

Original Research Article

## Pattern and prevalence of hernia in child at Bahri Teaching Hospital 2013 – 2015

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**Abstract:** Hernias represent one of the most frequent surgically correctable problems in children and one of the most common procedures performed by a pediatric surgeon. A hernia can develop in the first few months after the baby is born because of a weakness in the muscles of the abdomen. Once the diagnosis of a hernia is made, surgical repair will be performed. Most low- and middle-income countries are unable to provide this essential surgery to the general public, resulting in considerable morbidity and mortality. Between the years Mar. 2013 –Sep. 2015 we evaluated 314 patients with different types of hernia in child age ranged between less than month and up to more than ten years in Bahri Teaching Hospital at pediatric surgery unit to assess pattern, prevalence, presentation, management and complications. In this study, 314 patients were evaluated, all between the ages of less than one month and more than 10 years. Male to female ratio was 5:1. Inguinal hernia was at right, left, and bilateral sides in 159 (76%), 42 (20%) and 8 (4%) of the patients, respectively. 93 (29.6%) patients of umbilical hernia and 7 (2.2%) of patients with para umbilical hernia. 266 (84.7%) of patients underwent elective repair, 21(6.7%) of patients by emergency repair and 27(8.6%) of patients treated non surgically like umbilical hernia because the age less than 3 years and some inguinal hernia as the age of patients less than 2 month and had associated comorbidities kept of them for close follow up. Our results showed that inguinal and umbilical hernia is among the most frequent types of hernia in the pediatric population. Regarding age distribution, approximately 59.6% of patients were from age group 1 – 5 years, which shows that the majority of hernias appears early in life, the fact that should raise the attention of people, parents, pediatrician and surgeon about this common and easily managed condition if treated at earlier time i.e. before obstruction, strangulation or incarceration. As incidence of incarceration of inguinal hernia about 16%. Regarding the sex of the patients; 263 (83.8%) are males and 51 (16.2%) are females with male: female ratio 5:1. Approximately (1-4%) of children has inguinal hernia. Inguinal hernias were found variously on the right side in about 159(76%) of cases and on the left side in 42(20%). They are bilateral in about 8(4%) of cases. Inguinal hernia is more prevalent type of hernia in child followed by umbilical hernia. The frequency of incarceration increased with younger age especially neonate population. All inguinal hernia for surgical repair.

**Keywords:** inguinal hernia, umbilical hernia, incarceration, reducible

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### INTRODUCTION

Hernias represent one of the most frequent surgically correctable problems in children and one of the most common procedures performed by a pediatric surgeon [1-6]. Inguinal and umbilical hernias together combine to account for more than 90 percent of all hernias seen in our practice [7]. In general, a hernia is defined as a protrusion of a portion of an organ or tissue through an abnormal opening (defect) in the cavity containing it [8]. A hernia can develop in the first few months after the baby is born because of a weakness in the muscles of the abdomen. There are two common types of hernia in babies and young children. Inguinal and umbilical hernias happen for slightly different

reasons; Umbilical hernia: This is more common in some ethnic groups, particularly babies of African descent. Inguinal hernia: As many as five in 100 children are born with this. Hernias occur more often in children who have one or more of the following risk factors: a parent or sibling who had a hernia as an infant, cystic fibrosis, developmental dysplasia of the hip, undescended testes and abnormalities of the urethra. Definitive management: Once the diagnosis of a hernia is made, surgical repair will be performed. Acute incarceration of an inguinal hernia is one of the commonest reasons for emergency surgical admission of young children. They present with a tense, tender, irreducible lump in either groin and sometimes with

associated vomiting [9]. However, most low- and middle-income countries are unable to provide this essential surgery to the general public, resulting in considerable morbidity and mortality. This study aimed to estimate the pattern, prevalence, barriers to care and disability of untreated hernias in Sudan and specially in Bahri Teaching Hospital between the years 2013 and 2015 [4].

**METHODOLOGY**

Between the years Mar. 2013 –Sep. 2015 we evaluated 314 patients with different types of hernia in child age ranged between less than month and up to more than ten years in Bahri Teaching Hospital at pediatric surgery unit to assess pattern, prevalence, presentation, management and complication. All patients were preoperatively and postoperatively assessed clinically and were followed-up for a period that ranged from one week and up to one month postoperatively.

**RESULTS**

In this study, 314 patients were evaluated, all between the ages of less than month and more than 10 years. Male to female ratio was 5:1, with maximum number of patients in the age group of 1-5 years (59.6%). 111 patients (35.4%) presented with visible swelling bulging during crying, 168 (53.5%) of patients with reducible swelling manually, 20 patients by

irreducible and 15 patients with obstructive symptoms. Inguinal hernia was at right, left, and bilateral sides in 159 (76%), 42 (20%) and 8 (4%) of the patients, respectively. 93 (29.6%) patients of umbilical hernia and 7 (2.2%) of patients with para umbilical hernia. After taking history and performing physical examination the diagnosis result 281(89.5%) were reducible, and 33 (10.5%) were incarcerated. 266 (84.7%) of patients undergoing elective repair, 21(6.7%) of patients by emergency repair and 27(8.6%) of patients treated non surgically like umbilical hernia because the age less than 3 years and some inguinal hernia as the age of patients less than 2 month and had associated comorbidities. Presenting complain of patients according to age were found 187 of patients in age group (1-5 years) 161 of them presented with reducible swelling and 26 with incarcerated swelling table (1). The commonest type of hernia was inguinal 102 Rt., 15 Lt. and 4 bilateral in age group 1-5 years, then 60 cases of umbilical hernia in these age group table (2). Presenting complain according to type of hernia; there were 159 cases of Rt. Inguinal hernia 68 of them with visible swelling during crying, 73 with reducible swelling, 18 with incarcerated swelling. 42 cases of Lt. inguinal 12 of them with visible swelling during crying, 26 with reducible swelling, 4 incarcerated swelling and 8 in bilateral side table (3). Treatment according to type of hernia listed in table (4).

**Table 1: Shows character of swelling according to age group**

Age	Diagnosis		Total
	Reducible	Incarcerated	
up to month	1	1	2
>1 month-1 year	34	5	39
>1-5 year	161	26	187
>5-10 years	54	0	54
>10 years	31	1	32
Total	281	33	314

P value 0.01

**Table 2: Type of hernia according to age group**

Age	Type of hernia						Total
	Epigastrium	Umbilical	Para umbilical	Rt. inguinal	Lt. inguinal	Bilateral inguinal	
Neonate	0	0	0	1	0	1	2
>1 month-1 year	0	6	0	24	8	1	39
>1-5 year	3	60	3	102	15	4	187
>5-10 years	0	23	1	20	8	2	54
>10 years	2	4	3	12	11	0	32
Total	5	93	7	159 [76%]	42 [20%]	8 [4%]	314

P value 0.00

**Table 3: Presenting complain according to type of hernia**

Type of hernia	Presenting complain			Total
	swelling during crying	reducible swelling	Incarcerated	
Epigastrium	0	5	0	5
Umbilical	26	54	13	93
Para umbilical	1	6	0	7
Rt. inguinal	68	73	18	159
Lt. inguinal	12	26	4	42
Bilateral inguinal	4	4	0	8
Total	111	168	35	314

P value 0.42

**Table 4: Treatment according to type of hernia**

Type of hernia	Treatment			Total
	Conservative	Emergency surgery	Elective surgery	
Epigastrium	0	0	5	5
Umbilical	26	5	62	93
Para umbilical	0	0	7	7
Rt. inguinal	0	12	147	159
Lt. inguinal	0	4	38	42
Bilateral inguinal	1	0	7	8
Total	27	21	266	314

P value 0.00

## DISCUSSION

In This study we evaluated the pattern, prevalence, barriers to care and disability of untreated hernias in Bahri Teaching Hospital between the years 2013 and 2015. Our results showed that inguinal and umbilical hernia is among the most frequent types of hernia in the pediatric population [6]. Regarding age distribution, approximately 59.6% of patients were from age group 1-5 years, which shows that the majority of hernias appears early in life, the fact that should raise the attention of people, parents, pediatrician and surgeon about this common and easily managed condition if treated at earlier time i.e. before obstruction, strangulation or incarceration [3]. As incidence of incarceration of inguinal hernia about 16% [10]. Regarding the sex of the patients; 263 (83.8%) are males and 51 (16.2%) are females with male: female ratio 5:1. Female patients reported two cases of incarcerated hernia, which is rare but female inguinal hernia could contain ovary and fallopian tube in the hernial sac, that's why we must take the hernias in females seriously and should be treated by an early to prevent the subsequent complications like thrombosis and gangrene and during operation be careful not to injure it [3]. The issue of hernia incarceration is its frequency, especially increased in the neonatal population; the increased morbidity of operation in part related to its necessary urgency; the potential for permanent injury to the entrapped incarcerated organ; less optimal operative outcomes with potential vas and vessel injury; and treatment outcomes with greater recurrence rates. Approximately (1-4%) of children has

inguinal hernia [5]. Inguinal hernias are found variously on the right side in about 159(50.7%) of cases and on the left side in 42(13.4%). They are bilateral in about 8(2.5%) of cases [5, 11]. 7.5% of cases of all Rt. Inguinal hernia presented with incarceration and treated surgically emergent, while 10% cases of Lt. inguinal hernia were incarcerated and emergently treated by surgery. In my knowledge no study agreed with this result. 266(84.7%) of hernia repaired electively, 21(6.7%) repaired as emergency and 27(8.6) treated non-operatively.

## CONCLUSION

Inguinal hernia is more prevalent type of hernia in child followed by umbilical hernia. The frequency of incarceration increased with younger age especially neonate population. Early surgical treatment for different type of hernia is recommended to reduce the complications. All inguinal hernia for surgical repair, but umbilical hernia need close follow up and surgical repair if large defect > 1.5 cm, age more than 5 years or get complicated [3]. To increase the awareness of population about hernia.

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