

Management of Giant Inguinal Hernia

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ABSTRACT

OBJECTIVES: To determine the frequency and evaluate the clinical presentation and management policies of giant inguinal hernia.

DESIGN: Descriptive study.

PLACE AND DURATION OF STUDY: This study was conducted in the department of surgery at Liaquat University of Medical & health Sciences Jamshoro / Hyderabad and Rajputana Hospital Hyderabad from October 2000 to September 2002 (two years)

MATERIAL AND METHODS: Male patients of all ages with giant inguinal hernia diagnosed clinically were included in the study. A uniform system of history taking, physical examination, investigations and treatment was adopted for all patients and information was recorded on pre-designed proforma.

RESULTS: All 30 patients were male with age ranging from 50 to 70 years. Average age being 54.33±5.62. Most of the patients 60% were farmers by occupation and having right sided giant inguinal hernia. Ninety percent of patients presented as an uncomplicated case with complaints of giant inguinoscrotal swelling causing difficulty in walking, sitting and difficulty in voiding. Only 3 cases (10%) were admitted with features of intestinal obstruction. Out of 30 cases, 14 (46.66%) underwent basini repair while 8 (26.66%) underwent repair with mesh and orchidectomy. Right hemicolectomy including resection of half portion of ileum with orchidectomy and mesh repair was done in 8(26.66%) patients. Two patients of 70 years died due to cardio-respiratory failure while one patient died because of renal failure. Clinically maximum number of patients (46.66%) belonged to MHL grade-I while only one patient belonged to MHL grade-IV. Postoperative complications, hematoma in 5 patients(41.6% cases) and wound infection in 4 patients (33.33%) were the most common complications followed by chest infection developed in 3 (10%). Twenty cases (66.66%) had hospital stay of 7 to 9 days while others were discharged late due to postoperative complications.

CONCLUSION: The frequency of giant inguinal hernia is more among patients of old age, labour class and from rural areas. It is common in our population because of ignorance of hernia, living in remote areas and unawareness of complications of the disease.

KEYWORDS: Inguinal hernia, giant hernia. basini repair.

INTRODUCTION

Hernia is defined as "protrusion of the viscus or part of the viscus, through an abnormal/normal opening in the walls of its containing cavity. The external abdominal hernias are commonest variety of inguinal hernia and 75% of them are of inguinal variety. The inguinal hernias that extend below the midpoint of the inner thigh in standing position are known as GIANT INGUINAL HERNIA¹. These are common in old males doing heavy work and ignoring their disease^{2,3}. In giant hernia a significant portion of the abdominal viscera is no longer within the abdominal cavity and resides within the large hernial sac which acts as a second abdomen. Groin hernias have been classified in different ways from time to time. It was introduced first by Casten in 1967²³, Halverson in 1970²⁴ Gilbert in 1986²⁵ later on Nyhus in 1993²⁶. A classification should be

simple to use and easy to remember. The existing classifications are based on anatomical findings in relation to the development of hernia, posterior floor integrity, a large internal ring and size of the hernia. However, the size of the hernia may not always be associated with severity of the hernia and it may be difficult to estimate. The outcome of hernia repair may be influenced by other factors. There may be differences in the presentation of hernia to the surgeon based on the damage done to the surrounding tissues in the inguinal canal. The management of giant inguinal hernia presents a major challenge and can lead to potentially fatal complications. Adequate preoperative preparation and close postoperative monitoring and ventilation are essential. A number of reconstructive techniques can be used to treat a giant hernia including tissue expansion⁴, component sepa-

ration⁵ and preoperative pneumoperitoneum with or without the use of synthetic mesh^{6,7}. The giant inguinal hernia is a result of carelessness on part of the patient or lack of surgical facility. Such hernia could contain hypertrophied omentum, most of the small intestine, the large intestine and even the stomach. Following a meal in such a patient, one could notice the increase in the size of hernia. After a drink one could feel the impact of the fluid entering the stomach, and may attain enormous size, bigger than human head and associated with elephantiasis of the scrotum. Giant hernia possess certain socioeconomic problems such as:

1. Participation in sports is difficult.
2. Problems with marriage.
3. Difficulty in performing certain jobs and maneuvers.
4. The psychological problems associated with the belief that such a condition is shameful.

MATERIAL AND METHODS

The Liaquat University Hospital and Rajputana Hospital Hyderabad provide specialized medical care to a large population of Sindh, both local and rural. A large number of patients coming in these hospitals belonged to poor class. This descriptive study was conducted at department of surgery in Liaquat University of Medical & Health Sciences Jamshoro / Hyderabad and Rajputana Hospital Hyderabad from October 2000 to 2002, included 30 cases of giant inguinal hernia. Our inclusion criteria was all males of any age with giant inguinal hernia diagnosed on the basis of clinical examinations. Exclusion criteria was patients with small inguinal hernia or incomplete inguinal hernia and inguinal hernia in females. Majority of patients were admitted through out-patient department and small no;(3 pts) admitted through emergency. The diagnosis was made on clinical grounds by correlating history and clinical examination. A uniform system of history taking, clinical examination and necessary investigations was adopted for all patients. Special emphasis was given to co-morbidities including ischemic heart diseases, respiratory diseases, diabetes mellitus and hypertension. In elderly patients possibilities of enlargement of prostate were ruled out. Counseling was also made regarding orchidectomy and consent was taken from all patients. All relevant data were recorded on pre-designed proforma which included details of history, examination, diagnosis according to classification, operative procedures, post-operative complications and follow-up. The classification we have done may be helpful in the management for hernia repair. We have classified giant inguinal hernia into 4 grades and labelled it Muhammad Hussain

Laghari (M.H.L) classification I to IV. For easy description we make an imaginary line from mid inguinal to upper border of patella and classified the giant inguinal hernia accordingly.

Grade-I

Giant hernia hangs down from mid inguinal point down upto upper $1/3$ rd of thigh.

Grade –II

Giant hernia hangs down from lower level of upper $1/3$ rd of thigh to the middle $1/3$ rd of thigh.

Grade-III

Giant or scrotal hernia hangs down from lower level of middle $1/3$ rd of thigh to the upper border patella

Grade-IV

Giant hernia hangs down below knee joint.

The data were analyzed in SPSS version 11. No specific statistical test was applicable in this study.

RESULTS

This study included 30 cases of giant inguinal hernia. Maximum incidence was seen in fifth and sixth decade of life. Few patients belonged to seventh decade of life (Table 1). Most patients were farmers 20 (66.6%). Other group included labourers 7 (23.6%) and drivers 3(10%). Twenty six i.e. 86.6% patients had right sided giant inguinal hernia and 4patients (13.33%) had left sided giant inguinal hernia (**Table I**). Ninety percent of patients presented as uncomplicated cases with complaints of giant inguinoscrotal swelling with difficulty in walking, sitting and difficulty in voiding. Only 3 cases (10%) were admitted in emergency with features of intestinal obstruction. Clinically maximum number of patients (46.66%) belonged to MHL grade-I, 8 patients (26.66%) belonged grade-II, 7 patients(23.33%) belonged to grade-III ,while only one patient(3.33%) belonged to MHL grade-IV (Table II). Out of 30 cases, 14 (46.66%) underwent basini repair, while 8 (26.66%) underwent repair with mesh and orchidectomy. Right hemicolectomy including resection of half portion of ileum with orchidectomy and mesh repair was done in 8 patients (26.66%) (**Table II**). Postoperative mortality rate was in 3 patients (10%) died out of 30 cases, of these 2 old pts(6.6%) above 70 years age with history of dyspnoea and chest pain died due to cardiac failure and pulmonary embolism, while one died due to renal failure. Postoperative complications are hematoma in 5 pts (41.6%) and wound infection in 4 pts (33.33%) were the most common complications followed by chest infection which developed in 3 patients (10%). Twenty cases (66.66%) had hospital stay of 7 to 9 days while others were discharged late (10 to 15 days) due to postoperative complications (**Table III**).

**TABLE I:
AGE OF PATIENTS & SITE OF HERNIA (n=30)**

	No. of Patients	Percentage
Age of Patient		
Fifth Decade	20	66.7
Sixth Decade	07	23.3
Seventh Decade	03	10
Site of Hernia		
Right Sided	26	86.7
Left Sided	04	13.33

**TABLE II:
MANAGEMENT PLAN:
According to M.H.L Classification (n=30)**

Grade	Management Plan	No. of Patients	Percentage
Grade-I	Herniorrhaphy.	14	46.67
Grade-II	Repair with mesh + orchidectomy.	08	26.67
Grade-III	Right hemicolectomy including resection of half portion of ileum + orchidectomy + mesh repair.	07	23.33
Grade-IV	Right hemicolectomy including resection of ileum + orchidectomy + mesh repair.	01	3.33

**TABLE III:
POST OPERATIVE COMPLICATIONS (n=30)**

Complications	No. of Patients	Percentage
Hematoma	05	41.6
Wound infection	04	13.33
Chest infection	03	10

DISCUSSION

Although some of the symptoms and principles of management of giant inguinoscrotal hernia are similar to those of the more commonly reported ventral Hernia, but giant inguinoscrotal hernia present additional specific problems. The size of hernia causes difficulty in walking, sitting or lying down. The scrotal skin com-

monly develops intertrigo, and may ulcerate⁸. The penis is buried in the hernia, leading to difficulty in voiding. Concomitant with the stretching of the inguinoscrotal skin, these patients develop dramatic visceroposis and tissue expansion of vascular pedicles. Ud-wadia reported a patient with a giant inguinal hernia and hematemesis due to strangulation of the stomach in the hernia¹⁰. Weitzenfeld reported hydroureteronephrosis in a patient with herniation of the kidney and ureter¹¹. The ipsilateral spermatic cord becomes greatly stretched and is prone to torsion. The testicle is often atrophic or necrotic¹¹. Reduction of giant hernia can compromise lung function, and patients may have been previously denied surgery because of the risk of respiratory compromise. Potentially fatal cardio respiratory failure & pulmonary embolism can develop following the reduction of giant hernia that have lost their 'right of domain' in the abdominal cavity, due to sudden increase in intra-abdominal pressure and elevation of the diaphragm⁶. Postoperative ileus can further increase the intra-abdominal pressure. Preoperative chest physiotherapy and postoperative mechanical ventilation play a very important role. Postoperative mechanical ventilation should not be discontinued too early. One patient was ventilated postoperatively for 48 hours, as a precaution, although it was not felt that the abdomen had been closed under excessive tension. However after extubation, the patient developed respiratory difficulty, and required ventilation for further 4 days⁸. These patients were heparinized with 5000 units of Heparin prophylactically. Reduction of intra-abdominal pressure may be achieved by debulking the abdominal contents and / or enlarging the abdominal cavity. An extensive bowel resection has been described by Serpell I, who performed a total colectomy and omentectomy in a case of giant inguinoscrotal hernia¹². Mehendale reported a case in which right hemicolectomy and small bowel resection were carried out¹³. Progressive artificially induced pneumoperitoneum has been widely used in the preoperative preparation of large ventral Hernia^{6,7} and has also been reported in the treatment of giant inguinoscrotal hernia⁹. It is more likely that this causes expansion of thin hernial sac rather than the scarred and contracted abdominal cavity⁸. Jacobsen described tissue expansion of the abdominal wall to treat large ventral and incisional Hernia⁴. Excision of the redundant scrotal skin and reconstruction of neoscrotum at the time of hernia repair have been described^{1,8}. However, it may be safer to preserve all the redundant scrotal skin to serve as a safety net. If the

repair fails in the early postoperative period or in case of severe respiratory compromise, the bowel can be temporarily returned to the scrotum. A firm compression bandage with adequate drainage must be used when the scrotum is preserved to prevent the development of hematoma or collection in the redundant scrotal tissue¹². The management of giant inguinoscrotal hernia is challenging and can lead to potentially fatal complications. Adequate preoperative preparation and close postoperative monitoring & ventilation are essential. The additional vascularized fascial support of a pedicled TFL flap over a mesh strengthens the repair, improves the blood supply and protects, the mesh and should be considered in the reconstruction of complicated large abdominal hernia. The surgical correction of giant inguinal hernia can result in normalization of life of the affected patient & requires close cooperation between the General Surgeon and Plastic Surgeon. In our study most patients were old as reported in other literature¹⁵⁻¹⁸. The right sided was in twenty six (86.6%) & left sided in four (13.33%) of cases, a similarity with western world². In present study farmers are most prone to develop the giant variety due to heavy & over work, carrying tons of weight out of their capacity. Ignoring the initial stage of hernia due to poverty, living in remote areas and unawareness of severity of problems causes late presentation to primary care centers and further delay in reaching tertiary care centers where facilities for surgical repair of such giant hernia is possible. In our study the presentation in majority of cases was uncomplicated, living in urban areas. Complicated cases came from remote areas of Sindh. The most sophisticated methods of management as mentioned in the Western literature like expansion of abdominal wall, repair with tensor fascia lata, and tensor fascia lata free grafts^{1,14,18} are not practiced in our set up, hence these types of management can not be compared with our limited study. Postoperative complications reported in our study are same as reported in the western world^{16,19-21}. Provision of ICU was available in our set up & only one patient with resection of scrotal skin was kept in ICU for 48 hours. Mortality rate was little higher in our study i.e. 10% as compared with the western literature^{15,16,22}.

CONCLUSION

The frequency of giant inguinal hernia is more among patients of old age, labour class & rural areas. It is common in our population due to ignorance of hernia, poverty, living in remote areas & unawareness of complications of disease.

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