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Corresponding Author
K.N. Sudheer,
Department of General Surgery, Siddaganga Medical College and Research Institute, Tumkur, Karnataka, India

Author Designation
[1]Assistant Professor
[2]Professor and Head

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A Study on Clinical Profile of Patients with Inguinal Hernia Admitted at a Tertiary Care Hospital for Surgery

[1]K.N. Sudheer and [2]N. Chandrashekar
[1,2]Department of General Surgery, Siddaganga Medical College and Research Institute, Tumkur, Karnataka, India

ABSTRACT
Inguinal hernias constitute the most common form of abdominal wall hernias. Inguinal hernia repair is one of the commonly performed general surgeries among both adults and children accounting for more than 95% of all groin hernia repairs. Collective Indian data are limited and in few of the Indian studies, the prevalence of inguinal hernias among males in a tertiary care setting in India ranged from 88.0-91.0%. A cross sectional comparative study was conducted among 50 male patients admitted in surgical wards for elective Surgery who were willing to undergo an Open and laparoscopic repair with proven unilateral inguinal hernia after considering the inclusion and exclusion criteria and estimating the sample size. After obtaining the written informed consent the patients were assigned randomly for both the groups. The mean age of participants in open mesh repair group and TEP group were 45.24±10.05 years and 42.00 ±10.92 years respectively. The mean duration of surgery among the study participants in TEP (49.60±3.62mins) group was significantly higher compared to open mesh repair (45.96±4.63mins) group (t=-3.097, P=0.003).

INTRODUCTION

Hernia' derived from a Latin word which means "a rupture". Abdominal wall hernias accounts for 15%-18% of all surgical procedures[1,2]. More than 20 million hernias are operated worldwide, per year[3]. In USA and United Kingdom more than 7,50,000 hernias and 1,25,000 hernias are operated per year[4]. The incidence of abdominal wall hernia varies in different countries from 100-300/100000 per year[3]. Inguinal hernias constitute the most common form of abdominal wall hernias. The incidence of inguinal hernia remains indefinite., however, nearly about 500,000 cases come to medical attention each year. Twenty or more years ago, international and US surveys were conducted, wherein, the non-surgically treated inguinal hernia prevailed among 5% of men and similarly, same number of men had history of hernia repair[5]. Protrusion of abdominal cavity and its contents through the inguinal canal is called an 'Inguinal hernia'. The lifetime risk of inguinal hernia is estimated to be 27% and 3% for men and women respectively[6]. Inguinal hernia repair is one of the commonly performed general surgeries among both adults and children accounting for more than 95% of all groin hernia repairs[7]. Collective Indian data are limited[8]. However in few of the Indian studies, the prevalence of inguinal hernias among males in a tertiary care setting in India ranged from 88.0-91.0%[9-11]. In an Indian study conducted by Sayanna S et al., found that the proportion of males were 87.88% ~ 88.0%[9]. Incidences of inguinal hernia both primary and recurrent were found to be roughly 89% in males as reported in a study by Basu[10] 91.8% of males constituted of total patients of inguinal hernia in a study by Rao[11]. Inguinal hernias can be congenital or acquired. The proposed and well known risk factors for inguinal hernias are increasing age, increased abdominal pressure, pre-existing weakness of abdominal muscles, lifting of heavy weights, straining during defecation, obesity, pregnancy etc. Several hypotheses have been proposed regarding the aetiology of inguinal hernia., however, large-scale data on the occurrence of inguinal hernia are necessary for further understanding the patho-physiology for the development of inguinal hernia[8,9]. Inguinal hernias are very common-every fourth male develops a hernia during his life span. Anatomically, inguinal hernias are classified as indirect, direct or combined (pantaloon hernias). Inguinal hernias may be asymptomatic or cause bothersome bulging and pain. Minimally symptomatic inguinal hernias may be safely observed, with a very low long-term risk of serious complications (strangulation). Indirect inguinal hernias are the most common type in both males and females. This type of hernia always has a true hernia sac since it results from a failure of peritoneal extension (the precesses vaginalis in males and the corresponding canal of Nuck in females) to obliterate after embryological descent of the testicle into the scrotum, or the round ligament into the labium majus. The right testicle descends last, and hence indirect hernias are more common on the right[12].

MATERIALS AND METHODS

Study Design: Cross-sectional, comparative study.

Sample Size: 50 cases.

Study Subjects: 50 males based on inclusion and exclusion criteria admitted in surgical wards for elective Surgery with proven unilateral inguinal hernia were considered for the study.

Inclusion Criteria:

- Male Patients.
- Aged between 20-60 years of age.
- Proven cases of unilateral inguinal hernia by clinical examination and abdominal ultrasound.
- Patients fit for hernia repair under anaesthesia.
- Patients willing to give consent.

Exclusion Criteria:

- Patients with recurrent hernia.
- Hernia with complications. (Irreducible hernia, strangulated hernia).
- Patients associated with co morbid diseases.

RESULTS AND DISCUSSIONS

Table 1: Age-Wise Distribution of the Study Subjects According to Type of Surgery for Inguinal Hernia

Age group in years	Open Lichtenstein Mesh Repair	Total Extra-peritoneal Repair	Total
≤30	02 (8.0)	04 (16.0)	**06(12.0)**
31-40	07 (28.0)	08 (32.0)	**15 (30.0)**
41-50	08 (32.0)	08 (32.0)	**16 (32.0)**
51-60	08 (32.0)	05 (20.0)	**13 (26.0)**
Total	**25 (100.0)**	**25 (100.0)**	**50 (100.0)**

Figures in parenthesis indicate percentage. In the present study, out of 50 study subjects, majority i.e., 64.0% of the study subjects in Open mesh repair were between 41-60 yrs age group and in Total Extra Peritoneal repair (TEP), majority i.e., 64.0% of the study subjects were in 31-50 yrs age group. The mean age of the study subjects was 43.62±10.51 years with a range from 20-60 years. The mean age of participants in open mesh repair group and TEP group were 45.24±10.05 years and 42.00±10.92 years respectively. All the subjects were males and are equally represented in both the groups. Among the different age groups, all the study participants, were equally distributed except for ≤30 yrs age group, wherein, majority were in the total extra-peritoneal group.

Table 2: Distribution of Study Subjects According to Diagnosis

Diagnosis	Open Lichtenstein Mesh Repair	Total Extra-peritoneal Repair	Total
Left Direct Inguinal Hernia	03 (12.0)	00 (0.0)	**03 (6.0)**
Left Indirect Inguinal Hernia	04 (16.0)	09 (36.0)	**13 (26.0)**
Right Direct Inguinal Hernia	04 (16.0)	06 (24.0)	**10 (20.0)**
Right Indirect Inguinal Hernia	14 (56.0)	10 (40.0)	**24 (48.0)**
Total	**25 (100.0)**	**25 (100.0)**	**50 (100.0)**

In the present study, out of 50 study subjects, majority i.e., 56.0% of the study subjects in Open mesh repair were having right indirect inguinal hernia and in Total Extra Peritoneal repair (TEP), majority i.e., 40.0% of the study subjects were also having right indirect inguinal hernia. All the subjects in the open type were given Spinal anaesthesia and all the subjects in TEP were given General Anaesthesia.

Table 3: Association of Other Variables Among the Two Different Types of Hernia Repairs

Other variables	Type of Hernial Repair		
	Open Lichtenstein Mesh Repair (Row %)	Total Extra-peritoneal Repair (Row %)	Fisher's Exact (P-Value)
1.	**Age**		
≤43 yrs	10 (40.0)	15 (60.0)	**2.0**
> 43 yrs	15 (60.0)	10 (40.0)	**(0.26)**
2.	**Type of Hernia**		
Direct Inguinal Hernia	07 (53.8)	06 (46.2)	**0.10**
Indirect Inguinal Hernia	18 (48.6)	19 (51.4)	**(0.75)**

Among the study subjects with inguinal hernia who underwent Open Lichtenstein Mesh Repair, majority i.e., 15/25, 60.0% were in >43 yrs and in the other group, majority i.e., 15/25, 60.0% were in ≤43 yrs, however age was not significantly associated with the type of hernial repair conducted (P>0.05). Among the study subjects with inguinal hernia who underwent Open Lichtenstein Mesh Repair and TEP repair, majority i.e., 18/25, 72.0% and 19/25, 76.0% had indirect inguinal hernia respectively. However, the type of hernia was not significantly associated with the type of surgery conducted (P>0.05).

In the present study, out of 50 study subjects, majority i.e., 88.0% of the study subjects in were in the age group of 31-60 yrs age group which is similar to study conducted by Sangwan M *et al.*, with most common age group between 40-70 years[13]. The mean age of participants in open mesh repair group and TEP group were 45.24±10.05 years and 42.00±10.92 years respectively in current study whereas according to Neumayer L *et al.,* the mean age of the patients in open mesh repair group and laparoscopic repair were 58.4±12.7 years and 58.6±12.8 years respectively[14]. Age was not significantly associated with the type of hernial repair conducted (P>0.05) which is similar to findings of Hamza Y *et al.*, who noted no significant difference in age between the two groups[15]. Indirect hernia is twice as common as direct hernia. Inguinal hernias are more common on right side[8]. In the present study, out of 50 study subjects, majority i.e., 68.0% of the study subjects had right sided hernia and 74.0% had indirect inguinal hernia, however, the type of hernia was not significantly associated with the type of surgery conducted (P>0.05). These findings are comparable to the observations of Momin RS *et al.,* who noted right sided Inguinal Hernia in 72.0%, Indirect Inguinal Hernia in 82%[16]. Virtually all anaesthetic methods have been used in inguinal hernia repairs[14]. General inhalation anaesthesia is still most common method in most institution and always the method for endoscopic/laparoscopic repairs, whereas local anaesthesia is more frequently used by surgeons with specific interest to herniology. However, local and regional anaesthesia has certain advantages for patients. These two techniques have the advantage of pre-emptive analgesia and cause less oxidative stress. Local anaesthesia has been found to be related to shorter time spent in the operating room, lower incidence of nausea and urinary retention and more satisfaction. Patients received local or regional anaesthesia need less postoperative analgesics and length of hospital stay are less than general anaesthesia cases. However, local anaesthesia has been found to be superior to regional anaesthesia. Spinal anaesthesia causes urinary retention frequently[12]. In the present study, all the subjects in the open type were given Spinal anaesthesia and all the subjects in TEP were given General Anaesthesia which is similar to the study by Momin[16].

CONCLUSION

The mean age of the study subjects was 43.62±10.51 years with a range from 20-60 years. The mean age of participants in open mesh repair group and TEP group were 45.24±10.05 years and 42.00±10.92 years respectively. All the subjects were males and are equally represented in both the groups. Among the different age groups, all the study participants were equally distributed except for ≤30 yrs age group, wherein, majority were in the total extra-peritoneal group.

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