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Inguinal Hernia in Zawia Teaching Hospital

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Abstract: studying hernia as a formal description started in the fifteenth century. About 75% of abdominal wall hernias occur in the groin, indirect inguinal hernias are more common than direct inguinal hernias and femoral hernias. Methods: from December 2008 to June 2012, all patients admitted at Zawia Teaching Hospital were prospectively analyzed clinically and the type of operations which have been done ranged from herniotomy, heniorrhaphy, hernioplasty to transabdominal preperitoneal laparoscopic repair. Results: 221 patients admitted with inguinal hernias, 189 patients have been operated on. Herniotomies represent 25.3% of the operations, Herniorrhaphies represent 30.6 % of the operations and hernioplasties and TAPP represent 43.8%. Conclusion: herniotomy is the standard repair for children, hernioplasty is an easy repair with less postoperative complications and TAPP is associated with less postoperative pain, early return to work, less recurrence rate and can be performed for primary and secondary inguinal hernias.

Introduction

Studying hernia as a formal description started in the fifteenth century (1). About 75% of abdominal wall hernias occur in the groin. Indirect inguinal hernias are more common than direct inguinal and femoral hernias. They are more common on the right side and more common in males as compared to females (1). Repair of inguinal hernias are common surgical procedures (2). The surgical treatment for inguinal hernia were recorded between 330 – 250 BC (3).

In 1881, a French surgeon, Lucas championnier performed high ligation of an indirect inguinal hernia sac at the internal ring with primary closure of the wound (1). In 1844 - 1924, Eduardo Bassini incorporates antisepsis and anesthesia and in addition to the high ligation of the hernia sac he reconstructs the inguinal floor (1). Lotheissen, McVay, Halsted and others described modifications of Bassinis repair to reduce the recurrence rate and to prevent complications (1). But 15% recurrence rates reported for such operations depending on population based studies (1, 2). The Shouldice repaire was considered to be the gold standard operation at the start of 1990, with low recurrence rate 1 - 4% (2, 4).

Because of a high recurrence rate after conventional surgery, the concept of prosthetic tension-free hernioplasty emerged (4). Lichtenstien used a mesh prosthesis to bridge the hernia defect and to be a tension free repaire (1). Lichtenstien repaire found to be a simple and safe method with low recurrence rate (5). In 1990s, mesh hernioplasties become widely used (3, 6, 7). Laparoscopic inguinal herniorrhaphy was introduced in the late 1980s and early 1990s. Ger in 1982 pointed out to its potential advantages (1). The laparoscopic approach has less postoperative pain (1 - 3), short hospital stays (3), less chronic pain (2, 3), increased patient satisfaction (3), less recurrence rate (1), shorter convalesce (2) and earlier return to work (2).

Laparoscopic hernia repair techniques showed a possible advantage of totally extraperiton-eal (TEP) approach over the transabdominal preperitoneal (TAPP) approach with lower recurrence rate and fewer operative complications (5). There is an ongoing debate about the best approach to inguinal hernia repair, all of which have their advocates (8). Early results from a randomized study comparing

TAPP technique with Shouldice repair showed a superiority of laparoscopic operation in terms of less postoperative pain, shorter sick leave and shorter time to return to normal physical activities (5). Surgery for recurrent inguinal hernias account for 8 - 17% of all inguinal hernia repairs (9, 10) and still they are representing major challenges in abdominal wall surgery (10). Outcome assessment after repair of inguinal hernia includes morbidity, recurrence, and length of convalescence (11) acute and chronic pain (11-14). Chronic inguinal neuralgia is one of the most frequent complications (14, 15) such complications are less with laparoscopic hernia repair.

Materials and methods

Patients: From 2008 December to 2012 June, all patients admitted with inguinal hernias at Zawia Teaching Hospital was prospectively analyzed including primary and recurrent inguinal hernias. The clinical and demographic data collected include age, gender, date of admission and discharge, body mass index, previous illnesses, side of the hernias, whether the hernia is simple or complicated, operative type of inguinal hernia, the type of operation which has been done, the post operative stay in hospital and the complications which has been occurred. Overweight was defined as a body mass index greater than 25 kg/m^2 and less than 30 kg/m^2, but obesity was defined as a body mass index greater than 30 kg/m^2. A broad spectrum antibiotic usually cephalosporin derivative was administered in most cases.

Patients were positioned in supine position on the operating room table and in terendelenburg position in case of laparoscopic repair (Trans-abdominal preperitoneal repair TAPP). In transabdominal preperitoneal repair the procedure performed under general anaesthesia the hernia approached by a 10 mm camera trocar and two 5 mm manipulating trocars. The abdomen was entered by means of a closed technique to establish a pneumoperitoneum.

A 0-degree 10 mm laparoscope was used. A proline mesh placed in the preperitoneal space to repair all hernias laparoscopically Figures 1 and 2.

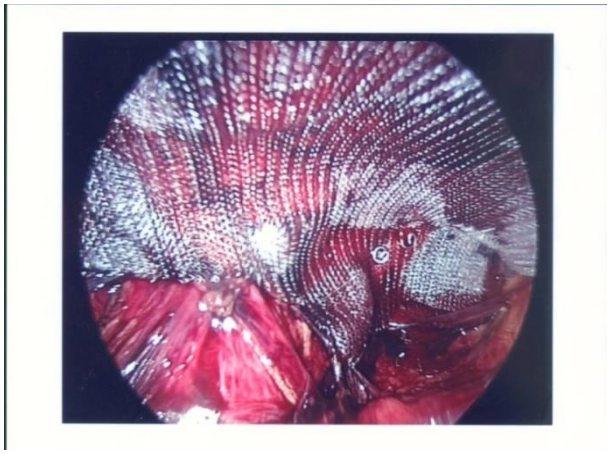

Figure 1: Fixed proline mesh in the preperitoneal space

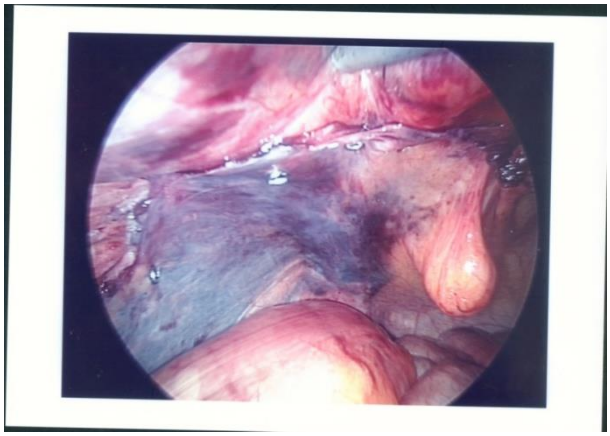

Figure 2: Closure of the peritoneal layer after proline mesh placement

Regular analgesia used to patients by using paracetamol with voltarine and pethedine depending upon the severity of the pain.

Results

During the 43 months, 221 patients who have inguinal hernias were enrolled in the study with various age distributions ranging from the first to ninth decade. The highest distribution was in the first and fifth decade (Table 1).

Decade	Numbers of patients	Percentage
0-10 yr	42	19
>10-20 yr	15	6.7
>20-30 yr	24	10.8
>30-40 yr	26	11.7
>40-50 yr	36	16.2
>50-60 yr	15	6.7
>60-70 yr	26	11.7
>70-80 yr	28	12.6
>80-90 yr	9	4
Total	221	100

Table 1: Age distribution of the patients.

The involved patients were 194 men (87.7%) and 27 women (12.2%) figure 3 shows such demographic data and indicated that higher incidence of inguinal hernia in male as compared in females, figure 3.

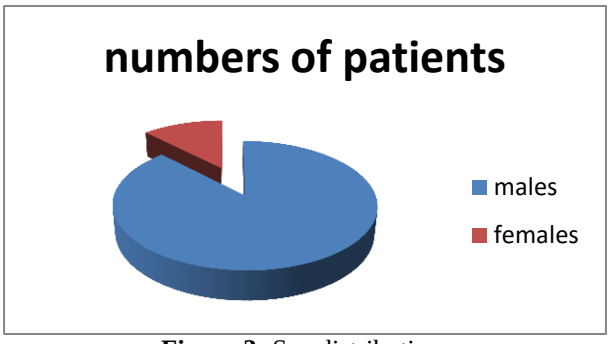

Figure 3: Sex distribution

There were 27 overweight patients (12.2%) and 8 obese patients (3.6%), Table 2.

Patient	BMI >25	BMI >30	Total number
Number	27	8	35
Percentage	12.2	3.6	15.8

Table 2: Overweight and obese patients

For various reasons 35 (15.8%) patients did not have surgery, among these reasons were coexisting morbidities as shown in Table 3. During presentation of the patients, there were reducible hernias, irreducible hernias, obstructed hernias and strangulated hernias, 196 patients, 20 patients, 3 patients and 2 patients respectively (Table 4).

Table 3: Coexisting illnesses

Type	Number of patient	Percentage
Reducible hernia	196	88.6

Irreducible hernia	20	Complicated hernias	9	Percentage of complicated hernias
Obstructed hernia	3		1.3	

Disease	Number of patients	Percentage
Respiratory disease	9	4
Cardiovascular disease	13	5.8
Diabetes mellitus	3	1.3
Disc prolapse	3	1.3
Urologic disease	1	0.4
Total number	29	13.1

Strangulated hernia	2		0.9	
Total number	221		100	

Table 4: Type of hernia during presentation

Among these patients, the majority were having right inguinal hernias in 128 patients (57.9%) whereas others have left inguinal hernias in 81 patients (36.6%) and the remaining 12 patients (5.4%) have bilateral inguinal hernias Figure 4.

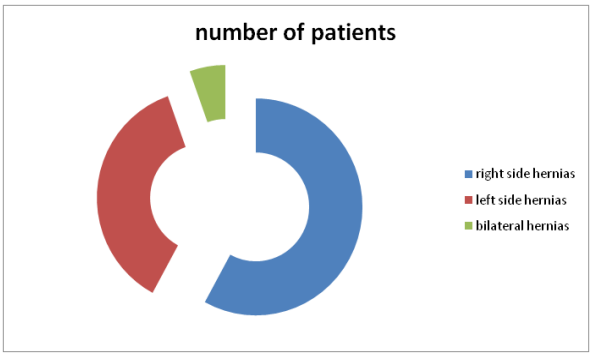

Figure 4: Side of the hernia

Some 213 patients (96.4%) had a primary inguinal hernia whereas 8 patients (3.6%) had a recurrent inguinal hernia. A total of 189 inguinal hernia operations were performed under general anesthesia in the majority of patients, but spinal anesthesia used in some patients depending on the patient state and according to the patient's preference.

There were five types of operations have been done during this study, Herniotomy perfo-rmed for 48 patients (25.3%), Bassini repair performed for 55 patients (29.1%), Shouldice repaire performed for three patients (1.5%), a tension free Lichtenstein repair (hernioplasty) using proline mesh have been performed for 58 patients (30.6%) and recently laparoscopic repair using transabdominal preperitoneal repair have been established and performed for 25 patients (13.2%) Table 5.

Type of operation	Number of 0perations	Percentage
Herniotomy	48	25.3
Bassini operation	55	29.1
Shouldice operation	3	1.5
Hernioplasty	58	30.6
T A P P	25	13.22
Total number of operation	189	100

Table 5: The performed operations

It is evident from table 5 that the greater number of adult patients operated on using a hernioplasty and TAPP repair whereas Bassini repair preserved for complicated hernias and used in young adult patients. Herniotomy performed for children. The postoperative stay in hospital varies according to the type of operation which has been done Table 6.

Patients	One day duration	2 days duration	3 days duration	>3 days duration	Total number
Number	61	79	28	21	189
Percent age	32.2	41.7	14.8	11.11	100

Table 6: Postoperative stay

The 61 patients (32.2%) discharged within the first postoperative day, these patients include mainly those for whom herniotomy and TAPP repair have been done, 79 patients (41.7%) discharged within two days after operation, this group include mainly those for whom hernioplasty has been done, in such patients a drain used routinely, the remaining 49 patients (21.1%) are those who have morbidities or have complicated hernias.

Discussion

The aim of this study was to analyze inguinal hernias in Zawia Teaching Hospital, Zawia and the progress of hernia repair from herniotomy, herniorrhaphy, hernioplasty and recently laparoscopic hernia repair involving Transabdominal preperitoneal repair (TAPP). Inguinal hernias occur in infants, children and adults. Inguinal hernia is more common in males as compared to females. The common complain to nearly all patients was a lump in the groin, some patients have a dragging sensation or goring pain (16) and a minority present by a complicated hernias, 11.2% in this study.

In this study, herniotomy has been performed for children. Tension free hernioplasty (Lichtenstein repair) and transabdominal preperitoneal laparoscopic repair was used for adults and exceptionally Bassini repair used for complicated hernias and in young adults. Open dissection of the groin was associated with an increased incidence of numbness in the groin, and dragging pain toward scrotum (8). Also trauma to the muscles and nerves of the abdominal wall may be a source of postoperative chronic pain (8) and implanting foreign material in the body may cause a foreign sensation (7), or may be a source of a chronic pain (13). Although implantation of proline meshes to reinforce the posterior wall of inguinal canal has a great benefit. Repair without mesh on the other hand had a very poor outcome (10), in terms of recurrence and chronic pain.

The Lichtenstein repair is a safe intervention and associated with low recurrence rates (8). There was a tendency towards fewer recurrences using the laparoscopic preperitoneal approach compared with the open linchtenstein hernioplasty and there is less chronic pain during follow up (3). Laparoscopic repair is considered to be the method of choice for repairing a recurrence after a repair with an anterior approach (10) and shows less postoperative chronic pain (3) and fewer recurrence rates as compared with the open repairs (3). In conclusion, hernia repair in children performed uniformly using Herniotomy but in adults laparoscopic repair (TAPP) can be used for repair of primary and recurrent Inguinal hernias.

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