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A Prospective Observational Study of Clinical Profile of Patients with Ventral Hernia

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Abstract **Original Research Article**

An inguinal hernia occurs when tissue, such as part of the intestine, protrudes through a weak spot in the abdominal muscles. The resulting bulge can be painful, especially when you cough, bend over or lift a heavy object. However, many hernias do not cause pain. This prospective observational study was conducted in the Department of Surgery, Patuakhali Medical College Hospital, Patuakhali, Bangladesh from January to June 2023. Total 50 cases included in our study. 25 consecutive adult patients with age above 18 years who underwent laparoscopic and 25 consecutive adult patients with age above 18 years who underwent open mesh repair of ventral hernias in Department of Surgery. Detailed history was recorded in all cases. Total 50 cases included in our study. 25 consecutive adult patients with age above 18 years who underwent laparoscopic and 25 consecutive adult patients with age above 18 years who underwent open mesh repair of ventral hernias in mean age of the subjects in open surgical group was 45.8±11 and laparoscopy were 46.8±12. There was no significant difference between the two groups with respect to age of the subjects (P value – 0.738). In the study who underwent open repair it was observed that, in open group 52% of subjects had paraumbilical hernia, 28 % had umbilical hernia, 12% had incisional hernia and 4% had Epigastric hernia. In laparoscopic group 40% had Paraumbilical hernia, 28% had Umbilical hernia, 28% had Incisional hernia and 4% had Epigastric hernia. This observation was statistically not significant (p value – 0.592). The diagnosis and management of inguinal hernia is best done with an interprofessional team. The majority of patients with an inguinal hernia first present to the nurse practitioner and primary care provider. These clinicians should be able to work up a patient with an inguinal hernia and make the appropriate referral to a surgeon.

Keywords: Ventral hernia, paraumbilical hernia, umbilical hernia.

INTRODUCTION

An inguinal hernia occurs when tissue, such as part of the intestine, protrudes through a weak spot in the abdominal muscles. The resulting bulge can be painful, especially when you cough, bend over or lift a heavy object. However, many hernias do not cause pain [1]. Hernias are among the oldest surgical challenges which have confronted the surgical community. The word hernia is derived from the Greek word hernias which means a bud or an offshoot, a budding or a bulge. The abdominal wall is a complex musculoaponeurotic structure that is attached to the vertebral column posteriorly, the ribs superiorly, bones of the pelvis inferiorly. The abdominal wall protects and restrains the abdominal viscera, and its musculature acts indirectly to flex the vertebral column. The integrity of the abdominal wall is essential to the prevention of hernias, whether congenital, acquired or iatrogenic [2]. Hernien, Schumpelick described a classification that divided incisional hernias into five classes. If the hernia extends beyond the abdominal cavity and is thus visible on the surface of the body, it is defined as an external hernia. If the outpouching is limited to peritoneal pockets, it is known as an internal hernia. An intermediate position is taken by the interparietal hernias of the abdominal wall. The size of the defect, the clinical aspect of the hernia in lying and standing position, the localization of the incision and the number of previous repairs were used for this classification. Korenkov et al., reported on the results of an expert meeting on classification and surgical treatment of incisional hernia, but no detailed classification proposal resulted from this meeting [3]. An additional parameter to the Chevrel classification was proposed by Ammaturo and Bassi. The ratio between the anterior abdominal wall surface and the wall defect

surface a predictor for a strong abdominal wall tension when closing the defect, with possible abdominal compartment syndrome development, and this might influence the choice of surgical technique [4]. They usually present as a swelling over the abdomen associated with or without pain and rarely with complications like strangulation or incarceration. The incisional hernia is a common long-term complication of abdominal surgeries and the incidence ranges from 2% to 20% [5,6]. The overall incidence of incisional hernia is slightly higher in the midline laparotomy incision as compared to the transverse incision [6]. Less data is available as to its natural history and hence surgeons prefer surgical treatment as there are few prospective cohort studies available [7].

METHODOLOGY

This prospective observational study was conducted in the Department of Surgery, Patuakhali Medical College Hospital, Patuakhali, Bangladesh from January to June 2023.Total 50 cases included in our study. 25 consecutive adult patients with age above 18 years who underwent laparoscopic and 25 consecutive adult patients with age above 18 years who underwent open mesh repair of ventral hernias in Department of Surgery. Detailed history was recorded in all cases. This includes age, sex, weight of the patients. Presence of predisposing factors like obesity and particulars regarding diseases like hypertension, diabetes and other complications were elicited and treatment for the same was undertaken.

Inclusion Criteria

- All adult patients above 18 years presenting with ventral hernias who are managed for ventral hernia in our hospital with mesh repair are included after taking a written consent.

Exclusion criteria

- Children less than 18 years.
- Complicated. (Obstructed/strangulated/incarcerated) ventra
- Pregnancy with ventral hernia.
- Ventral hernia repairs combined with other procedures.
- Laparoscopic repairs converted to open repair.
- Patients Unfit for Surgery.

A clinical diagnosis was made, and patients with medical diseases received appropriate treatment to achieve near-normal parameters before surgery. Spinal and general anesthesia were used in selected patients. A single dose of broad-spectrum antibiotics was administered at induction of anesthesia, and the same dose was given postoperatively for 3–5 days. Patients underwent suture or mesh repair at the surgeon's discretion. Preoperative treatment included correction of anemia, attempting weight loss for obesity, improving nutritional status, treating respiratory infections (if any), smoking/alcohol abstinence (if any), and advice on breathing exercises. The patients were admitted for surgery after giving written informed consent. Findings were then recorded and patients were closely monitored for pain, bleeding, paralytic ileus, seroma and hematoma, wound infection and large wounds. Pain was assessed using a verbal and graphic rating scale. Patients were discharged when well and were asked to return for regular follow-up visits at 15 days, 1 month, 3 months, 6 months, 1 year and 2 years. Different patients were followed for different periods and many patients were lost to follow-up. The patients were advised to return to pre-hernia lifestyle except lifting heavy weights. All were followed-up for postoperative pain, interference with activities of daily living, use of analgesics and recurrence. Statistical analysis: The data was entered in proforma, tabulated, and analyzed with SPSS Statistics for Windows, Version 21.0.

RESULTS

Total 50 cases included in our study. 25 consecutive adult patients with age above 18 years who underwent laparoscopic and 25 consecutive adult patients with age above 18 years who underwent open mesh repair of ventral hernias in mean age of the subjects in open surgical group was 45.8±11 and laparoscopy were 46.8±12. There was no significant difference between the two groups with respect to age of the subjects (P value – 0.738).

Table 1: Comparison of mean age between open and laparoscopic surgery group (n=50)

Variables	Open(n=25) Mean (SD)	Laparoscopic(n=25) Mean (SD)	p-value
Age (in years)	45.8(11.0)	46.8(12.0)	0.738

Table 2: Association between gender and surgery (n = 50)

Gender	Open(n=25)	Laparoscopic(n=25)	p-value
Male	6 (24)	9 (36)	0.260
Female	19 (76)	16 (64)	

In the study it was observed that majority of subjects in both the groups were female (76% open and 64% laparoscopic). There was no significant difference between two groups with respect to sex distribution (p value 0.260).

Table 3: Association between complaints and surgery (n = 50)

Complaints	Open(n=25)	Laparoscopic(n=25)	P Value
Lump	17 (68)	13(52)	0.513
Pain	2 (8)	2(8)	
Lump+Pain	6 (24)	10(40)	

In the study it was observed that majority of subjects in both the groups presented with complaints of lump (open - 68% and laparoscopy - 52%). There was no significant difference between two groups with respect to presenting complaints (p value 0.513).

Table 4: Association between type of hernia and surgery (n = 50)

Type of Hernia	Open(n=25)	Laparoscopic(n=25)	P Value
Umbilical	8 (32)	8 (32)	0.592
Paraumbilical	13(52)	10 (40)	
Incisional	3(12)	6 (24)	
Epigastric	1(4)	1(4)	

In the study who underwent open repair it was observed that, in open group 52% of subjects had paraumbilical hernia, 32% had umbilical hernia, 12% had incisional hernia and 4% had Epigastric hernia. In laparoscopic group 40% had Paraumbilical hernia, 32% had Umbilical hernia, 24% had Incisional hernia and 4% had Epigastric hernia. This observation was statistically not significant (p value – 0.592).

DISCUSSION

Inguinal hernias are one of the most common reasons primary care patients require surgical referral. A medical history and physical exam are usually sufficient to make the diagnosis. Constipation, with "narrow" or "thin" stools. A lump or bump in the abdomen at or near the site of a previous incision. The patient may be asked to stand and cough, which tends to make the rupture more noticeable. Nausea, vomiting, fever, elevated heart rate. There is pain in the abdomen, especially around the bulge. Differential diagnoses for an inguinal bulge include inguinal hernia, lymphadenopathy, lymphoma, metastatic neoplasm, hydrocele, epididymitis, testicular torsion, abscess, hematoma, femoral aneurysm, and/or cryptorchidism. Viscera such as the intestines or stomach may also protrude into the hernia sac. Whether a hernia causes problems depends on its location and size. The most common types of inguinal hernias are: Inguinal hernia: Occurs in a weak area above the inguinal ligament, located above the groin. Total 50 cases included in our study. 25 consecutive adult patients with age above 18 years who underwent laparoscopic and 25 consecutive adult patients with age above 18 years who underwent open mesh repair of ventral hernias in mean age of the subjects in open surgical group was 45.8±11 and laparoscopy were 46.8±12. There was no significant difference between the two groups with respect to age of the subjects (P value – 0.738). In Lomanto et al., [8] study there was no statistically significant difference between the two groups with respect to age of patients, ranging from 30 to 80 years with mean of 55.25 years. In the study conducted by Misra et al., [9] the mean age of the patients were 45.2 and 45.96 in open and laparoscopic groups respectively. Also in study by Mc Greevy et al., [10] the mean age among two participating groups were comparable. Similarly mean age of subjects in open and laparoscopic groups were 59.6 and 61.2 respectively in Itani et al., [11] Study. In the present study majority of subjects were females, 19 (76%) in open and 16 (64%) in laparoscopic group. Study conducted by Itani et al., [11] had males as majority with 91% males in each group. 82% were male and 18% were female in Lomanto et al., [8] study. Similarly, gender distribution was comparable between the 2 groups in Mc Greevy et al., [10] and around 80% of subjects in both groups were females according to Misra et al., [9] In the study it was observed that majority of subjects in both the groups presented with complaints of lump (open - 68% and laparoscopy - 52%). There was no significant difference between two groups with respect to presenting complaints (p value 0.513). In the study who underwent open repair it was observed that, in open group 52% of subjects had paraumbilical hernia, 32% had umbilical hernia, 12% had incisional hernia and 4% had Epigastric hernia. In laparoscopic group 40% had Paraumbilical hernia, 32% had Umbilical hernia, 24% had Incisional hernia and 4% had Epigastric hernia. This observation was statistically not significant (p value – 0.592). The knowledgeable and experienced board-certified surgical specialists at Core Surgical use every advanced imaging tool at their disposal to aid in the diagnosis of occult or hidden hernias. This can include ultrasound, CT scans and MRI imaging technology. Overall, inguinal hernias are associated with a good prognosis. It has generally been accepted that all inguinal hernias should be repaired; although, this idea has recently come into question. Recent articles suggest that watchful waiting is a safe and acceptable option for men in asymptomatic or minimally symptomatic cases. Watchful waiting is considered an acceptable treatment option as the risk of incarceration and strangulation in the studies was minimal. It is generally accepted that all hernia patients who are medically cleared for surgery, as well as patients with symptomatic inguinal hernia, should be offered elective surgery. Femoral hernias should always be repaired as they have a high risk of incarceration. The

risk of complication is increased in incarcerated, strangulated and recurrent hernias.

CONCLUSION

Diagnosis and treatment of inguinal hernias is best done by a multidisciplinary team. Most patients with inguinal hernias are first seen by a nurse or family doctor. These doctors should be able to examine patients with inguinal hernias and refer them to a surgeon if necessary. The study found that there was no statistically significant difference between the two groups in terms of the subjects' age. The mean age of subjects in the open surgery and laparoscopic groups was 45.8 ± 11 and 46.8 ± 12 years, respectively (P value -0.738). In this study, it was observed that the gender distribution between the two groups was not significant, with the majority of subjects in both groups being female (76% open surgery, 64% laparoscopic surgery).

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