



INGUINAL HERNIA AMONG PATIENTS ATTENDED A GENERAL
PUBLIC SUDANESE HOSPITAL

Elsadig Yousif Mohamed MD^{1*}, Sawsan M. Abdalla MD¹, Sami Eldirdiri MD²,
Humida Ali Gurashi MD³, Mohamed Ahmed A/Gadir Elimam Ounsa MD⁴, Khalid
Altohami Medani MD¹, Waled Amen Mohammed Ahmed MD⁵

¹Department of Community Medicine and Public Health e , Collage of Medicine, Majmaah
University, Saudi Arabia.

²Department General Surgery, Faculty of Medicine, University of Gadarif, Sudan

³Department of Community Medicine, Faculty of Medicine, University of Gadarif, Sudan

⁴Department of Obstetrics and Gynaecology, Faculty of Medicine, The National Ribat
University, Khartoum, Sudan.

⁵Faculty of Applied Medical Sciences, Al-Baha University, Kingdom of Saudi Arabia

Article Received on 10/01/2015

Article Revised on 03/02/2015

Article Accepted on 25/02/2015

*Correspondence for
Author

Dr. Elsadig Yousif
Mohamed

Department of Community
Medicine and public health,
College of Medicine,
Majmaah University, Saudi
Arabia.

ABSTRACT

Objectives: The objectives of the study were to determine risk factors related to inguinal hernia, its types, clinical presentation and line of management in Gedarif Teaching Hospital], Sudan. **Research**

methods: The study was descriptive, retrospective. One hundred and eighty records of patients attended the surgical department in Gadarif Teaching Hospital and diagnosed as inguinal hernia were enrolled in this study. Data were collected by a check list. Analysis was done by the computer using SPSS version 16. **Results:** Most of the hernias

presented to Gedarif teaching hospitals were indirect (66.2%). Direct and strangulated hernias constituted 24.4% and 9.4% respectively. Risk factors related to inguinal hernia were urine retention, chronic cough, constipation, grandmultipara and previous inguinal hernia constituted 35.6%, 28.9%, 22.8%, 6.7%, 3.3 %respectively. Most of the patients were presented with inguinoscrotal swelling (60%) followed by inguinal swelling (28.3%), few patients were presented with pain in the inguinal region (11.7%). The most common Inguinal hernia repair was combined herniotomy and hernioraphy (63%). **Conclusion:** The study concluded that the most common types of inguinal hernia presented to Gadarif teaching

hospital were the indirect followed by the direct and the strangulated. The risk factors of inguinal hernia were urine retention, chronic cough and constipation. The most common clinical presentation of inguinal hernia was inguino-scrotal swelling. Combined herniotomy and herniorrhaphy was the commonest surgical intervention.

KEYWORDS: Inguinal hernia, public hospital.

INTRODUCTION

An inguinal hernia is a protrusion of abdominal cavity contents through the inguinal canal. It is very common in men (lifetime risk 27% for men, 3% for women.^[1] About 700,000 inguinal hernia operations are performed each year in the United States, making this disease one of the most common conditions requiring surgical treatment. Although the disease is associated with considerable morbidity, yet mortality is rare, except in remote areas, where delay in treatment can lead to strangulation and death.^[2] Inguinal hernia is also a common congenital disorders in children.^[3, 4] There are two types of inguinal hernia, direct and indirect. They are defined by their relationship to the inferior epigastric vessels. Direct inguinal hernias occur medial to the inferior epigastric vessels when abdominal contents herniate through the superficial inguinal ring. A direct inguinal hernia is less common (25%-30% of inguinal hernias) and usually occurs in men over 40 years of age. Indirect inguinal hernias occur when abdominal contents protrude through the deep inguinal ring, lateral to the inferior epigastric vessels; this may be caused by failure of embryonic closure of the processus vaginalis.

Hernias present as bulges in the groin area that can become more prominent when coughing, straining, or standing up. They are rarely painful and significant pain is suggestive of strangulated bowel (an incarcerated indirect inguinal hernia). Mild pain was believed to be a recognized, but infrequent complication after inguinal hernia repair.^[5] The inability to "reduce", or place the bulge back into the abdomen usually means the hernia is 'incarcerated' which requires surgical correction.

In men, indirect hernias follow the same route as the descending testes, which migrate from the abdomen into the scrotum during the development of the urinary and reproductive organs. The larger size of their inguinal canal, which transmitted the testicle and accommodates the structures of the spermatic cord, might be one reason why men are 25 times more likely to have an inguinal hernia than women^[6], a positive family history is a risk factors for inguinal hernia in females.^[7]

The objectives of the study were to determine factors related to inguinal hernia, its types, clinical presentation and line of management.

PATIENTS AND METHODS

Study design: The study was descriptive, retrospective. One hundred and eighty records of patients attended the surgical department in Gedarif Teaching Hospital and diagnosed as inguinal hernia were enrolled in this study.

Study area and population: Gedarif State is located in the southern east part of the Sudan. The service area is 72000 square kilometers and population size of 1384000. The state is divided into 12 localities. In Gedarif State there are 26 hospitals, 51 health centers and 241 basic health care units.^[8] Gedarif Teaching Hospital is the main state hospital providing services for population from the capital and the localities as long as teaching medical students of Faculty of Medicine, Gedarif University. There are five specialists working in department of general surgery besides registrars, medical practitioners and house officers.

Data collection and analysis: Data were collected by a check list. All records of patients presented to the surgical department in Gedarif Teaching Hospital and diagnosed as inguinal hernia during 2012 were reviewed and data were retrieved from them. Analysis was done by the computer using SPSS version 16. (SPSS, Chicago, Illinois USA). Frequencies were employed describe the data.,

RESULTS

Table (1) shows that most of the hernias presented to Gedarif Teaching Hospital were indirect (66.2%). Direct and strangulated hernias constituted 24.4% and 9.4% respectively.

Risks related to inguinal hernia were urine retention, chronic cough, constipation, grandmultipara and previous inguinal hernia constituted 35.6%, 28.9%, 22.8%, 6.7%, 3.3 % respectively as shown in table (2).

Table (3) showed that most of the patients were presented with inguino-scrotal swelling (60%) followed by inguinal swelling (28.3%), few patients were presented with pain in the inguinal region (11.7%). Results showed that 21% of patients were treated with herniotomy, 15.6% with herniorophy and 63.3% with both herniotomy and herniorophy. The complications of inguinal hernia were irreducibility, obstruction and strangulation constituted 7.8%, 6.7% and 5% respectively. Most of the patients were cured following

surgical intervention (97.2%), two patients were referred, two discharged themselves against medical advice and one patient died .

Table (1): Types of inguinal hernia

Type	Frequency	Percent
Indirect	119	66.2%
Direct	44	24.4%
Strangulated	17	9.4%
Total	180	100.0%

Table (2): Risk factors for inguinal hernia

Risk factor	Frequency	Percent
Urine retention	64	35.6%
Chronic cough	52	28.9%
Constipation	41	22.8%
Grandmultipara	12	6.7%
Previous inguinal hernia	6	3.3 %
Other	5	2.8%
Total	180	100%

Table (3): Clinical presentation of inguinal hernia

Presentation	Frequency	Percent
Inguino scrotal swelling	108	60.0%
Inguinal swelling	51	28.3%
Pain	21	11.7%
Total	180	100.0%

Table (4): Management, complications and outcome of inguinal hernia

Item	Frequency	Percent
Surgical management		
Herniotomy	38	21.1%
Herniorophy	28	15.6%
Both	114	63.3%
Total	180	100%
Complications		
Irreducibility	14	7.8%
Obstruction	12	6.7%
Strangulation	9	5.0%
Other	2	1.1%
Total	37	20.6%
Outcome		
Cured	175	97.2%
Referred	2	1.1%
Discharged themselves against medical advice	2	1.1%
Dead	1	0.6%
Total	180	100%

DISCUSSION

The large proportion of patients who are afflicted with inguinal hernia, the great variety of forms in which it appears; the fatality which results from its improper treatment, and the ample resources of surgery in preventing its evil consequences, are circumstances which combine to render the investigation of hernia peculiarly interesting.

In our results indirect inguinal hernia was the commonest type followed by the direct, the strangulated hernia is the least type of hernia. This finding is not in agreement with EIR ashied M et al who found that the most common type was strangulated hernia.^[9] Our study showed that the most common complications were urine retention, chronic cough and constipation. These findings were inconsistent with Dorsey JS Who found a positive family history of inguinal hernia, and chronic obstructive airway disease were the most common complications.^[2] Our findings were also not in line with Hung Lau et al who found that work load, a positive family history and chronic obstructive air way disease were the most common complications of inguinal hernia.^[2, 10]

The most common clinical presentation according to our study was inguino-scrotal swelling (60%), inguinal swelling (28%), and pain (11.7%). Inguinal hernia repair (IHR) is the most common general surgical procedure in the United Kingdom. The past decade has seen an increase in the use of prosthetic mesh in open and laparoscopic hernia repair based on the premise of a tension-free repair^[11], conversely, although traditional repair with suturing using the Shouldice technique has been reported with low rates of recurrence, it is often associated with high rates of recurrence when done in the wider community.^[12] Our results showed that combined Herniotomy and Herniorraphy were the most common operation for inguinal hernia (63.3%), in this case the surgeon cuts the sack and strengthens the posterior wall of the inguinal canal. The mesh is used only for huge hernia and obese patients in a small scale while laparoscopic is not used at all. Our findings were inconsistent with H D E Atkinson who stated that herniorraphy is that most common inguinal hernia repair followed by open prosthetic mesh repairs and laparoscopic mesh repairs.^[13] Open] mesh repair has a lower recurrence rate, is simpler to perform, and is the preferred method for herniorrhaphy.^[14] The study revealed complication ratio of 20.6%. This finding is lower than reports by Bin Tayair SA and Al-Arabi Y who reported 18.8% and 37.7% in early and late post operative complications^[15,16] and higher than 10-15% reported in London.^[17] Complications revealed were irreducibility, obstruction and strangulation. Other authors showed pain as a leading

complication^[18] followed by scrotal haematoma and wound infection.^[18,19] Cure rate of inguinal hernia repair according to this study is high (97.2%). This finding is in line with other studies.^[13]

CONCLUSION

The study concluded that the most common types of inguinal hernia presented to Gedarif Teaching Hospital were the indirect followed by the direct. The risk factors of inguinal hernia were urine retention, chronic cough, constipation, granmaltipara and previous inguinal hernia. The most common clinical presentations of inguinal hernia were inguino-srotal swelling followed by inguinal swelling. Few patients presented with pain in the inguinal region. Combined herniotomy and herniorophy was the commonest surgical intervention. Irreducibility was the most common complication and cure rate was high and consistent with the literature.

REFERANCES

1. Jenkins JT, O'Dwyer PJ. Inguinal hernias 2008. *BMJ* 2008; 336 (7638): 269–272. doi:10.1136/bmj.39450.428275.AD. PMC 2223000. PMID 18244999
2. Dorsey JS. *The Elements of Surgery*. Vol II. Philadelphia, Pa: Edward Parker; 1818:26.
3. Skoog SJ, Conlin MJ. Pediatric hernia and hydroceles. The urologist's perspective. *Urologic clinics of North America*; 1995; 22(1):119-30.
4. Al-Abbadi K and Smadi SA. Genital abnormalities and groin hernias in elementary-school children in Aqaba: an epidemiological study. *EMHJ*. 2000; 6 (2/3): 293-298.
5. Idris SA , Elzaki EK , Ali AQ , Shalayel MHF, Idris TA , Alegil I. Chronic pain after inguinal hernia repair. *Sudan Medical Monitor* 2010; 5(1).
6. Desarda MP (2003). Surgical physiology of inguinal hernia repair—a study of 200 cases. *BMC Surg* 2003; 2. doi:10.1186/1471-2482-3-2. PMC 155644. PMID 12697071.
7. Liem MSL, Graaf Y, Zwart RC, Geurts I, and VroonhovenT. Risk Factors for Inguinal Hernia in Women: A Case-Control Study. *Am J Epidemiol* 1997;146:721.
8. Ministry of Health, Gedarif State, Health Aunual report 2010.
9. Abdalla AM, Widatalla AH, Ahmed ME. External strangulated hernia in Khartoum, Sudan. *East Afr Med J*. 2007; 84(8): 379-82.
10. Jansen PL, Klinge U, Jansen M and Junge K. Risk factors for early recurrence after inguinal hernia. *BMC Surgery* 2009;9:18. Doi : 10.1186/1471-2482-9-18.

11. Lichtenstein IL, Shulman AG, Amid PK, Montlor HM. The tension-free hernioplasty. *Am J Surg*, 1989; 157: 188–93.
12. McCormack K, Scott NW, Go PM, Ross S, Grant AM. Laparoscopic techniques versus open techniques for inguinal hernia repair. *Cochrane Database Syst Rev* 2003(1): CD001785.
13. Atkinson HDE, Nicol SGN, Purkayastha S, Paterson-Brown S. Surgical management of inguinal hernia: retrospective cohort study in southeastern Scotland 2004. *BMJ* 329 : 1315 doi: 10.1136/bmj.38282.675556.F7
14. Wara P, Bay-Nielsen M, Juul P, et al. Prospective nationwide analysis of laparoscopic versus Lichtenstein repair of inguinal hernia. *Br J Surg*. 2005; 92:1277-1281.
15. Office of Population Censuses and Surveys. *Hospital Episode Statistics 1993/4*. London: HMSO, 1995.
16. Lau H, Fang C, Yuen WK, Patil NG. Risk factors for inguinal hernia in adult males: A case-control study. *Surgery*. 2007; 141(2): 262-266
17. Osifo O, Amusan TI. Outcomes of giant inguinoscrotal hernia repair with local lidocaine anesthesia. *Saudi Medical Journal* 2010; 31(1): 53-58.
18. Fadlalla FAM, Musa MT. Early Complications Prosthetic Inguinal Hernia Repair. *Sudan Journal of Medical Sciences* 2008;3 (3): 207-210
19. Lughezzani G, Sun M, Perrotte P, Alasker A, Jeldres C, Isbarn H, Budäus L, Lattouf JB, Valiquette L, Bénard F, Saad F, Graefen M, Montorsi F, Karakiewicz . Comparative study of inguinal hernia repair rates after radical prostatectomy or external beam radiotherapy. *Int J Radiat Oncol Biol Phys*. 2010 Dec 1;78 (5):1307-13.