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RESEARCH ARTICLE

A CLINICAL STUDY ON EXTRA-ABDOMINAL HERNIA

Haydar Hashim Qasim[1], Nada Saadi Majeed[2] and Hassan Abd Rhida Atiea[3]

1. M.B.Ch.B., D.GS. Al-Ghazaliya Primary Health Care Center.
2. M.B.Ch.B, D. ENT, ENT Specialist at Al-Kurkh Hospital.
3. M.B.Ch.B, D.GS, General Surgeon at Al-Kurkh Hospital.

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Abstract

Background: Hernia is an abnormal protrusion of a viscus or a part of a viscus through an opening or weakness in the wall of the cavity that containd. Hernia classification were related to the pathogenesis of hernia and anatomic descriptions, so that to support the surgeon in their selection of the techniques of hernia repair. **S**urgical procedures for hernia repair have changed during the last years.

Patients and Methods: A cross-sectional study covered 233 patients diagnosed to have external abdominal hernia. All these patients were treated surgically in Al-Najaf Teaching Hospital. The time of the study extended for ten months started from 1st December 2002 to the end of October 2003.

Results: A total of 233 patients were studied, male patients constituted 170 patients and female 63 patients with male to female ratio of 2.**7**:1. The most prevalent one was the inguinal hernia 160 (68.6%), One hundred fifty seven were males constituting (98.13%) while females were only three (1.87%). Elective surgery done for 143 patients (89.37%) and 17 patients (10.63%) were admitted from casualty word as complicated inguinal hernia. The indirect type of hernia forming 88.12% (141) cases whereas the direct hernia formed 11.89% (19) cases. The next common type was Paraumbilical hernia 32 (13.7%), and the lowest one was the femoral and spigelian hernias, only one case reported for each type at a rate of (0.42%).

Conclusion: External abdominal hernia is a common occurrence in surgical practice and on the top of the list is the inguinal hernia. It is mostly indirect and more in male. Majority are electively operated upon. The next common type was Paraumbilical hernia and the lowest one was the femoral and spigelian hernias.

Introduction:-

Hernia is an abnormal protrusion of a viscus or a part of a viscus through an opening or weakness in the wall of the cavity that containd [(1)]. Hernia classification were related to the pathogenesis of hernia and anatomic descriptions, so

Corresponding Author:- Hassan Abd Rhida Atiea
Address:- M.B.Ch.B, D.GS, General Surgeon at Al-Kurkh Hospital.

that to support the surgeon in their selection of the techniques of hernia repair [2]. **S**urgical procedures for hernia repair have changed during the last years [3].

Inguinal hernia:
Its classifications are based on general anatomic descriptions (direct, indirect, posterior wall, inguinal ring) [2]. Diagnosis of inguinal hernia is mostly straightforward using physical and ultra-sound examination. CT-scan [4].

Treatment of inguinal hernia is a cause for debate among surgeons. Tension-free hernia repair has been praised for its excellent results [2]. Neumayer et al. in 2004, reported on the results of a large randomized study comparing open-mesh versus laparoscopic treatment of inguinal hernia and showed that the risk for recurrence is less than half after open mesh procedures when compared to laparoscopic procedures [5].

In 2009, the European Hernia Society published guidelines with indications for laparoscopic and open inguinal hernia repair. They recommend a laparoscopic approach to be considered for bilateral hernias and recurrent hernias after previous anterior repair and for all females [6]. Primary unilateral hernias can be repaired using a Lichtenstein or laparoscopic approach depending on surgeon expertise [7].

Laparoscopic inguinal hernia repair is a minimal access surgical procedure. Small incisions are made for the operating instruments and for a laparoscope. A piece of prosthetic mesh is used to close the hernia defect [8]. The fact that they are a large variety of operations suggests that many of the questions of both pathophysiology and management of this condition remains unanswered [9].

With regard to complications, there are some types of complications, which seem to be seen more often or only after laparoscopic hernia repair, e.g., migrating mesh plug, intestinal obstruction, nerve damage, trocar and needle injuries, gas extravasation [2].

Femoral hernia:
It is a ventral hernia commonly encountered by surgeons in clinical practice, although less common than inguinal hernia. Femoral hernia often needs an emergency operation because of incarceration or strangulation [2]. In addition, intestinal resection may need to be considered according to the viability of the intestine. A definitive preoperative diagnosis and strategic plan for surgery are thus important. The choice of operation should be considered based on the clinical anatomy of the abdominal cavity [10].

Clinically overt hernias may be easy to diagnose. However, rare types of hernias such as complicated femoral hernias are at times difficult to diagnose and may pose a surgical dilemma while deciding the cause for obstruction [11,12].

Umbilical hernias:
They are common [9], Many hernias in the umbilical region caused by a weakness of the connective tissue and abdominal muscles around the belly button "umbilicus rather than directly through the umbilicus itself [1]. Umbilical hernias are frequently seen in children, but they are also common in adults [13].

There are two types of umbilical hernia, either congenital appearing at birth or acquired occurring overtime in adults due to the obesity, excessive coughing, pregnancy or other causes. Its repair is either only by suturing the defect with its different approaches, and types of sutures used or with mesh repair [1].

Incisional hernias:
It represents a more heterogeneous problem for the abdominal wall. They range from small defects of no more than a few centimetres to huge complex hernias with significant loss of domain requiring a multidisciplinary approach [14]. For hernia defects greater than ten cm, we prefer open mesh repair is preferred. Open repair has the advantages of reconstituting abdominal wall anatomy and returning physiological function to the abdominal wall. Laparoscopic repair does not achieve these two objectives but covers the hole (defect) internally with a dual mesh to reduce the incidence of adhesion between the prosthesis and bowel [15].

Aim of the study:
To find the types of hernia and some of its characteristics in the admitted patients with diagnosed hernia for surgical treatment

Patients and Method:-

A cross-sectional clinical study covered 233 patients diagnosed to have external abdominal hernia. All these patients were treated surgically in Al-Najaf Teaching Hospital. The time of the study extended for ten months started from 1st December 2002 to the end of October 2003.

The patients were admitted to the surgical word, they were referred from outpatient department, private clinics (as an elective cases) and from the casualty word (as an emergency cases).

A case sheets was done for every patient; personal and sociodemographic information were recorded. In addition, a history of duration of hernia, previous surgical and medical history and any associated conditions were obtained.

Physical examination was done to ascertain the type and site of hernia. Preoperative investigations including Hemoglobin percent, Fasting blood sugar, Blood urea, serum creatinine, and viral screening. Chest X-ray and ECG, if they were indicated. Early postoperative complications that looked for were scrotal swelling and signs of wound infection.

Results:-

Male patients constituted 170 patients (73%) and female 63 patients (27%) with male to female ratio of 2.**7**:1 as shown in fig-1.

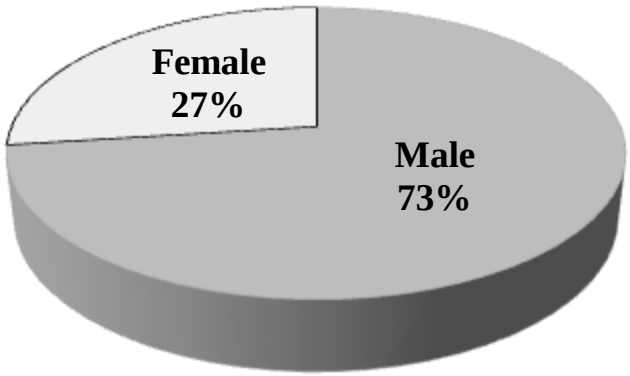

Figure 1:- Gender based distribution of the patients.

Table-1 revealed the types of hernia in the operated upon patients. The most prevalent one was the inguinal hernia 160 (68.6%), followed by Paraumbilical hernia 32 (13.7%), and the lowest one was the femoral and spigelian hernias, only one case reported for each type at a rate of (0.42%).

Table. 1:- Frequency and rate of different types of hernia.

Type of Hernia	n	%
Inguinal	160	68.6
Paraumbilical	32	13.7
Incisional	25	10.7
Umbilical	12	5.3
Epigastric	2	0.9
Femoral	1	0.4
Spigelian	1	0.4
Total	233	100

The commonest type of hernia was the inguinal hernia, its distribution according to some variables were presented in (Table 2). One hundred fifty-seven were males constituting (98.13%) while females were only three (1.87%).

Elective surgery done for 143 patients (89.37%) and 17 patients (10.63%) were admitted from casualty word as complicated inguinal hernia, all complicated cases were males. Regarding to the topographic distribution 112 patients (70%) were on the Rt. Side, 35 patients (21.87%) were on the Lt. Side and only 13 patients (8.12%) were bilateral inguinal hernias. The indirect type of hernia forming 88.12% (141) cases whereas the direct hernia formed 11.89% (19) cases.

Table 2:- Distribution of patients with inguinal hernia according to some variables.

Variables (n=160)	subgroup	Number	Percentage
Gender	Male	157	89.1
	Female	3	1.9
Type of surgery	Elective	143	89.4
	Emergency	17	10.6
Topology	Rt	112	70
	Lt	35	21.9
	Bilateral	13	8.1
Type of hernia	Direct	19	11.9
	indirect	141	88.1

Figure 2 showed the distribution of patients with inguinal hernia according to age group. The highest rate 23.3% was in the age group of (0-9) while the lowest rate 1.3% was in the age group of (80-89).

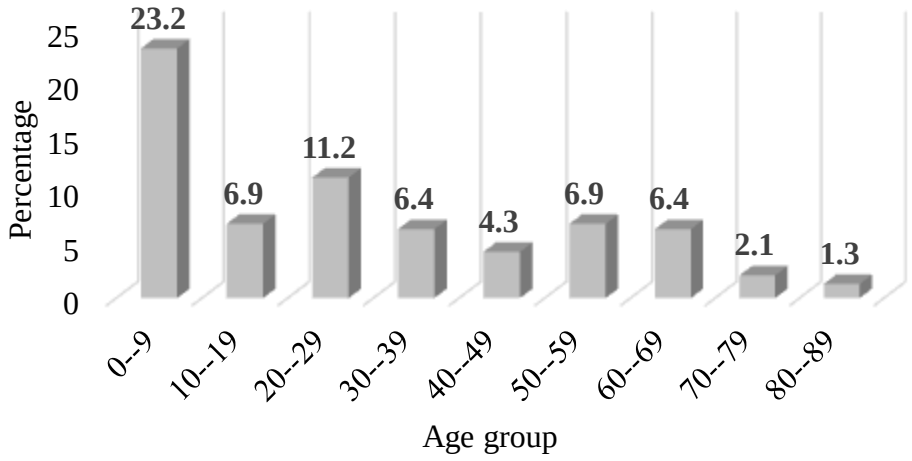

Fig-2:- Distribution of patients with inguinal hernia according to age group.

Patients with complicated inguinal hernia constituted 22(%) patients. Most of them were children aged (0-9) years, then it started to decrease with an increase in the age of the patients (Table-3).

Table 3:- Age group distribution of complicated inguinal hernia.

Age	Number	Percentage
0-9	7	31.8
10-19	4	18.2
20-29	2	9.1
30-39	2	9.1
40-49	2	9.1
50-59	2	9.1
60-69	2	9.1

70-79	1	4.5
80-89	-	-
Total	22	100

Table-4 showed the associated condition reported with inguinal hernia, undescended testis present in 11 patients (6.87%) and hydrocele present in 20 patients (12.5%) of the patients with inguinal hernia.

Table 4:- Associated condition with inguinal hernia.

Associated conditions	Rt (n%)	Lt (n%)	Bilateral	Total	Percentage of total inguinal hernia (160)
Undescended testis	6(54.5)	3(27.3)	2(18.2)	11	6.87
Hydrocele	18(90)	2(10)	-	20	12.5
Total					

Figure-3:- Presented the early post-operative complications occur in short period after surgical treatment. These were scrotal edema which was found in 35 patients (21.8%), and hematoma which was found in 2 cases (1.3%).

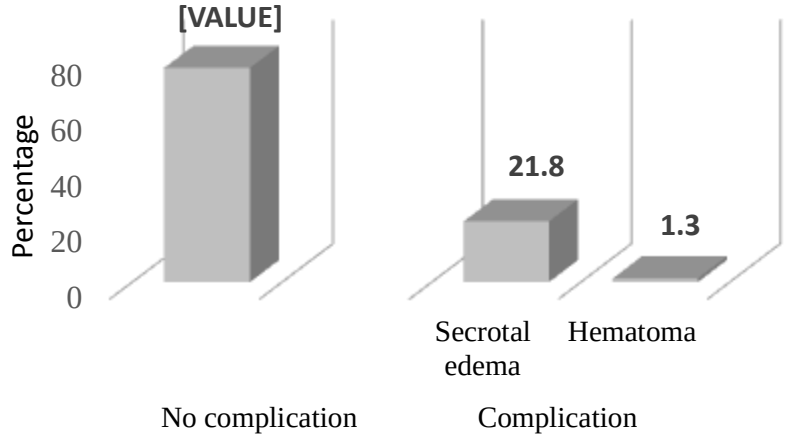

Table-5 revealed the rate of the other types of hernia encountered in our patients
Umbilical hernia were 12 cases (5.2%), Paraumbilical hernia comprise (13.7%) (32 cases), and Incisional hernia that composed 25(10.7%) of the total patients.

Table 5:- Abdominal wall hernia other than inguinal hernia encountered in our study group distributed according to gender.

Type of hernia	Percent of total study patients	Male	Female	Total
		n(%)	n(%)	n(%)
Umbilical	5.2	5(41.7)	7(58.3)	12
Paraumbilical	13.7	5(15.6)	27(84.4)	32
Incisional	10.7	3(12)	22(88)	25

Discussion:-

A hernia of the abdominal wall is the most common condition requiring major surgery. The outcome of hernia surgery is highly surgeon dependent. It required a combination of accurate anatomical knowledge with good surgical skill [16].

In this study the majority of hernia were inguinal hernia, which is comparable to the result of Rutkow and Robbins study where the rate of the inguinal hernia in his study was (75%) [17]. In Sulaiman et al study out of 157 cases of groin hernia, 153 cases were inguinal hernias (97.5%) and only 4 cases were of femoral hernia (2.5%) [9].

The current study showed the peak incidence was in the first decade of life which was in agreement with Moss study [18].

In our study regarding inguinal hernia, male to female ratio was 52.3:1 this low rate of female patients may be in part due to religious and conservative back ground in our society. This ratio was higher than that of British study 20:1 and American one 25:1 [19]. In a study conducted by Sulaiman et al they found the male forming 150 cases (95.5%) and 7cases were females (4.5%) with a male to female ratio of (37.5:1) [9]. In another study by Charles et al. showed that 93.2% of all inguinal hernia cases were males, 6.7% were females, male to female ratio was (13.7:1) [20].

The commonest type of inguinal hernia in the current study was the indirect variety which was higher than that reported by Sulaiman et al who found it as (67.3%) [9].

Inguinal hernia is more common on the Rt. side formed 70%, this was reported by many studies [16,17,21].

Inguinal hernia occurring with intestinal obstruction or strangulated bowel was high, it reached 13.75%, this could be in part due to refusal of herniotomy by the patients when they were advised to do the operation in the proper time. Children remain at great risk of complication (31%) of all complicated inguinal hernia due to narrow ring. Among the 100 cases of intestinal obstruction studied by Priscilla et al. most common cause of acute was found to be obstructed/strangulated inguinal hernia which accounted for 32% of cases [22].

The undescended testes present-in 11 patient (6.87%) which is comparable to other studies [18, 20]. Hydrocele present in 20 patients (12.5%) which is higher than British studies 5% [16].

In our study sample, femoral hernia was only one patient forming (0.4%). This is lower than that of USA which is 3% [15,16]. In other studies, femoral hernia is thought to represent about 2% - 4% of inguino-femoral hernias, but it is often over-looked during inguinal hernia repair [12].

Among the operated upon patients, umbilical hernia constituted 5.15% of all hernia which is higher than that reported by USA studies 3% [16], this could be due to anxiety of the parent about their children lead to early doctor visiting. Data from Jawad study showed most of the patients were fermales, and this gives an idea that pregnancy is an important cause and this was not differed from others studies [23]. However, some series showed males affected more than females [24].

There are different methods for umbilical hernias repair, a new trend of laparoscopic hernial repair which now covers about 15% of all types of hernias, but Still the traditional open repair for small umbilical hernia is more common [1].

Incisional hernia formed 10.7% of the total patients in this study which is the same ratio of other studies [15,16]. Incisional hernia is one of the commonest complications of abdominal surgery. About 90% of incisional hernia occur during the first 3‑year of surgery. It varies between 11% and 20% in uncomplicated wounds [25].

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