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Inguinal hernia – a clinical study

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ABSTRACT

Introduction*: Hernias are among the oldest known afflictions of mankind and surgical repair of the inguinal hernia is the most common general surgery procedure performed.* ***Aim****: The objectives of this study are to study the incidence and different modes of presentation of inguinal hernia and its best possible management with an idea of preventing the recurrence and minimizing other post-operative complications.* ***Methods****: 137cases of inguinal hernia admitted from June 2013 to May 2014 in Gauhati Medical College and Hospital, Guwahati were selected randomly for this study. Patients below 12 years were excluded from the study. The data was analysed using standard statistical methods.* ***Results****: Incidenceof inguinal hernia was highest in the 6th decade with male to female ratio of 44.6:1. Indirect hernia was the commonest type 20.54 % were complicated inguinal hernias. Incidence was more common in those engaged in hard and strenuous work. Smoking was associated with 64.9% of patients. Lichtenstein mesh repair was done in 105 hernias, herniotomy in 6 and laparoscopy in 5 cases. Post–operatively minor complications were encountered and managed accordingly. One recurrence was noted in Bassini's repair.* ***Conclusion****: Inguinal hernia is a common condition which can affect any age group and both sexes, with a higher incidence seen in males and in the age group 51-60 years. Its incidence is more common in occupation involving strenuous work. Smoking is an important risk factor. Lichtenste in mesh repair is the standard method of repair with fewer complications and is cost effective.*

Keywords*: Direct hernia,indirect hernia,recurrent hernia, Lichtenstein mesh repair, Herniorrhaphy*

INTRODUCTION

Hernia is a common condition afflicting both men and women since time immemorial. Surgical repair of the inguinal hernia is the most common general surgery procedure performed today.[1] The word "hernia" is derived from a Latin term meaning "a rupture". Hernia is defined as an abnormal protrusion of an organ or tissue through a defect in its surrounding walls.[2] Majority of abdominal wall hernias occur in the groin approximately 75% of the total incidence.[3] Of all groin hernias, 95% are hernias of the inguinal canal. Inguinal hernias are nine times more common in men than in females.[1] Inguinal hernias may be congenital or acquired, with the latter being more common. Essentially any risk factor that either increases intra-abdominal pressure or weakens the anterior abdominal wall may lead to the formation of an inguinal hernia.[4] Complications ofinguinal hernia are irreducibility, obstruction and strangulation. In these cases, emergency surgery is required. Inguinal hernia repair has made enormous progress throughout the ages. The main reason for intervention however remained the same, continuous growth of inguinal and scrotal swelling or the risk of incarceration of the hernia content and the bad results of conservative methods like truss placement. Surgical techniques have rapidly evolved since Eduardo Bassini in 1884 proposed his first successful reconstruction of the inguinal floor. The idea was to decrease the recurrence. The success of the Bassini repair over any of its predecessors ushered in an era of tissue-based repairs. The tension free repair introduced by Irving Lichtenstein, causeda dramatic drop in the recurrence rate and became the procedure of choice.[5]

With the advent of minimally invasive surgery, inguinal hernia repair under went its most recent transformation. These methods became equally accepted for inguinal hernia, providing a technique that has decreased post-operative pain and improves recovery aspects. Further more, an array of prosthetic materials has been introduced to further lower recurrence rates and provide the patient with the utmost quality of life.[3]

Objectives:1. To study the clinical presentations of inguinal hernia.

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2. To study the various forms of presentation of inguinal hernia and their effective management.

3.To know the post-operative complications with the various methods of inguinal hernia repair.

METHODS

It was a prospective study which included all adult cases of inguinal hernia admitted in various wards in the Department of General Surgery at Gauhati Medical College and Hospital, Guwahati, between the periods from June 2013 to May 2014. Follow up and pre-operative investigations were done on O.P.D. basis.

Patients diagnosed with inguinal hernia by clinical examination were included in the study and patientsfewer than 12 years ago were excluded from the study.

RESULTS

The study is based on 137 patients with inguinal hernia who amongst them had 146 hernias. A total of 146 procedures were done which included the cases with bilateral hernias.

In our study, 134 patients were male and only 3 patients were female with a male to female ratio of 44.6:1. The highest representative group was from 51 – 60 years, with 31 patients, which constitutes 22.6% of the series. The youngest patient was 14 years and the oldest patient was 80 years old. **Table 1** shows the age wise incidence of hernia in our study.

Table 1 Age distribution of hernia

AGE (YEARS)	NO. OF PATIENTS	PERCENTAGE
< 20	11	8.02 %
21-30	28	20.4 %
31-40	20	14.6 %
41-50	28	20.4 %
51-60	31	22.6 %
61-70	16	11.7 %
71-80	3	2.2 %
Total	137	100 %

The incidence of hernia was highest among the group engaged in hard and strenuous work (agriculturist, labourers and rickshaw pullers) accounting for 76.7% of cases. **Table 2** shows the incidence of hernia in relation to different occupation.

Table 2 Incidence of hernia in relation to occupation

OCCUPATION	NO. OF CASES	PERCENTAGE
Agriculturists	53	38.7 %
Labourer	39	28.5 %
Rickshaw puller	13	9.5 %
Driver	6	4.4 %
Office worker	6	4.4 %
Student	6	4.4 %
Tailor	5	3.6 %
Electrician	4	2.9 %
Plumber	3	2.2 %
Teacher	2	1.4 %
Total	137	100 %

Swelling alone was the most common mode of presentation accounting for 58.21% of all hernias. 30(20.54%) patients presented with complicated hernia in the emergency. **Table 3** shows different modes of presentation of inguinal hernia.

Table 3 Clinical presentation of hernia

SYMPTOMS	POSITION		TOTAL	PERCENTAGE
	RIGHT	LEFT		
Swelling	56	29	85	58.21 %
Pain	2	0	2	1.36 %
Pain And Swelling	20	9	29	19.86 %
Irreducibility	14	3	17	11.64 %
Features Of Obstruction	8	1	9	6.16 %
Features Of Strangulation	3	1	4	2.73 %
Total	104	44	146	100

Smoking was associated with majority of cases accounting for 89(64.9%) out of 137 patients. Incidence of hernia was more common in the patients who undertook strenuous work accounting for 62.7% alone and along with other factors it constitutes 74.3 %. Other precipitating factors were constipation, COPD and Benign Prostatic Hyperplasia. **Table 4** shows the various precipitating factors associated with inguinal hernia.

Table 4 Precipitating factors associated with inguinal hernia

FACTORS	FREQUENCY	PERCENTAGE
Strenuous work	86	62.7%
COPD	3	2.2%
Constipation	6	4.4%
BPH	4	2.9%
COPD and strenuous work	5	3.6%
Constipation and strenuous work	6	4.4%
BPH and strenuous work	5	3.6%
Delivery	2	1.4%
None	20	14.6%
Total	**137**	**100%**

Indirect inguinal hernia was the most common type seen accounting for 118(80.82 %) cases with the incidence on right side being more common than the left. **Table 5** shows the incidence of different types of hernia in relation to side.

Table 5 Incidence of different types of hernia in relation to side

TYPE	FREQUENCY		TOTAL	PERCENTAGE
	RIGHT	LEFT		
Indirect	86	32	118	80.82 %
Direct	14	10	24	16.43 %
Recurrent	1	0	1	0.68 %
Pantaloon	2	1	3	2.05 %
TOTAL	103	43	146	100 %

Spinal an anesthesia was most commonly used accounting for 53.3% of cases. **Fig**. **1** shows the type of anesthesia used.

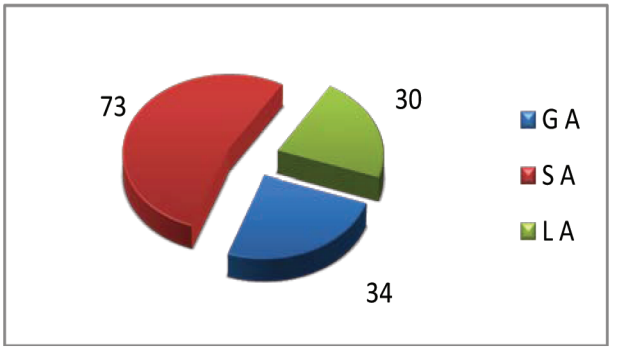

Figure 1 Anesthesia used

The method of repair was largely determined by the individual surgeon's preference. Lichtenstein tension free mesh repair was the preferred method of repair. Out of 107 patients with uncomplicated hernias, 98 cases presented with unilateral inguinal hernias and 87 of these patients underwent Lichtenstein mesh repair while herniotomy was done in 6 patients and 5 patients under went laparoscopic procedure (TAPP) and 9 cases presented with bilateral inguinal hernias and all of them under went Lichtenstein mesh repair on both sides. Herniorrhaphy was done for all the 30 cases of complicated inguinal hernias. **Fig**. **2** shows the various surgical procedures employed.

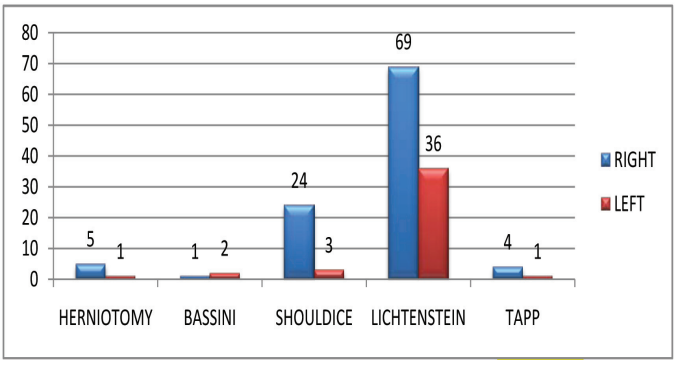

Figure 2 Bar diagram showing the various surgical procedures

10 patients of Herniorrhaphy and 11 patient of Lichtenstein group had severe pain post operatively. 1 patient of Herniorrhaphy, 6 patients of Lichtenstein and 1 patient of Laparoscopy group had pain free post op period. Other post-operative complications associated with the operative procedure are shown in **Table 6**.

Table 6 Post-operative complications

COMPLICATIONS	NO. OF PATIENTS
Urinary retention	2
Respiratory complication	3
Wound infection	7
Hematoma	2
Seroma	4
Chronic groin pain	5
Recurrence	1

Hospital stay ranges from 5-18 days and the mean hospital stay was 5.5 days. The longest stay was 18 days in a case of strangulated hernia with wound infection. The minimum stay was 3 days in a patient with laparoscopic repair. All the patients, at the time of discharge were advised to attend the surgery outdoor at 3 weeks, 6 weeks and 6 months after discharge.

DISSCUSION

Inguinal hernia is one of the commonest problems of mankind. Since the period of Hippocrates (4thcentury BC) the disease has been known and various palliative treatment methods were adopted. Innumerable procedures have been described for this common disease but no one is exempted from complications hence surgery on hernia is still a challenging subject. Watson said "in the entire history of surgery, no subject has been as controversial as the repair of groin hernias".[6]

In the present study, hernia was found to be more common in males as compared to females. Moreover smoking was found to be an important risk factor along with occupation involving strenuous work. Many risk factors like smoking which may cause chronic cough, obstructive urinary symptoms due to prostatomegaly, straining during defecation and chronic constipation lead to hernia formation, and recurrence rate of hernia increases if these risk factors are not adequately controlled prior to surgical correction of hernia. Also, a stronger repair is indicated in presence of such risk factors.

Indirect inguinal hernia was the most common variety of inguinal hernia with right sided hernia being more common than the left side.

Hernia repair can be done in spinal, general or local anaesthesia. Local anaesthesia is more preferable for patients with co-morbid conditions not fit for spinal or general anaesthesia. Although there are number of technique for repair of hernia, Lichtenstein tension free mesh repair of hernia is the most preferred method. It offers the effective repair that overcomes many of the problems. It is relatively easier and less technically demanding than other anatomical repairs like Bassini's/Should ice's repairs and easy to learn. Median length of operation is shorter than the other techniques. Infection rate in mesh repair is comparatively less compared to tissue repair with less hospital stay and early return to work. Compared to conventional tissue repair, the mesh repair had relatively less complications in the present study. Tissue repair are usually helpful in complicated cases like strangulation where chances of infection with prosthetic mesh is more Lichtenste in tension-free mesh repair has become the standard method of hernia repair and is easier to learn that take less time and results in fewer recurrences.

Laparoscopic repair for inguinal hernia provides less post-operative pain, less hospital stay and good cosmesis but is technically demanding procedure with longer learning curve and is expensive as compared to conventional mesh repair.

CONCLUSION

Inguinal hernia is a common condition which can affect any group and both sexes, with a higher incidence seen in age group 51-60 years and in males. Incidence of inguinal hernia is more common

in occupation involving hard and strenuous work and is frequently associated with conditions that cause persistent increase in intra-abdominal pressure. Smoking is found to be an important risk factor associated with inguinal hernia. Surgery is the mainstay in treatment of inguinal hernias. Correction of precipitating factors is important for successful outcome. Lichtenstein mesh repair is the commonest procedure under taken. An ideal hernia repair should be durable, with low level of morbidity, allow rapid return to work orrecreational pursuits and should be cost effective and with low recurrence rate.

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