical approach due to unavailability of laparoscopic equipment and skilled personnel. None of hernia repair in our study was done as a day case despite the fact that elective hernia day-surgeries reduce financial constraint on hospitals, length of hospital stay and enable early patient mobilization with a very low mortality (5,17,18).

Most of hernia repairs in our study were performed as elective cases well reflected in the presentation where 4 out of 5 patients presented with a painless swelling only. Either there has been a paradigm shift since the study by Odula et al (2) or our study setting has improved care for hernia disease where 86% are treated electively. In our study the average hospital stay was 3 days. We note that financial constraints in clearing hospital bills on discharge played a major role in increasing length of hospital stay. Patients who have undergone elective hernia repair can be safely discharged on the first post-operative day (11,19).

Most patients were discharged from surgical clinic within six months thus we could not ascertain long term outcomes including recurrence rates.

Our study is limited in its retrospective nature; therefore there is need for prospective studies to establish long-term outcomes and recurrences of ventral hernias after repair.

Conclusion

Hernia disease continues to be a significant source of morbidity in our set-up. While majority of the cases can be handled as elective cases, uptake of mesh repair remains low.

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