One Year Follow Up of Newborn Babies with Undescended Testes

Haider Mohammed Mousa Dabbach, Ahmed Mohammed Ali Abdulhadi

ABSTRACT:

BACKGROUND:

Cryptorchidism is one of the most common congenital urological disease. The prevalence of cryptorchidism at birth varies from 2 to 5% and the testis mostly descend during the first 6 months of life. In large clinical series, the majority, 75-80% of undescended testes are palpable and 60-70% are unilateral involvement of the right side is more common. The recommended age of orchiopexy progressivley descreased from 10-15 years in the 1950 until the last decade, orchiopexy is recommended between 6-12 months.

OBJECTIVE:

The aim of this study was to determine the most of favorable age at which orchipexy should be performed

PATIENTS AND METHODS:

Fifty 50 newborn boys babys with undescended testes was followed up through two years from February 2015 to February 2017 in a private clinic in Baghdad. Follow up done every 3 months included examination of the inguinal and scrotal area to palpate the position of the testis, and history taken for the family history of undescended testis.

RESULTS:

Forty one (82%) babies with unilateral undescended testis, follow up of 1 year, 36.6% of babies, the testes were descended down to its normal position, and only one case (2.4%) had incomplete descent. Those with bilateral undescended testes (9 babies; 18%), only 11.1% of them had complete descent to normal position.

CONCLUSION:

Boys with retractile testes do not need medical or surgical treatment but require close follow up. Spontaneous descent of testes from inguinal to suprascrotal or scrotal position are observed in majority of infant boys during first year of life.

KEYWORDS: Cryptochidism, orchiopexy

INTRODUCTION:

Cryptorchidism is one of the most common congenital urological disease. The prevalence of cryptorchidism at birth varies from 2 to 5% and the testis mostly descend during the first 6 months of life [(1)].

The definition of undescended testis is the absence of one or both testes in normal scrotal position [(2)].

The pathogenesis of isolated cryptorchidism remains largely unknown but is most likely multifactorial involve both genetic and environmental risk factors [(2)].

Genetic studies of cryptorchidism suggest that the disease heritable but that susceptability is likely polygenic and multifactorial [(3)].

Clustering of cryptorchidism has been reported in a number of families affecting multiple individuals in the same genereation and variable phenotypes [(2)]

Enviromental risk factors associated with exposure to antiandrogenic and/or estrogenic chemicals [(2)].

Certain anomalies are associated with increase risk of cryptorchidism, many related to musculoskeletal, central nervous system or abdominal wall, gastrointestinal defect [(4)].

The diagnosis of undescended testis based on the examination of the boys by documentation of testicular palpability, position, mobility, size and possible associated finding, such as hernia and hydrocele [(4)].

In large clinical series, the majority, 75-80% of undescended testes are palpable and 60-70% are unilateral involvement of the right side is more common [(2)].

Al-Imamein Al-Kadhimein Medical City, Baghdad, Iraq

When a testis is nonpalpable possible clinical findings at surgery include abdominal or transinguinal or complete atrophy [2].

High risk of infertility and testicular malignancy associated with failure of testicular descent can be reduced significantly by correction of cryptorchidism [5].

In infant, observation is indicated for first 6 months to allow spontaneous testicular descent[2]. However, even if spontaneous descent occurs, continued observation is needed because of the risk for recurrent cryptorchidism or reascend of spontaneously descended testis [2].

The usefulness of hormonal therapy is to distinguish retractile from the undescended testes [2].

The standard treatment for palpable undescended testis is inguinal orchiopexy with repair of an associated hernia if present [2].

Currently orchiopexy is recommended between 6-12 months [7].

The increase risk of testicular germinal cell tumor in males with history of cryptorchidism has been known for many years [8]. Both seminoma and nonseminoma carcinoma in situ of the testis [8].

AIMS OF THE STUDY:

The aim of this study was to determine the most of favorable age at which orchipexy should be performed.

METHODS:

A total 50 of fullterm newborn boys babys with undescended testes was followed up through two years from February 2015 to February 2017 In a private clinic in Baghdad. History was taken for family histroy of undescended testes.

Follow up done every 3 months included examination of the inguinal and scrotal area to palpate the position of the testis, and history taken for the family history of undescended testis.

Definition of palpable undescended testes depended on clinical examination, the baby was examined in the supine position with leg slightly bent, we ascertained the position of the testicle at the one of 3 levels:

1. Located in the scrotum.
2. Located in the inguinal region.
3. Located in the abdomen (not palpable) and the testecle could not pulled down in the scrotum.

But if the testes in the suprascrotal position and could be pulled down into the scrotum it was defined as a rectile testicle and these cases excluded from the search.

Statisitcal analysis

Data were presented as frequency and percentage, comparison between frequencies was done using Fisherexact test using GraphPad Prism 6 software. P value less than 0.05 was considered significant.

Results

From the 50 newborn boys babys with undescended testes, forty one (82%) babies were with unilateral undescended testis, and 9 babies (18%) with bilateral testes (Figure 1).

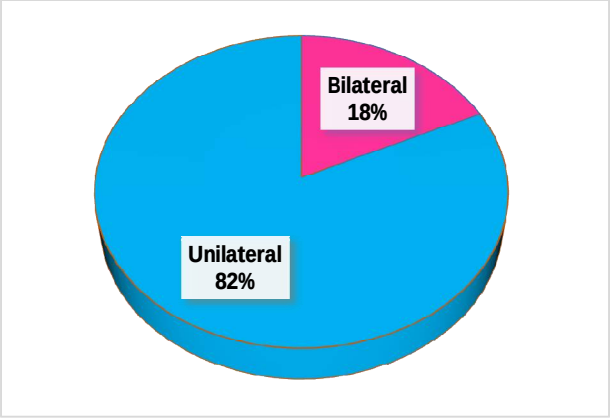

Figure (1): Site of undescended testes

Regarding gestational age at delivery, 31 babies (62%) were fullterm, 19 babies (38%) were preterm (Figure 2).

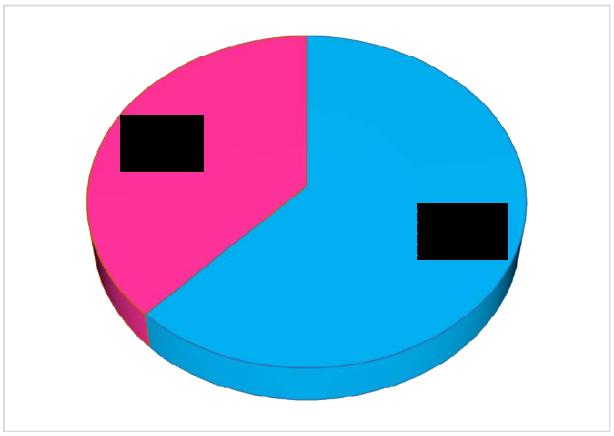

Figure (2): Percentage of full term and preterm

Only 12% of the study cases have positive family history of cryptochidism (Figure 3).

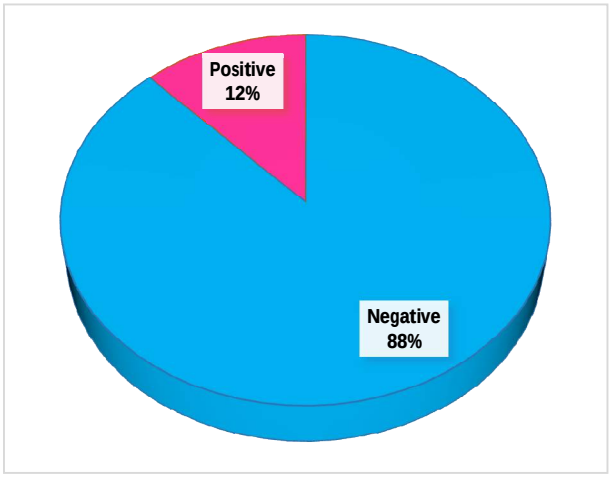

Figure (3): Percentage of family history of undescended testes

There was non-significant difference regarding the site of undescended testes regarding the gestation age at time of delivery (p value =0.715) (Figure 4).

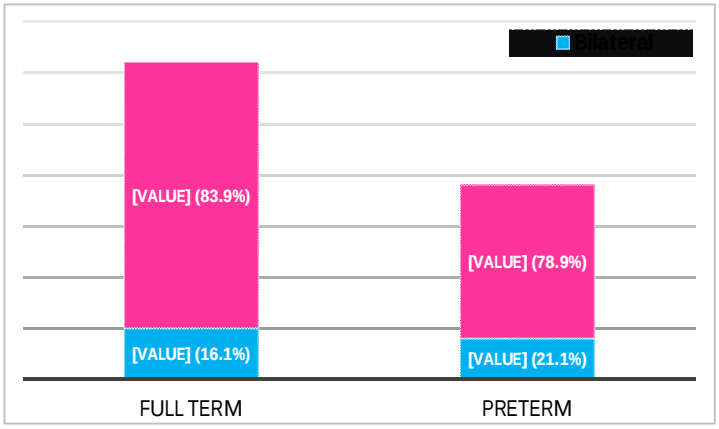

Figure (4): The site of undescended testes and gestational age at time of delivery (p value = 0.715)

Family history had no significant effect on the site of undescended testes (p value =0.293) (Figure 5).

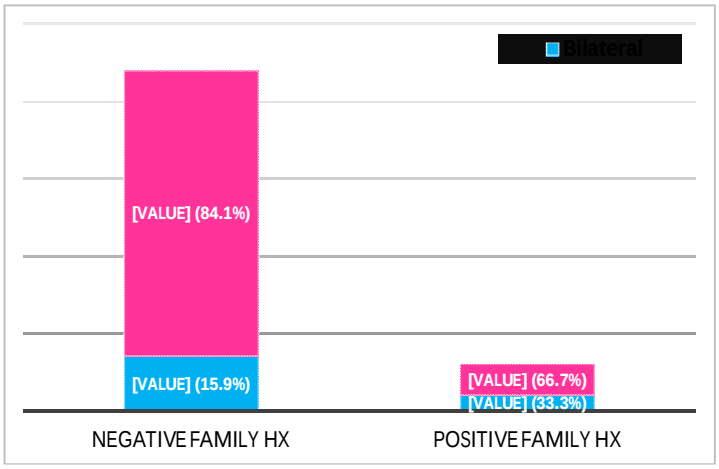

Figure (5): The site of undescended testes and family history (p value = 0.293)

Table (1) shows that from the 41 cases of unilateral undescended testis about 2 cases (4.9%) descend through the first 3 months, one case completed descent to its normal position in the scrotum and one case descended down but fail to reach to its normal position.

At 6 months of follow up, another 4 cases descended down, 3 cases had complete descent to its normal position and one case descended down but not reach its normal position in the scrotum, so 14.6% of cases descended through 6 months of follow up.

At 9 months of follow up, another 8 cases descended down to the normal position in the scrotum and one case descend down but not reach to its normal position in the scrotum.

So the total cases that descend completely down to its normal position in the scrotum about 12 cases (29.3%), this during the 9 months of follow up.

In the 12 months of follow up another 4 cases descended; 3 of them completed descending to its normal position in the scrotum and one case incomplete descend (not reach to its normal position).

So during the follow up of 1 year, about 36.6% of babies had testicular descent to its normal position, and only one cases incomplete descend about 2.4 % of all cases.

About bilateral undescended testes, 9 cases followed up to 1 year, during the 1st 3 months of life, only one case (11.1%) had incomplete descend of testes had happened.
And during the 6th month of follow up only 4 cases (55.6%) had incomplete descent.
And during the 9 months of follow up only 1 case (11.1%) had complete descended down to its normal position.
And during the 12 months of follow up another case will descend down to its normal position.
So just two cases (22.2%) from the 9 cases had completed descent to its normal position.

Table (1): Fate of undescended testes

Undescended testes		0 month	3rd month	6th month	9th month	12th month
Unilateral	No descent	41 (100%)	39 (95.1%)	35 (85.4%)	27 (65.9%)	24 (58.5%)
	Incomplete descent	0 (0.0%)	1 (2.4%)	1 (2.4%)	1 (2.4%)	1 (2.4%)
	Complete descent	0 (0.0%)	1 (2.4%)	4 (9.8%)	12 (29.3%)	15 (36.6%)
	Loss	0 (0.0%)	0 (0.0%)	1 (2.4%)	1 (2.4%)	1 (2.4%)
	Total	41 (100%)	41 (100%)	41 (100%)	41 (100%)	41 (100%)
Bilateral	No descent	9 (100%)	7 (77.8%)	4 (44.4%)	1 (11.1%)	1 (11.1%)
	Incomplete descent	0 (0.0%)	1 (11.1%)	4 (44.4%)	6 (66.7%)	5 (55.6%)
	Complete descent	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (11.1%)	2 (22.2%)
	Loss	0 (0.0%)	1 (11.1%)	1 (11.1%)	1 (11.1%)	1 (11.1%)
	Total	9 (100%)	9 (100%)	9 (100%)	9 (100%)	9 (100%)

DISCUSSION:

Orichopexy should be performed during the first 18 month of life to preserve later fertility. Some cases of undescended testis after the age of 18 months have lacked germ cells in the testicles [2].
In addition 40% of patients who presented with cryptochidism at the age of 8 to 11 years showed an absence of germ cells according to testicular histological results [9].
Testes that remain undescended by age of 6 months are unlikely to descend spontaneously[2].
Testicles that remain outside the scrotum are at high risk for damage for boys with cryptochidism of 9-12 month is the optimum time to perform orchipexy. Intervention at this time may have good effects on future fertility and prevent testicular malignancies in these children [10].
In a study in Saudi Arabia, the median age of surgery was 40 months which is far from the ideal age. After compairing our observations with those of international studies delay referral to a surgeon was found to be the most common reason for delay surgery [11].
The majority of orchiopexy procedure performed in New York (United States) between 1984 and 2002 under the age of 2 years [12].
Ahn et al found that the reasons for delayes orchipexy at korea were related to the parents of the child [13].
In Austria despite knowledge of the timing for surgical treatment orchipexy was performed later than recommended [14].
Considering that most textbooks or guidelines published after the 1980s, orchiopexy recommended to be performed no later than 2 years of age it is suprising that so may orchiopexy were conducted after 5 years [12].
Fertility potential was greatest when orchiopexy

was performed 1 year of age. Orchiopexy before 10 years may protect against the increase risk of testicular cancer associated with cryptochidism [6].

Orchiopexy should not performed before 9 months of age as testes may descend spontaneously during the first months of life as shown in this research.

The highest quality evidence recommeds orchiopexy between 6 and 12 months of age. Surgery during this time may optimize fertility potential and protect against testicular malignancy in children with cryptochidism [3].

In this study, 36.6% of undescended testis achieved full spontaneous descent by 1 year of age. This result is similar to Wenzler et al in 2004 [15], but is higher than Kollin et al at 2007[16], in which 28.2% of undescended testes achieved full spontaneous descent by 1 year of age. While in Henna et al 2004 [17], the results of full spontaneous descent in 6 months was less than 20%, which is less than findings of our study

A premature infant with undescended testes is more likey to achieve complete testicular descent at 1 year of age than at term infant.

CONCLUSIONS:

Boys with retractile testes do not need medical or surgical treatment but require close follow up.

Spontaneous descent of testes from inguinal to suprascrotal or scrotal position are observed in majority of infant boys during first year of life.

RECOMMENDATIONS:

We suggest to wait spontaneous descent of the testis during the first 12 months of life.

Surgical intervention (orchiopexy) is the primary approach in boys with undescended testis, and should be performed at 12-18 months of age.

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AUTHOR CONTRIBUTION:

Dr. Dabbach: Writing the introduction, methods, results and discussion and performing surgery for some cases. Dr. Abdulhadi: Collection of cases, examination and follow up.

CONFILCT OF INTEREST:

Authors declare no conflict of interest.

REFERENCES:

1. Cortes D, Kjellberg EM, Breddam M, Thorup J. The true incidence of cryptorchidism in Denmark. J Urol. 2008; 179(1): 314-8. DOI: 10.1016/j.juro.2007.08.158.
2. Wein AJ, Karoussi LR, Partin AW, et al. Campel-Walsh-Urology, 11th edition. Philadelphia, PA: Elsevier; 2016. P. 3560-2.
3. Kim SO, Hwang EC, Hwang IS, Oh KJ, Jung SI, Kang TW, Kwon D, Park K, Bang-Ryu S. Testicular catch up growth: the impact of orchiopexy age. Urology. 2011 Oct; 78(4): 886-9. doi: 10.1016/j.urology.2011.04.057.
4. Thonneau PF, Candia P, Mieusset R. Cryptorchidism: incidence, risk factors, and potential role of environment; an update. J Androl. 2003;24:155–162.
5. Toppari J, Kaleva M. Maldescendus testis. Horm Res. 1999 Dec;51(6):261-9.
6. Pettersson A, Richiardi L, Nordenskjold A, Kaijser M, Akre O. Age at surgery for undescended testis and risk of testicular cancer. N Engl J Med. 2007 May 3;356(18):1835-41.
7. PERAZZO G. [Surgical and hormonal therapy of cryptorchidism]. Riforma Med. 1950 Sep 23-30;64(38-39):1051-3.
8. Kolon TF. Cryptorchidism. AUA update Series. 2015; 34.
9. Mäkelä JA, Koskenniemi JJ1, Virtanen HE, et al. Testis development. Endocr Rev. 2018 Dec 26. doi: 10.1210/er.2018-00140. doi: 10.1210/er.2018-00140.
10. Hinman F Jr. Optimum time for orchiopexy in cryptorchidism. Fertil Steril. 1955; 6(3): 206-14. doi: https://doi.org/10.1016/S0015-0282(16)31981-1.
11. Alhazmi H, Junejo NN, Albeaiti M, et al. Timing of orchidopexy at a tertiary center in Saudi Arabia: reasons for late surgery. Ann Saudi Med. 2018 Jul-Aug;38(4):284-287. doi: 10.5144/0256-4947.2018.284.
12. Capello SA, Giorgi LJ Jr, Kogan BA. Orchiopexy practice patterns in New York State from 1984 to 2002. J Urol. 2006 Sep;176(3):1180-3. DOI: 10.1016/j.juro.2006.04.052.

13. Ahn H, Lee HE, Park K, et al. Reasons for delayed orchiopexies in a korean tertiary care hospital. Korean J Urol. 2014 Jan; 55(1): 69–73. doi: 10.4111/kju.2014.55.1.69.

14. Springer A, Subramaniam R, Krall C, et al. Orchidopexy patterns in Austria from 1993 to 2009. J Pediatr Urol. 2013 Oct;9(5):535-41. doi: 10.1016/j.jpurol.2012.08.003. J Pediatr Urol. 2013 Oct;9(5):535-41. doi: 10.1016/j.jpurol.2012.08.003.

15. Wenzler DL, Bloom DA, Park JM. What is the rate of spontaneous testicular descent in infants with cryptorchidism? J Urol. 2004 Feb;171(2 Pt 1):849-51. DOI: 10.1097/01.ju.0000106100.21225.d7.

16. Kollin C, Ritzén EM. Cryptorchidism: a clinical perspective. Pediatr Endocrinol Rev. 2014 Feb;11 Suppl 2:240-50.

17. Henna MR, Del Nero RG, Sampaio CZ, et al. Hormonal cryptorchidism therapy: systematic review with metanalysis of randomized clinical trials. Pediatr Surg Int. 2004 May; 20(5): 357-9. DOI: 10.1007/s00383-004-1198-3.