ORIGINAL ARTICLE

Knowledge, Attitude and Practice of General surgeons regarding Paediatric inguinal hernia and hydrocele

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ABSTRACT

Background: Inguinal herniotomy in children is a commonly preformed elective procedure. Early herniotomy saves a significant number of patients from complications which may occur due to obstruction or strangulation of intestine. Even in developing areas of the world, morbidity and mortality related to complications are high in children especially in neonates.
Aim: To assess the knowledge, attitude and practices of general surgeons (GS) regarding pediatric inguinal hernia & hydrocele
Methods: This study was conducted at services hospital Lahore over a period of two months from October 2016 to November 2016 at different teaching hospitals in Lahore and sheikhupura. A questionnaire was offered to GS which was divided into two parts: i. basic demographic data, ii: (a) knowledge (b) attitude and practice. Data was analyzed using SPSS version 20.
Results: A total of 196 GS filled the proforma. The mean age of respondents was found to be 36.08±9.36 years. Among them, 172 respondents (87.8%) were male while 24 (12.2%) were females. Among responders 53 %of the GS were right about the timing of intervention in hernia while 47% suggest to with for 2 or 5 years.
Conclusion: On the bases of study we conclude herniotomy, although as simple procedure, its proper management is still unknown to GS, particularly the young surgeons. We need to train young GS regarding the proper management of hernia & hydrocele in pediatric population.
Keywords: Herniotomy; complications; morbidity; neonates.

INTRODUCTION

Inguinal hernia and hydrocele in pediatric age group are most frequently seen conditions. Recommended procedure in both surgical conditions is herniotomy[1]. In case of inguinal hernia, early herniotomy saves a significant number of patients from complications which may occur due to obstruction or strangulation[2]. Even in developing areas of the world morbidity and mortality related to complications are high in children especially in neonates. In developing countries like us, the risk of incarceration and complications is much higher[3]. Delayed treatment is to due poverty and lack of awareness among parents and lack proper knowledge of general practitioners and even general surgeons about the timings of surgery for inguinal hernia in neonates and children. In routine practice diagnosis of both inguinal hernia and hydrocele is made on the history, parent's observation, and clinical examination[4]. Some of the investigation are also tried previously to confirm the diagnosis like x- ray with contrast. Inguinal ultrasound is useful tool in asymptomatic cases[2]. This cross sectional study was planned to assess the knowledge, attitude and practices of general surgeons towards pediatrics inguinal hernia and hydrocele.

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MATERIAL & METHODS

This cross-sectional study was conducted at Services Hospital. Lahore over a period of 2 months, from October, 2016 to November, 2016. All available consultant GS and residents working at teaching hospitals of Lahore and sheikhupura were asked to be included in the study. After approval from ethical review board, the questionnaire was offered to GS which was divided into two parts: i. first portion contains the basic demographic data (age, gender, year of graduation, year of post graduation, total experience after graduation, present working post and exposure to department of paediatric surgery. Part ii: again included of two parts (a) knowledge (b) attitude and practice. First part included basic questions regarding hernia and hydrocele management while 2nd part included the simple questions and information about their personal experience and level of difficulty according to age. All the data was analyzed using SPSS version 20. The quantitave variables like age were as presented mean±SD. Qualitative variables like gender and other

demographic variables were presented as frequency and percentages. P-value ≤ 0.05 was considered as significant

RESULTS

A total of 196 GS filled the proforma. The mean age of respondents was found to be 36.08±9.36 years. Among them, 172 respondents (87.8%) were male while 24(12.2%) were females. Most of them had experience less than 10 years and 111 participants (56.5%) had worked at paediatric surgery department. All the details about biodata are given in table 1.

We had 6 questions related to knowledge and 4 questions regarding attitude and practice of GS towards patients with inguinal hernia. All the questions and their answers are summarized in table 2. Also we had stratified the correct answers of respondents regarding age for inguinal herniotomy for inguinal hernia and age for surgery for hydrocele and are summarized in table 3 and table 4.

DISCUSSION

Pediatric inguinal herniotomy is one of the most commonly performed procedures. Historically considered as an "intern case"; at occasions it can be very challenging even for an expert pediatric surgeon. In experienced hands, repair can often be performed rapidly and with a low complication rate[4].

In our study we assessed the knowledge, attitude and skills of GS about pediatric inguinal hernia & hydrocele. Most of the participants were male 87% which may be attributed to less prevalence of female general surgeons in Pakistan. Major group of responders were having experience less than 10 years & above 60% worked in pediatric surgery department.

Six basic questions were asked from GS. Most imported question was age of surgical intervention in hernia& hydrocele.

Herniotomy is recommended for inguinal hernia soon after diagnosis[5]. Early herniotomy saves a significant number of patients from complications which may occur due to obstruction or strangulation of hernia[6]. In order to prevent incarceration and strangulation, hernia surgery is indicated immediately after diagnosis[7]. Half of the patients with complicated hernia present before six months of age[2].According to a recent study, 79% of premature infants with inguinal hernia in neonatal intensive care units had repair done just before discharge[8]. Safety of modern anesthesia has made this a practical approach. Another study conducted by Özdemir & Arıkan reported that risk of incarceration and strangulation in children below the age of one year is much higher when compared with older children[9]. However the procedure can be delayed if there are any ongoing respiratory tract infections, ear infections or evidence of dermatological lesions in the area of operation[2]. In our study half of GS (53%) were right about the timing of intervention in hernia while 47% suggest to with for 2 or 5 years.

Bilateral hernia surgery is preferred approach among pediatric surgeons in healthy patients. This approach reduces the risk of contralateral hernia complications. In this modern era of laparoscopy bilateral herniotomy is the procedure of choice[2, 10]. It is only contraindicated when there is obstruction/ strangulation for which emergency surgery is required. Most of responder agreed upon bilateral herniotomy in a single setting while 41% disagreed and 10% of them not sure what to do.

All pediatric surgical centers including ours, reduces the hernia under sedation and keep admitted the patient for couple of days for elective surgery. The thought behind this delay is gave time for settlement of edema. In the presence of edema the risk of complication can be higher. If the manual reduction did not work or signs of strangulation appear emergency surgery is recommended. Responder above 50% of our study was advised emergency surgery. Thirty eight percent agreed with pediatric surgeon and 29% think if manual reduction fails than emergency surgery.

If no visible swelling is present, then the older child should be allowed to stand, while infant is restrained so that he strains or cries to enable the examiner to determine the presence of an inguinal swelling. Despite increasing intra-abdominal pressure, a swelling cannot be demonstrated. In this situation the cord is palpated to determine its thickening [11]. On the affected side the cord structures feel thicker when compared with the unaffected side.

If the parents sure about the swelling while no sign are present some surgeons prefer to do the herniotomy. Ultrasonography is gaining popularity now a days in these small set of patient where no visible swelling seen. According to Erez et al. reported that diameter of inguinal canal above 7.2±2mm is an indication of true hernia[2,13]. In our study 58% thing re-vist or re examination 25% wants to rely on parents while 16% recommend ultrasonography of the inguinal canal for diagnosis.

Among pediatric surgeon hydrocele needs observation till 12 to 24 months of life. If it remains unresolved by 2 years of life, surgical correction is recommended is performed electively. Early surgery is indicated when there associated hernia or any underlying testicular pathology[14]. Fifty four percent of the general surgeons were right in our study while

other responded 23% and 22% as soon as possible or at the age of 5 years respectively.

Standard procedure for hydrocele treatment in children is herniotomy. Aspiration or drainage is contraindicated in children. In this study 79.6% general surgeon gave the right answer, while 22.4 goes with aspiration or drainage of hydrocele.

Regarding attitude & practice of general surgeons 4 questions were asked, in which referral of patients to paediatric surgery, age at which general surgeon feel uncomfortable and protocol to calculate the dosage in pediatrics were assessed.

Since the surgery start, GS doing the surgeries upon paediatric patients and Children called as young adults. As the time passed they came to know about unique feature of anatomy and physiology of children makes them thick about proper training or referral to trained people[15]. In country like Pakistan was pediatric surgery is a growing specialty and general surgery departments should help to improve. GS who refer the patients to department of paediatric surgery under the age of 1 month were 26%. And less than 12 years 32.7% while other were refer between ages of 6 months to 5 years.

Most of the GS feel uncomfortable under the age 1year. Some of them under 1 month while all the GS were feel comfortable in doing herniotomy above the age of 5 years in this study

Among medical errors most common is medication error[16]. Muhammad AA., reported that medication error is 3 time more come in children when compared with adults. They also found 34% medication error in study for prescribed antibiotic[17]. In our study 60% of GS knew the exact dose of fluids and antibiotics according to weight, 21 % consult pharma guide. Ten percent GS call to a pediatrician for dose adjustment and rest of them reduces dose to half of the adult dose.

CONCLUSION

On the basis of the study we conclude that herniotomy, although as simple procedure, its proper management is still unknown to GS, particularly the young surgeons. We need to train young GS regarding the proper management of hernia & hydrocele in pediatric population.

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Table 1: Demographic details of participants

	N (%)
Age (in years)	36.08±9.36 yrs
Gender	
Male	172 (87.8%)
Female	24 (12.2%)
Post-graduation experience	
<10 years	122 (62.6%)
10-20 years	54 (27.6%)
>20 years	20 (10.2%)
Current level	
Trainee	105 (53.6%)
Senior registrar	49 (25%)
Consultant	42 (21.4%)
Have you worked in Paediatric Surgery department?	
Yes	111 (56.6%)
No	85 (43.4%)

Table 2: Questions to be asked for participants in this study

Questions:		n (%)
1	When inguinal hernia surgery is required in pediatric patient?	
	As soon as possible, when medically fit	104(53.1%)
	Up to age of 2 years	72(36.7%)
	Up to age of 5 years	20(10.2%)
2	Do you prefer bilateral herniotomy in a single sitting?	
	Yes	103(52.6%)
	No	81(41.3%)
	Not sure	12(10.2%)
3.	What is the treatment of irreducible inguinal hernia in children?	
	Emergency surgery	100(51%)
	Manual reduction then elective surgery	38(19.4%)
	If manual reduction fails then emergency surgery	58(29.6%)
4.	If hernial swelling is not visible but parents are sure about it what is your opinion?	
	Re-visit	90(45.9%)
	Re-examine	24(12.2%)
	Rely on parents	50(25.5%)
	Ultrasound	32(16.3%)
5.	When hydroceles require surgery in pediatric patients	
	As soon as possible, when medically fit	44(22.4%)
	Around the age of 2 years	106(54.1%)
	Around the age of 5 years	46(23.5%)
6.	What is the treatment of hydrocele in children?	
	Herniotomy	156(79.6%)
	Aspiration	20(10.2%)
	Drainage	20(10.2%)
ATTITUDE AND PRACTICE:		
7.	Below which age you usually refer the patients with inguinal hernia/hydrocele to pediatric surgery department?	
	Under 1month of age	26(13.3%)
	Under 6month of age	41(20.9%)
	Under 1years of age	33(16.8%)
	Under 5 years of age	32(16.3%)
	Under 12years of age	64(32.7%)
8.	Do you perform inguinal herniotomy?	
	Yes	160(81.6%)
	No	32(16.3%)
	No reply	4(2.0%)
9.	In which age group you feel uncomfortable while performing inguinal herniotomy in children?	55(28.1%)
	Under 1month of age	41(20.9%)
	Under 6month of age	68(34.7%)
	Under 1years of age	32(16.3%)
	Under 5 years of age	
10.	How do you write down dose of I.V fluids and I.V antibiotics in children?	
	I know exact dose according to weight	118(60.2%)
	I always consult a pharma guide	42(21.4%)
	I send a call to pediatrics department for dose adjustment	20(10.2%)
	I reduce the dose to half of adult dose	16(8.2%)

Table 3: stratification of correct answer regarding age for inguinal herniotomy

Age for inguinal herniotomy			P-Value
	Right Answer	**Wrong Answer**	
Experience			
<10 years	57	52	0.79
10-20 Years	30	24	
>20 Years	12	8	
Level			
Trainee	49	56	0.000
Senior Registrar	21	28	
Consultant	34	8	
Experience in Paediatric Surgery			
Yes	67	44	0.019
No	37	48	
Do you perform inguinal herniotomy?			
Yes	96	64	0.000
No	8	28	

Table 4: Stratification of correct answer regarding age for inguinal herniotomy for hydrocoele

Age for surgery for hydrocoele in children			P-Value
	Right Answer	Wrong Answer	
Experience			
<10 years	49	60	0.008
10-20 Years	32	22	
>20 Years	16	4	
Level			
Trainee	49	56	0.334
Senior Registrar	28	21	
Consultant	29	22	
Experience in Paediatric Surgery			
Yes	65	46	0.150
No	41	44	
Do you perform inguinal herniotomy?			0.844
Yes	86	74	
No	20	16	