

# Giant Inguinal Hernia: Our Experience in Maiduguri, North Eastern Nigeria

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**Abstract:** *Background:* Globally, inguinal hernia is the most common type of abdominal wall hernias. Access to surgical repair is limited resulting in many patients developing giant hernias associated with higher morbidity and mortality. *Patients and Methods:* The study reviewed all cases of giant inguinal hernia managed between January 2007 and December 2012 in U.M.T.H. *Results:* A total of 21 patients were analyzed. All patients were males; age ranged from 35 - 78 years with peak age group 60 - 69 accounting for 33.33% of patients. The presenting features include groin swelling, dragging sensation in all patients, coital problems in 61.90%. There were 61.90% hernia on the right and 38.10%. Indirect hernia was 80.95% and 19.05% were direct hernia. The etiological factors include farming in 100%, benign prostatic enlargement 52.38%. The post operative complications were scrotal hematoma in 33.33%, and surgical site infection in 14.29%. *Conclusion:* Giant inguinal hernia is often seen in developing countries due to late presentation often in patients with inter current medical conditions making open surgery to have a prime place. To reduce morbidity and mortality public enlightenment towards early presentation is advised.

**Keywords:** Giant, Inguinal hernia, management, outcome

## 1. Introduction

Inguinal hernia repair is one of the most common general surgical operations worldwide accounting for 10 – 15 % of all surgical procedures and is the second most common surgical procedure after appendicectomy<sup>1, 2</sup>. In parts of Africa the annual incidence of inguinal hernia is as high as 175per 100 people<sup>3</sup>. However few have access to surgical repair resulting in many patients developing long- standing inguinoscrotal hernias associated with higher morbidity and mortality when such long standing hernia equals to the patient's head, or extends to the mid thigh in standing position, is referred to as Giant hernia,<sup>4,5</sup>. The diagnosis of Giant inguinal hernia is clinical. Giant hernia affects the quality of life of patients such as mobility, coitus, voiding of urine and self esteem<sup>6, 7</sup>. The repair of giant hernia is quite challenging due to loss of domain (visceral migration), huge hernia sac, and poor quality of groin/ scrotal skin. Thus, problems encountered include respiratory embarrassment following reduction of the hernia, primary hemorrhage during excision of sac or hematoma in dead space, and occasional need for reconstruction of groin or scrotal skin<sup>8</sup>. In developing countries because of non availability of mesh and laparoscopic facilities in most centres open surgery and the traditional suturing techniques still play a major role<sup>9,10</sup>. This study was undertaken to describe our experience with open surgical repair of Giant inguinal hernia in a developing country.

## 2. Patients and Methods

The study reviewed all cases of Giant inguinal hernia managed between January 2007 and December 2012 in the University of Maiduguri Teaching Hospital, and State Specialist Hospital Maiduguri. The clinical data were obtained from clinical notes and laboratory results and analyzed using SPSS version 16. Informed consent was obtained from patients. Permission granted from the

Hospitals ethical and Research Committees. Giant inguinal hernia, for the purpose of this study, is defined as a hernia that is equals to or more than the patient head, and or extends to mid thigh in standing position. Diagnoses were made based on clinical evaluations. Investigations carried out includes packed cell volume, urinalysis, blood chemistry, chest x-ray and electrocardiography where indicated. Patient with urethral stricture and prostatic enlargement had definitive surgeries at the same sitting, and those with chronic cough were evaluated and treated. All patients had hernia repair under spinal or general anesthesia with antibiotic prophylaxis at induction ceftriaxone and metronidazole. The posterior wall repair was either Nylon Darning, or what the authors coined as MODIFIED NYLON DARNING (This comprise of two layers of nylon Darning cross-crossing inform of fishingnett that is improvised Nylon mesh). All patients were followed up as outpatient after discharge.

## 3. Results

A total of 27 patients were reviewed of which 6 were excluded for incomplete data and 21 analyzed. All patients were male age range 35 - 78 years with peak age group 60 - 69 accounting for 7(33.33%) patients **Table 1**. The duration of symptoms ranged from 5 – 27years with a mean of 11.93. The presenting features include groin swelling, dragging sensation in all patients 21(100%), interference with work in 19(90.48%), coital problems in 13(61.90%) **Table 2**. There were 13(61.90%) hernia on the right and 8(38.10%). Seventeen (80.95%) were indirect and 4(19.05%) were direct hernia. The etiological factors were subsistence farming in 21(100%), Benign prostatic enlargement 11(52.38%), Chronic cough in 7(33.33%) menial artisans and urethral stricture in 4 each (19.05%). Co-morbid medical conditions at presentation were Hypertension in 7(33.33%), Diabetes in 5(23.81%), and Asthma in 3(14.29%). Anesthesia was spinal in 19(90.48%) while

2(9.52%) had general anesthesia. The technique of posterior wall repair was Nylon Darning in 17(80.95%) while 4(19.05%) had modified Nylon Darning. The post operative complications were scrotal hematoma in 7(33.33%), and surgical site infection in 3(14.29%), there was no mortality. Hospital stay ranged from 3days to 2 weeks. Postoperative follow up ranged from 3 – 18months.

**4. Discussion**

Giant inguinal hernia is seen in patients from rural areas that are elderly, poor, with no access to medical fertilities<sup>11</sup>. This study found similar category of patients. The size of hernia often causes difficulty in working, sitting or lying down. The penis is often buried inside the scrotum causing the urine to dribble over the already stretched out scrotal skin this can lead to ulceration and secondary infection<sup>12</sup>. Patient can also complain of difficulty in voiding.

Complication of like incarceration, obstruction, as well as strangulation of bowel content can occur. This study found similar presentation with additional problem with difficulty in coitus in 61.90% of patients, with ammoniacal dermatitis, but without ulceration. Disappearance of the penis (vanishing penile syndrome) was found in 52.38%. Small bowel and omentum is found in the hernia sac, stomach caecum appendix sigmoid colon urinary bladder and ovaries have been described<sup>13</sup>. A case of herniation of the kidney and ureter has been described<sup>14</sup>.

This study found similar content of the hernia with small bowel and omentum as the commonest, transverse colon and omentum. Reduction of the herniated viscera leads to a sudden increase in intra abdominal and intra thoracic pressure that can lead to respiratory compromise this is associated with high mortality<sup>15</sup>. Several technique have been described to address this loss of domain including debulking of the abdominal contents, or enlarging the abdominal cavity. Extensive bowel resections for example total or hemicolectomy as well as omentectomy or even small bowel resections have been described<sup>16</sup>.

Artificially induced preoperative progressive pneumoperitoneum for enlarging the abdomen<sup>17</sup>. The pneumoperitoneum has been found to enlarge the hernia sac rather than the abdominal cavity therefore in effective<sup>18</sup>. In this study we had no reason to indused pneumoperitoneum or under take visceral resection. The rick of recurrence is

one of the major challenges in the repair of giant hernia. Mesh repair using a tension free technique should be use wherever possible<sup>19</sup>. In this study we used nylon Darning in 80.95% and The Modified nylon Darning (improvised nylon mesh) we described earlier in 19.05% of our patients do to non availability of mesh. We had no reason to undertake groin or scrotal skin reconstruction. A firm compression bandage with adequate drainage must be use to prevent the development of large scrotal hematoma<sup>20</sup>. We had complications of surgical site infection in 3 patients; scrotal hematoma in 5 patients treated by aspiration in 4 and 1 had evacuation under anesthesia. There was no mortality. The overall hospital stay was 3 – 14 days, much longer than hospital stay in uncomplicated hernia that are been done as day case surgery in many centers. There was no recurrence over the follow up period of 3 – 18 months.

**5. Conclusion**

Giant inguinal hernia is often seen in developing countries due to late presentation often in patients with inter current medical conditions making open surgery to have a prime place. To reduce morbidity and mortality public enlightenment towards early presentation is advised. There is need for a long term follow up to determine recurrence rate and compare outcome of open technique with Laparoscopic repair.

**Table 1: Age Distribution**

Age in years	No	%
30 – 39	1	4.76
40 – 49	3	14.29
50 – 59	4	19.05
60 – 69	7	33.33
70+	6	28.57
Total	21	100

**Table 2: Presenting Features**

Presenting features	No	%
Groin swelling	21	100.00
Dragging sensation/Discomfort	21	100.00
Impaired mobility/posture	21	100.00
Interference with work	19	90.48
Coital/ Voiding problems	13	61.90
Vanishing penile syndrome	11	52.38
Dermatitis	07	33.33
Recurrent bowel obstructive symptoms	07	33.33



**Figure1:** Prototype Giant hernia with Vanishing penile syndrome

## References

- [1] Primatesta P, Golacre M J: Inguinal hernia repair, incidence of elective and emergency surgery. *Int J Epidemiol* 1996; 25: 835 – 839
- [2] Schools I G, Van Dijkman B, Butzelaar R M, Van Geldere D, Simons M P: Inguinal hernia repair in Amsterdam region. *Hernia* 2001; 5: 37 – 40
- [3] Nordberg E M; Incidence and estimated need of caesarean section, inguinal hernia repair, and operation for strangulated hernia in rural Africa. *Br Med J* 1994; 289: 92 – 93
- [4] Hodgkinson D.J, McIlrath D. C. Scrotal reconstruction for giant inguinal hernia. *Surg. Clin. North Am.* 1984; 64 (2): 307 – 313.
- [5] Ozalp N., Akten O. A., Tez M. Giant scrotal hernia in an elderly man. *Eur J Surg Sci* 2011; 2 (1): 22 – 23.
- [6] Davey W. W. Hernia. in Davey W.W., editor, *Companion to surgery in Africa*. First edition. Edinburgh: Churchill livingstone; 1968: 280 – 294.
- [7] Ek E. W., Ek E.T., Bingham R., Wilson J., Moony B. Banting S. W. Component separation in the repair of a giant inguinoscrotal hernia. *ANZ J Surg.* 2006; 76: 950 – 952.

- [8] Vasilliadis K., Knaebel H. P., Djakovic N., Nyarangi D. X., Schmidt J., Buchler M. Challenging surgical management of a giant inguino scrotal hernia: report of a case. *Surg Today* 2010; 40 (7): 684 – 687.
- [9] EU Hernia trialists collaboration: Mesh compared with non – mesh methods of open groin hernia repair: systematic review of randomized controlled trials. *Br J Surg* 2000; 87: 854 – 859.
- [10] Baloch M., Shaikh S. M., Bhatt Y., Shaikh G.S., Deenari R. A. Moloney darn repair versus Lichtenstein mesh repair: Comparison of cost effectiveness and complications. *Medical channel* 2010; 16: 81 – 83.
- [11] Akpo E. E. Bilateral giant inguinoscrotal hernia: psychosocial issues and a new classification. *Afr Health Sci.* 2013; 13 (1): 166 – 170.
- [12] Coetzea E., Price C., Boutall A. Simple repair of a giant inguinoscrotal hernia. *Int J Surg Case Rep* 2011; 2 (3) : 32 – 35.
- [13] Tahir M., Ahamed F. U., Seenu V. Giant inguinoscrotal hernia: Case report and management principles. *Int J Surg* 2008; 6: 495 – 497.
- [14] Wietzenfeldt M. B., Brown B. T., Morillo G., Block N. L.: Scrotal kidney and ureter: an unusual hernia. *J Urol* 1980; 123: 437 – 438.
- [15] Elsaadi A. S., Alwadan A. H., Hamerna S. Approach to a giant inguinoscrotal hernia. *Hernia* 2005; 9: 277 – 279.
- [16] Serpell J.W., PolgaseA. L., Anstee E. J. Giant inguinal hernia. *ANZ J Surg* 1988; 58: 831 – 834.
- [17] Piskin T., Aydin C., Barut B., Dirican A., Kayaalp C. Preoperative progressive pneumoperitoneum for giant inguinal hernias. *Ann Saudi Med* 2010; 30 (4) :317 - 320.
- [18] El – Dessouk N. I. Preperitoneal mesh hernioplasty in giant inguinoscrotal hernias: a new technique with dual benefit in repair and abdominal rooming. *Hernia* 2002; 5: 177 – 181.
- [19] Paviz K., Amid M. D. Groin hernia repair: Open techniques. *World J Surg* 2005; 29: 1046-1051.
- [20] Mchendale F.V., Taams K.O., Kingsnorth A.N. Repair of a giant inguinoscrotal hernia. *Br J Plast Surg* 2000; 53: 525-529.

**Legend of Tables and Figure**

**Table 1: Age distribution**

**Table 2: Presenting features**