

Occurrences of Hydrocele of Children During 1st 3 Months of 1402 Year in Balkh Regional Hospital.

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ABSTRACT

Introduction: Hydrocele defined by collection of fluid around the testicle between testicle & tunica vaginalis. Its common in children & adults, many peoples may affect by this disease every year. Its occur approximately at ratio of 1:10 in children's after birth. Untreated cases should result to infertility, orchitis, epididymitis and finally testicles atrophy. Incidental averages are different from 6% to 30% by human kinds. All of male persons from birth to dying may affect by hydrocele. **Method:** this is a prospective and descriptive study which data collected by inspection, evaluation & assessment of patients who were examined and become bedded in Balkh regional hospital mazar e Sharif during 1st 3 months of 1402 year. The all collected data analyzed by specific statistical method (SPSS). **Aim:** occurrences of hydrocele according to age & sex during 1st 3month of 1402 year. **Results:** this study was performed over 1496 patients who come to Balkh regional hospital and bedded. From bedded patients, 893 case were males and remaining 601 case were females. 156 patients (17.5%) of bedded male had hydrocele and remaining 737 case (82.5%) were bedded during other diseases. From 156 hydrocele cases; 76 case (48.7%) seen in adults and other 80 case (51.3%) were children (ratio 100:95). Among 76 bedded adult patients who had hydrocele, 22cases were operated successfully and others treated none operatively by various reasons.

Among 80 cases of children who had hydrocele, 35 patients operated & other treated none operatively. Hydrocele consist 8.9% of male bedded patient and include 0.9% of all referral patients in Balkh regional hospital Mazar e Sharif during 1st 3month of 1402 year. Otherwise, from male bedded patients, hydrocele include 17.5% that 8.5% were adult and 8.9% were children. 28.9% of adult patients were operated & 71.1% treated none operatively (the ratio 1:2.5). 43.7% of children that had hydrocele operated successfully & remaining 56.3% were not operating (ratio were 1:1.3). the right sided hydrocele was more seen in group of 6-10 year (14 case /40%), and lowest were 11-15 aging group (10 case of 35 case).

Conclusion: Hydrocele is a disease which commonly seen in children and adults. It can affect individuals in any age. Hydrocele more commonly seen (16.3%) in 11 year of age and then in 3 and 8 age also common. Occurrences are approximately same in children and adults. Right sided hydrocele is funded 2 time more than left sided hydrocele. 69% of 35 cases were seen within inguinal hernia.

Keywords- Hydrocele, Hernail Sac, Testicles, Tunica Vaginalis, Infertility, Seros Fluid.

I. INTRODUCTION

Hydrocele is One of the main problem of children's & adults which many peoples are affecting and suffering from this disease. By progression and development of humankind and becoming machinery life, the incidences of hydrocele are increased. By missing of disease treatment, it may lead to psycho-sexual problems. Whereas, hydrocele affects the important area of body such as male genital area. So, the

presence of disease results to anxiety and anxious because of their affection on fertility and sexual activities. Certainly, progressing of disease and lack of attention to patient's treatment, playing a main role on worsening of reproductive process of male persons.

Problems & case design:

By considering of many hydrocele cases in adults and children's who comes to clinics & hospital for treatment; led me to perform a virgin study tile by this way revealed the causes, outcomes, complications and

psychological problems of the patients and their families for better and reasonable resolving of difficulties. In fact, hydrocele makes the main difficulties of medical society now a day, and individuals involving in different age and suffering from disease. So, this study standby to find nominate problems and timely action for resolving of disease.

Study questions:

This study answers to this questions:

- 1). What is the age group of more occurrences?
- 2). What is the proportion of children and adult's cases?
- 3). Does the increasing of age effect on incidences?
- 4). What is the more type of hydrocele?
- 5). What is the additional disease role on hydrocele?
- 6). What is the proportion of hydrocele in right side and left side?

Goals: like this;

- 1.- incidences of hydrocele by aging groups in Balkh regional hospital.
- 2.- proportion of right side to left side hydrocele.
- 3.- to finding the prevention and decreasing way of budgets.
- 4.- prevention of complications.

Inclusion & exclusion criteria's:

This study includes all of patients who has bedded and treated during 1st 3 months of 1402 year in surgical ward of Balkh regional hydrocele. The patients who did not accept bedding and treatment are excluded from our study.

Importance:

Whereas, hydrocele is a debilitating disease and many peoples affecting and suffering in many counties yearly. This study which focused on frequency of disease and their treatment. So, it makes enable us and other readers to decrease the final complication of disease our timely preceding. This issue has valuable role to bettering the physical psychological development of patient. Otherwise, by prevention and best treatment of disease, we decrease the all kind of budgets in families. Also, the intact reproduction in human society effect on importance of this issue.

II. LITERATURE REVIEW

The studies and researches which accomplished about hydrocele in many countries of world shows that the hydrocele is a salient disease between male individuals in society. Hydrocele is a collection of serosal fluid into tunica vaginalis around testicals which affecting approximately 10% of neonates. And become resolve during one year after birth. The reason of hydrocele in male neonates are clearly unrecognized. Neonatal hydrocele divided in to two deferent categories, communicated & non-communicated (simple scrotal hydrocele). While, the infantile hydrocele tends to absorption. So that, surgical treatment of hydrocele for age of less than one year not recommended. In age of 12-24 month, simple hydroceles are the cause of surgical

repair⁽¹⁴⁾. Hydrocele revealing during patent processus vaginalis and fullness of tunica vaginalis by fluid across the spermatic cord and scrotum⁽¹⁵⁾. It is common in children's and more seen in age less than 2 years⁽³⁾. A study which performed in 2 medical centers indicates that 811 patient diagnosed hydrocele. Of this, 171 cases (21.1%) successfully operated and remaining 640 cases (79.9%) by deferent reasons were not operated⁽⁸⁾.

Other study about hydrocele and filariasis in 20 districts of showed that 24908 case (95.3%) out of 26123 cases had only legs lymphedema, and other 751 cases (2.3%) diagnosed hydrocele. And also, 77 cases (0.3%) suffered from breast lymphedema⁽²⁾. Neonatal hydrocele spontaneously absorbing and relieves^(11,14,15).

The study who become chronic and not absorbing, perhaps need to operational treatment. Because, abdominal cavity makes tract with scrotum (communicated) and allow to peritoneal fluid to enter in scrotum. Hydrocele may occur in puberty & adulthood which in this types there is no any and tract between abdominal cavity and scrotum. So it occurs during fluid hypersecretion from testicles surrounding tissues. If this type of hydrocele become huge, surgical treatment is necessary. In this aging group hydrocele has highly impotency, because sometime it may be the primary sign of testicles tumor⁽¹⁵⁾. Hydrocele occur during imbalance of fluid secretion and absorption in tunica vaginalis. This matter has valuable in evaluation and treatment of hydrocele. So, all of specialists should have special attention.

Hydrocele are two types, primary & Secondary. In primary hydrocele, the processus vaginalis of spermatic cord become closing during 1-2 year after birth. So that, there is no ant tracts between abdominal cavity and scrotum. Whereas, distal portion remaining open and like tunica vaginalis, surrounded the testicles and make a space. The collection of fluid between this space indicates hydrocele. 4 types of hydrocele are present according site of closing of processus vaginalis; congenital, infantile, spermatic cord (encysted) and vaginal hydrocele. The 1st type occur when processus vaginalis is patent and makes tract with abdominal cavity. This opening allows to runs peritoneal fluid and abdominal contents into scrotum. In 2nd types, processus vaginalis blocks at level of deep inguinal orifice and the distal parts will be open to allow passage of peritoneal fluid into scrotum to collecting. In 3rd types, both; distal & proximal ends of processus vaginalis become close and the medal parts open, and fluid are collecting in this area. In 4th types, only processus vaginalis are open around the testicles, so that, by collecting of fluid in this area testicles are impalpable^(5,10).

Secondary hydrocele usually occurs during infections (filariasis, TB of epididymitis and syphilis), wounds (trauma, hydrocele after hernia repairing), and malignancy. Excepts of filarial hydrocele which is huge, others commonly are small.

Mechanism of hydrocele are various: 1.- communication between processus vaginalis and abdominal cavity. 2.- increasing of fluid secretion (secondary hydrocele). 3.- failure to fluid reabsorption. 4.- imbalance of lymphatic drainage of scrotal structures in filarial hydrocele.

In children the patent processus vaginalis allows to enter peritoneal fluid into scrotum, which is the main cause of hydrocele. Whereas, adulthood filariasis caused by *Wuchereria Bancruffi*. It's a popular disease in the world and affected 120 million people in 73 countries.

Epidemiologically, about 80-90% of processus vaginalis are open during birth and this number is decreased about 25-40% till 2 year of life. Autopsy showed that 20% of individuals tends to open processus vaginalis until adulthood which clinically reveals in 6% of neonates. Risk factors of hydrocele in neonates are consists breach presentation, low weight baby birth and usage of progestin (progesterone) ⁽⁷⁾. A types of hydrocele is non-communicating in which the lumen around the testicles are closed. But, body doesn't absorb additional fluids before delivery. One of 10 male births has hydrocele ⁽¹⁰⁾. Operation for inguinal hernia repair and drainage of hydrocele are the commonest operation in pediatric surgery practice. The mentioned 2 disease has common cause and surgical treatment ⁽³⁾. Other study on 302 patients which main age are 20.9 ± 36.4 has found that right sided hydrocele was 184 cases (60.9%) and left side hydrocele was 118 cases (39.1%). Communicated patent hydrocele 121 cases (40.1%), communicated partial patent hydrocele 134 cases (44.4%), and non-communicated hydrocele reported 47 cases (15.5%). 218 cases operated by inguinal incision, 34 cases (11.3%) by inguinoscrotal incision and 50 cases (16.6%) operated only by scrotal incision. In 15 cases seen recurrent hydrocele and treated by secondary operation.

Abnormal hydrocele with thick wall of sac was seen in 83.8% cases and epididymis abnormality seen in 10.6% of cases. The ratio of non-communicated hydrocele till 2 year is more than age of 5-8 year (22.9% vs 2.4%). Incidences of non-communicated hydrocele after 70 months were not seen. Returns of disease after operation were seen in 15 cases (4.9%), which occur during 6-16 months (21.8 ± 16.9) ⁽⁹⁾. hydrocele commonly relive spontaneously. If did not relived within 2 years and become large, should need surgical operation. In communicated cases operation needed for repair of hernia. It indicates easy approaches to opened processus vaginalis and the priority are repair of hernia. If upper parts of processus vaginalis closing tightly by ligation, the distal parts of hydrocele become open to prevent testicles damage. So, the resolution of whole sac prevents the recurrences of disease. non-communicated hydrocele is apart from communicated hydrocele and inguinal hernia which need scrotal incision. According many researches the pathophysiology of communicated

hydrocele is common and same, and risk of relapsing of abdominal hernia is 5-20%.

Kemmotsu and collagueous founded that relapsing of inguinal hernia were 116 cases from 1001 cases (11.6%). In children by aging periods, the occurrences of hernia in age less than 1 year was 13.1%, in age < 2 year were 11.7%, and in other age are < 7.6%.

Lym and their collagueous studied the relapsing risk of inguinal hernia after unilateral hydrocele operation into 85 children by age limitation of 5-107 months. They found that the relapsing of hydrocele and inguinal hernia were seen in 6 cases of 89 cases (7%) during 6-15 months after operation. And they did not advise retrograde operation for children who undergone hydrocelectomy. This study performed only on hydrocele and not includes inguinal hernias. Nux of hydrocele (4.9%) was less than inguinal hernia comparatively (70.6-11.6%). Usually the hydrocele of children can be diagnosing by history taking and physical examination of patients. For diagnosing of some patients we need more radiological examinations. Of this, ultrasonography can diagnose the reopening of processus vaginalis by accuracy of approximately 91.7%, which revealing of peritoneal fluid passage in inguinal canal indicates hydrocele. In case of selective closure of recurrent open processus vaginalis, preoperative ultrasonography is may be an alternatives procedure to laparoscopic diagnosis of inguinal hernia and hydrocele. Whereas, the sensitivity of ultrasonography in diagnosis of patent processus vaginalis are in doubts.

Yip, found the benefits of ultrasonography for diagnosis of recurrent patent processus vaginalis on 322 patients who had unilateral inguinal hernia and hydrocele, which 96 cases (30%) were patent recurrent processus vaginalis that 95% confirmed during operation. In this study of inguinal area, ultrasonography is a valuable examination to revealing patent recurrent processus vaginalis for treatment of inguinal hernia in children. And has good accuracy. For prevention of recurrences of hydrocele post operatively, the surgeon can perform bilateral hydrocelectomy according sonographic diagnosis. In this research's when hydrocele diagnosed according to sonography, history taking and physical examination; bilateral operation always advisable. Otherwise, in patients who had unilateral hydrocele and diagnosed by sonography in first time, retrograde recurrence of disease also seen. So, we found that the all recurrences of disease cannot diagnosed by sonography. This issue depends on experiences and ability of examiners, so the surgeons should pay attention to describing of sonography reports ⁽¹¹⁾.

III. RESULTS

This study was performed on 893 patients who comes during 1st three months of 1402 year in abu-alisina regional hospital. Of this, 156 case were bedded

according hydrocele and others 737 patients had other disease (See in table 1).

Table 1: Rates of hydrocele in 893 bedded patients.

	Non-hydrocele cases	Hydrocele cases	Total bedded cases
Number of cases	737	156	893
Percentage	82.5	17.5%	100%

From hydrocele cases, 76 patients were adult and 80 cases were children (ratios are 0.95:1). From 76 adult patients, 22 cases operated successfully and 54 other not operated according many reasons. From 80 children cases who had hydrocele, 35 patients also operated and 45 patients did not operate (see in table 2).

Table 2: shows rates and % of operated and non-operated patients.

Affected patients	Operated		Non-operated		Total
	No. cases	%	No. cases	%	
Adults	22	28.9	54	71.1	76(100%)
Children	35	43.7	45	56.3	80(100%)
Total	57	36.5	99	63.5	156(100%)

Of 35 operated children; 25 cases (71.4%) were right sided hydrocele and 10 cases (28.6%) were had left sided hydrocele. There is no bilateral hydrocele to operation. But in non-operated patients, we were seen 14 cases of bilateral hydrocele. From 35 cases, 21 patients (60%) of hydrocele was within inguinal hernia and 14 cases (40%) were simple hydrocele (table 3).

Table 3: side of hydrocele in operated children patients.

Side of hydrocele	No.	%
Right	25	71.4
Left	10	28.6
Total	35	100

From all bedded patients, hydrocele consists 17.5% of patients which 8.6% were adult and 8.9% were children. Totally, 28.9% of adult patients were operated and other 71.1% were not operated (ratio are 1:2.5). 43.7% of bedded children were operated and remaining 56.3% were not operated (ratio are 1:1.3).

In this study aging groups also evaluated, of that more cases seen in 6-10 year and subsequently group of 0-5 year. 11-15 aging group are at least.

From 35 operated children, more effected age is 11 years and after this age of 7 & 5 year were more. At beastly cases seen in age of <3 year (table 4).

Table 4: percentage of operated patients according age in children.

Aging groups	Operated patients		Non-operated patients		All of hydrocele cases	
	No.	%	No.	%	No.	%
1year	1	1.25	3	3.75	4	5
2year	1	1.25	4	5	5	6.25
3year	2	2.5	5	6.25	7	8.25
4year	3	3.75	4	5	7	8.25
5year	4	5	1	1.25	5	6.25
6year	3	3.75	5	6.25	8	10
7year	4	5	5	6.25	9	11.25
8year	3	3.75	6	7.5	9	11.25
9year	3	3.75	1	1.25	4	5
10year	1	1.25	1	1.25	2	2.5
11year	7	8.75	6	7.5	13	16.25
12year	3	3.75	3	3.75	6	7.5
13year	0	0	1	1.25	1	1.25
Total	35	43.75	45	56.25	80	100

In 23 cases (65.7%) the sac content were pus, in 12 cases (34.28%), content of sac was serosa fluid. Also, in one case seen bowel in sac, and in 3 cases seen bowel with pus, in 2 cases seen omentum with pus, in other one case we find blood in hydrocele sac (table 5).

Table 5: no. & % of hydrocele sac contents.

Sac contents	No.	%		Total %
Suppurative =23cases	Pus	18	78.3	65.7
	Pus+bowel	3	13.0	
	Pus+omentum	2	8.7	
Serasal=12 cases	Simple serosa	10	83.3	34.3
	Serosa+bowel	1	8.3	
	Serosa+blood	1	8.3	
Total	35	100		100

IV. DISCUSSION

This study was performed on 893 male patients who were came to Balkh regional hospital abu-ali- sena-i-balkhi during first 3rd month of 1402 year. According determined goals of this research and evaluation of variants, we achieved some findings which compering with regional and global findings.

From 893 male patients, 156 cases (17.5%) had hydrocele and 737 cases (82.5%) did not had hydrocele. From hydrocele cases; 80 cases seen in children and other 76 cases were seen in adult patients. Which are shown 2 fold more than literatures ^(1,9). in my study right sided hydrocele was 71.4% and left sided also 28.6%

(Right side 2 time > left side), but in literature reported right side hydrocele 60.9% and left side hydrocele 39.1% which the ratio is 1:1.5 and its less than our findings ⁽¹¹⁾. In other global study ⁽¹¹⁾ reported 36.5%, which 1.5 time more than our study. Perhaps the reason of this increasing of operated cases well be high knowledge's of peoples about disease, enrichment of peoples and prescience of well-founded centers with specialists and doctors for treatment. Furthermore, among 35 cases in 21 patients (69%) seen hydrocele within inguinal hernia. 14patients (40%) had simple hydrocele which is least from literatures (72.2%) ⁽¹¹⁾.

Incidences of hydrocele in literature was shown more common in age of less than 2 years (22.9%), but in our findings this is very low (11.25%). We find the more occurrence of hydrocele in 11 years (16.25%) and after that the age of 3 and 8 were more common (11.3% and 8.7%).

V. CONCLUSION

Hydrocele is a disease which commonly seen in children and adults. It can affect individuals in any age. Hydrocele more commonly seen (16.3%) in 11 year of age and then in 3 and 8 age also common. Occurrences are approximately same in children and adults. Right sided hydrocele is funded 2 time more than left sided hydrocele. 69% of 35 cases were seen within inguinal hernia.

LIMITATIONS

Includes :

- 1- Incomplete of patients files and also incompleteness of operation protocols.
- 2- Incoordination of patients and their attendance during study.
- 3- Only searching of hydrocele and missing of other additional disease in patients.
- 4- Unavailability of pediatric specialist in many hospitals which all pediatric operations also perform by general surgeons.

SUGGESTIONS

Although, there is no study without mistakes, but we tried to be this study absolutely standard. For enrichments of this scientific process and researching works we suggests this high lights:

- This study was performed in limited time and specific hospital. I advise more widely study about hydrocele in all governmental and private hospitals of Afghanistan.
- For decrease of morbidity, mortality and disappointment of hydrocele patients, in every province of this country should establish special centers for pediatric surgery and assigning of professional and specialist persons.

- All hospitals and medical centers should have equipped with modern equipment's for pay of necessary services to patients.
- For decline of hydrocele incidences, we advise wearing of nicker and jockstraps to all persons who are in risk of hydrocele.

REFERENCES

- [1] Bailey & Love's. (2008). *Short Practice of Surgery*, 25st edition., pages 1483-1486., London.
- [2] Beruk, Kebedi. Et al. (2018). "Integrated morbidity mapping of lymphatic filariasis and podoconiosis cases in 20 co-endemic districts of Ethiopia". 12(7). [PubMed] [Google Scholar].
- [3] Ciro, Esposito, MD. (2016). "Current Concepts in The Management of Inguinal Hernia & Hydrocele in Pediatric Patients in Laparoscopic Era". 25(4). 232-240., Elsevier's.
- [4] Courtney M. Townsend, JR., MD., (2008). *Sabiston Textbook of Surgery*, 18th edition., ch-44., pages 2070, 2272., Texas, USA., Printed in India.
- [5] Ejazi, M. M, (2006). "Lecture notes of urology for medical student". 1st edition., ch-12., page 186-188., Kabul, Afghanistan.
- [6] Farhan, Tareen & Feargal, Quinn. (2012). "Hydrocele On the Web" pp 150-157. Published online 7sep 2012.
- [7] Huzaifa, Mohammad. & Moises, A. Moreno. (2023). "Hydrocele" An official website of U.S Government. PMC Free Article/ [PubMed] [Google Scholar]. Steet pearls publication LLC.
- [8] Ibrahim, Musa. Et al. (2014). "Burden of congenital inguinal hernia & hydrocele in north and southern Nigeria, Africa". Pediatric surgery. 11(4): 312-316. Kono state Nigeria. [PubMed] [Google Scholar]
- [9] Jae yen Kim, Et al. (2023). "Metachronous contralateral occurrence of hydrocele after unilateral hydrocelectomy in children younger than 8 years". JKMS. 38(10). E79. Korea.
- [10] Karimi, Husain. (2020). "all things about hydrocele". [PubMed] [Google Scholar].
- [11] Lawrence M. Tierney, JR., Stephen J. M C Phee., Maxine A. Papadakis.(1999)., CURRENT MEDICAL Diagnosis & Treatment.,38th edition., pages 608-609.,USA.
- [12] Lisa, B. E. et al. (2019). "Scrotal Ultrasound Not Routinely Indicated in The Management of Hydrocele in Children". Scandinavian journal of urology. First published online 21 Nov, 2019.
- [13] Malkovich S, et al. Med Pregl. (2010 Jan-Feb). "Influence of surgical sutures on wound healing". Pub Med.

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- [14] Moyer .,Rhoads .,GARROT Allen, M. D.,Harkins.,(1985).,Principle of Primary surgery.,13th edition., pages 957-977.
- [15] Seymour I. Schwartz, M.D. (2015). Principle of Surgery , 10th edition., pages 1307.,USA.
- [16] Somen Das.(2012).A manual on Clinical Surgery,9th edition,India:pages 457-459 ,468-469.
- [17] Standely, T Lau. Et al. (2007). “*current management of hernia & hydroceles*”. Sempedsurg., 16(1): 50-57.
- [18] Tamas jozsa, et al. (Sep 28, 2009). “*Effect of Hydrocele On Appendix Testis in Children*”, Asian Journal Andrology. 11(6); Pp 741-745, Published online. PubMed.
- [19] Urology department. (2023). “*Hydrocele programs a services*”. U.S. news, best children hospital Boston.
- [20] Way, Lawrence W. MD. (2015)., *Current Surgical Diagnosis & Treatment*.,13th edition., pages 1263., USA.