



CODEN [USA]: IAJPBB

ISSN : 2349-7750

## INDO AMERICAN JOURNAL OF PHARMACEUTICAL SCIENCES

SJIF Impact Factor: 7.187

<http://doi.org/10.5281/zenodo.4475082>Available online at: <http://www.iajps.com>

Research Article

### AGE SPECIFIC OUTCOME OF SINGLE STAGE ORCHIDOPEXY IN PEDIATRIC POPULATION: PROSPECTIVE COMPARATIVE STUDY.

<sup>1</sup>Kashifuddin Qayoom Soomro, <sup>2</sup>Mumtaz Ahmed Quraishi, <sup>3</sup>Shoukat Ali Mughal, <sup>4</sup>Azhar Hussain Shah, <sup>5</sup>Zakir Hussain Rajpar, <sup>6</sup>Javed Altaf Jat.

Article Received: November 2020

Accepted: December 2020

Published: December 2020

**Abstract:**

**Objectives:** The objective of this study is to assess the outcome of Orchidopexy performed within 18 months and after 18 months of life.

**Methodology:** All patients presented in outpatient clinic with unilateral/ bilateral undescended testis. Testicular volume was calculated on high frequency probe (7.5Mhz) ultrasound. All patients were planned after 2 weeks of initial visit for surgery. Patients operated within 18 months of life were categorized as Group A and patients operated after 18 months to 5 years of life were categorized as Group B. All patients had Open Single Stage Orchidopexy. Findings were documented and patient was discharged on 1<sup>st</sup> operative day. Patient was followed on 1<sup>st</sup> week for documentation of wound related complications and then at 6 months for assessment of testicular volume. Data was analyzed on SPSS version 23.

**Results:** A total of 170 testicular units were included in our study. In group A, mean age of operation was  $9.2 \pm 6.3$  (median=10) months and in group B was  $36.4 \pm 13.2$  (median=28) months. Seventy-six (44.7%) of undescended testicular units were on left side followed by 60 (35.2%) on right side and 34 (20%) of testicular units were bilateral. There was no statistically significant deference of laterality in both groups. Eighty (47%) of undescended testis were located in inguinal canal followed by supra-scrotal (n=46, 27%), high scrotal (n=37, 21.7%) and intra-abdominal (n=07, 4.1%). There was no statistically significant difference (p=0.8) of testicular location in both groups. Pre-operative testicular volume in group A were significantly higher as compared to the group B (p=≤0.05). when compared in terms of location, distal testicular units had statistically significant high volumes (p=<0.001) as compared to more proximal testis. Post-operatively, statistically significant growth seen in group B (p=<0.001).

**Conclusion:** Undescended testicular units on higher location has statistically significant low volumes as compared to near scrotum. in short term follow-up, early Orchidopexy shows non-significant growth as compared to patients having late Orchidopexy. Multi-centric, high volume and Long term follow-up are needed.

**Key words:** Undescended testis, Orchidopexy, Testicular volume.

**Corresponding author:**

**Kashifuddin Qayoom Soomro,**

Assistant Professor Urology – LUMHS, [kashifuddins@gmail.com](mailto:kashifuddins@gmail.com).

QR code



Please cite this article in press Kashifuddin Qayoom Soomro et al, Age Specific Outcome Of Single Stage Orchidopexy In Pediatric Population: Prospective Comparative Study., Indo Am. J. P. Sci, 2020; 07(12).

**INTRODUCTION:**

Data from subset of Pakistan population report prevalence of 16/1000 undescended testis [1], in west it is variably reported as 1-4% in term infants [2]. Undescended testis is one of the most common congenital urological condition in newborn males[3]. All guidelines recommend observation for initial 6 months of life if there is no spontaneous descend than Orchidopexy is intervention of choice [4,5,6]. Published literature clearly indicates early Orchidopexy and its advantages as near normal testicular growth, fertility potential and early detection of malignancy in long term bases [7]. Undescended testis can be classified as high-scrotal, supra-scrotal, inguinal and intra-abdominal [8]. Clinical examination is of paramount importance in identifying the genital anomalies. Ultrasonography can be performed for the documentation of testicular size and con-commitment renal pathologies, it is also an important tool to follow the patient and document parameters for long term studies [9]. Although majority of guidelines do not recommend ultrasound or MRI as diagnostic tool for undescended testis and laparoscopic interventions is the current method of choice [4,5,6]. Contrary to guidelines many centers report delayed presentation of patients and associated poor fertility potentials [10,11]. The Most of our patient population is diagnosed for undescended testis at the time of circumcision which is usually early years of life, which can be advantageous in terms of early intervention and fertility preservation. Many studies have included data of elder children in comparison with under 18 months age group, which obviously give statistically significant results [12]. Data of toddlers and pre-school age boys is not yet analyzed in comparison to under 18 month's group in our part of the world. we rationalized our study to compare the patients presented and intervened late after 18 months of life up till 60 months (5 years) with those who intervened earlier than 18 months. With this study, it will help us to assess the early volumetric changes in terms of operative period and according to location of testicular units.

**METHODOLOGY:**

Setting: JM Hospital Hyderabad

Study duration: March 2017 to March 2020.

All patients presented in outpatient clinic with unilateral/ bilateral undescended testis. Testicular volume was calculated on high frequency probe (7.5Mhz) ultrasound. Testicular volume was calculated with Hansen's formula [testicular volume =  $0.52 \times \text{length} \times (\text{width})^2$ ]. All patients were planned for surgery after 2 weeks of initial visit. Patients operated within 18 months of life were categorized as

Group A and patients operated after 18 months to 5 years of life were categorized as Group B. All patients had Open Single Stage Orchidopexy. Patients previously had 1<sup>st</sup> stage procedure, preoperatively or peri-operatively decided for staged procedure were excluded from the study. Findings were documented and patient was discharged on 1<sup>st</sup> operative day. Patient was followed on 1<sup>st</sup> week for documentation of wound related complications and then at 6months for assessment of testicular volume.

**RESULTS:**

A total of 170 testicular units were included in our study. In group A, mean age of operation was  $9.2 \pm 6.3$  (median=10) months and in group B was  $36.4 \pm 13.2$  (median=28) months. Seventy-six (44.7%) of undescended testicular units were on left side followed by 60 (35.2%) on right side and 34 (20%) of testicular units were bilateral. The group wise distribution is tabulated in Table # 1, there was no statistically significant deference of laterality in both groups. Eighty (47%) of undescended testis were located in inguinal canal followed by supra-scrotal (n=46,27%), high scrotal (n=37, 21.7%) and intra-abdominal (n=07, 4.1%). There was no statistically significant difference (p=0.8) of testicular location in both groups (Table # 2). Pre-operatively, supra-scrotal and inguinal testicular volumes in group A were significantly higher as compared to the group B (p= $\leq 0.05$ ). when compared in terms of location, distal testicular units had statistically significant high volumes (p= $< 0.001$ ) as compared to more proximal testis (Table # 3). Post-operatively, testicular growth in group A was not statistically significant. Interestingly, statistically significant growth seen in high scrotal, supra-scrotal and inguinal testicular units in group B (p= $< 0.001$ ) Table # 4.

**DISCUSSION:**

In our series majority of our patient population was clinically diagnosed at the circumcision clinic (mean= $22.8 \pm 9.7$ months), and our study population also co-relates with the published literature. Majority of our study population has unilateral undescended testis (77%), and right side UDT is predominant. Historically we also know that unilateral UDT is common as compare to bilateral UDTs, variable results are quoted in terms of laterality few studies are consistent with right side [15] and few report left as predominant site. In our study inguinal area was the common site of UDT (47%), Raees et al also quoted the similar findings from Pakistan. Chi-shin Tseng et al recently reported the testicular volume in co-relation with testicular location, he reported significant low volumes in testicular units located at supra-scrotal,

inguinal and supra-inguinal regions [13], our study also co-relate with published literature and indicates significant low volumes as the position of testis moves proximally. Very surprisingly, our study data indicates that patients who were operated before 18 months of age had no significant increase in testicular size after 6 months of orchidopexy as compared to the patients who were older than 18 months' age. Chi-shin Tseng also reported significant increase in testicular size in inguinal and above inguinal level testis. In our study population only 7 patients had intra-abdominal testis managed with single stage orchidopexy, due to small number of cases in each group, we didn't applied statistics, however the volume is significantly lower as compare to the high-scrotal or supra-scrotal testis. Worldwide there is strong notion to facilitate an early intervene for undescended testis. Very few centers proceed with timely orchidopexy. One of the contributing factor in delay of Orchidopexy is long waiting time. Recently published cohort from the data

of England, Finland, Ontario, Scotland, Sweden and Iceland concluded consistent lack of adherence to the guidelines. Multiple factors can be responsible for poor compliance, in our part of the world poor literacy level, Poor education systems, lack of awareness are leading factors. The parents can be motivated for early Orchidopexy and major role can be played by educating general physicians, health care workers, multi-media personals and volunteers from Non-Government Organizations (NGOs) [18].

### CONCLUSION:

Undescended testicular units on higher location has statistically significant low volumes as compared to near scrotum. in short term follow-up, Orchidopexy in patients presented late after 18 months of life shows statistically significant testicular volume increment. Parents education strategies should be made to spread the awareness and minimize the late presentation and complications of undescended testis.

Table # 1. Patient's Age and Laterality of testicular units			
	Group A n=83 (48%) (≤18months)	Group B n=87 (51.1%) (19 to 60 months)	p value
Age (mean= 22.8±9.7)	9.2±6.3 months	36.4±13.2 months	p<0.001
Unilateral Right n=60 (35.2%)	28 (33.7%)	32 (36.7%)	p=0.6
Unilateral left n=76 (44.7%)	36 (43.3%)	40 (45.9%)	
Bilateral n=34 (20%)	19 (22.8%)	15 (17.2%)	

Table # 2. Location of Undescended Testis			
	Group A n=83 (48%) (≤18months)	Group B n=87 (51.1%) (19 to 60 months)	p value
High Scrotal n=37 (21.76%)	18 (21.68%)	19 (21.83%)	p=0.8
Supra-Scrotal n=46 (27.0%)	25 (30.1%)	21 (24.1%)	
Inguinal n=80 (47.0%)	36 (43.3%)	44 (50.5%)	
Intra-abdominal n=07 (4.1%)	4 (4.8%)	3 (3.4%)	

Table # 3. Pre-operative mean testicular volumes.			
	Group A n=83 (48%) (≤18months)	Group B n=87 (51.1%) (19 to 60 months)	p value
High Scrotal n=37	0.323ml (0.251-0.491)	0.301ml (0.228-0.417)	p=0.8
Supra-Scrotal n=46	0.291ml (0.194-0.438)	0.216ml (0.189-0.397)	p=0.05
Inguinal n=80	0.241ml (0.132-0.299)	0.191ml (0.101-0.241)	p=0.03
Intra-abdominal n=07	0.151ml (0.06-0.241)	0.100ml (0.053-0.192)	###
	p<0.001	p<0.001	

Table # 4. Pre and Post-orchidopexy (6months follow-up) testicular volumes.						
	Group A n=83 ( $\leq 18$ months)			Group B n=87 (19 to 60 months)		
	Before	After	p value	Before	After	p value
High Scrotal	0.323ml (0.251-0.491)	0.357ml (0.279-0.520)	p=0.6	0.301ml (0.228-0.417)	0.443ml (0.319-0.461)	p=0.001
Supra-Scrotal	0.291ml (0.194-0.438)	0.336ml (0.231-0.504)	p=0.4	0.216ml (0.189-0.397)	0.328ml (0.246-0.475)	p=<0.001
Inguinal	0.241ml (0.132-0.299)	0.289ml (0.175-0.352)	p=0.5	0.191ml (0.101-0.241)	0.288ml (0.131-0.339)	p=<0.001
Intra-abdominal	0.151ml (0.06-0.241)	0.179ml (0.113-0.320)	###	0.100ml (0.053-0.192)	0.174ml (0.077-0.268)	###

## REFERENCES:

1. [Prevalence and Aetiology of Congenital Birth Defects, Infant Mortality and Mental Retardation in Lahore, Pakistan: A Prospective Cohort Study.](#) KH Gustavson - Acta paediatrica (Oslo, Norway: 1992), 2005
2. Management of undescended testes: European Association of Urology/ European Society for Paediatric Urology Guidelines. Radmayr C, Dogan HS, Hoebeke P, Kocvara R, Nijman R, Silay S, et al. J Pediatr Urol 2016; 12:335-43.
3. The frequency of undescended testis from birth to adulthood: a review. Sijtermans K, Hack WW, Meijer RW, van der Voort-Doedens LM. Int J Androl 2008;31:1-11.
4. Paediatric orchidopexy for undescended testis. London: Royal College of Surgeons of England (RCS); British Association of Urological Surgeons (BAUS), 2015.
5. Canadian Urological Association-Pediatric Urologists of Canada (CUA-PUC) guideline for the diagnosis, management, and followup of cryptorchidism. Braga LH, Lorenzo AJ, Romao RLP. Can Urol Assoc J 2017; 11:E251-60.
6. EAU Guidelines on Paediatric Urology 2018. Radmayr C, Bogaert G, Dogan HS, Kočvara R, Nijman JM, Stein R, et al. Arnhem (The Netherlands): European Association of Urology; European Society for Paediatric Urology, 2018.
7. A meta-analysis of the risk of boys with isolated cryptorchidism developing testicular cancer in later life. Lip SZ, Murchison LE, Cullis PS, Govan L, Carachi R. Arch Dis Child 2013;98:20-6.
8. Undescended testis. Cho A, Thomas J, Perera R, Cherian A. BMJ 2019; 364:1926.
9. The role of ultrasound in the management of undescended testes before and after orchidopexy -an update. Jedrzejewski G, Wiczorek AP, Osemlak P, Nachulewicz P. Medicine (Baltimore) 2016;95:e5731.
10. Age at surgery and outcomes of an undescended testis. Pediatrics Schneuer FJ, Holland AJ, Pereira G, Jamieson S, Bower C, Nassar N. 2016; 137:e20152768.
11. [Operative management of cryptorchidism: guidelines and reality - a 10-year observational analysis of 3587 cases.](#) Kai O. Hensel, Tawa Caspers, Andreas C. Jenke, Ekkehard Schuler, Stefan Wirth. BMC Pediatr. 2015; 15: 116.
12. [Age at presentation of undescended testicles: a single-center study in Saudi Arabia.](#) Jumanah H. Basalelah, Abdullah M. Alzahrani, Abdulaziz M. Alshaibani, Nasser S. Alalyani, Turki A. Alsubiani, Maha Khalid AlMadi, Ossamah S. Allsoawayan. Ann Saudi Med. 2018 Mar-Apr; 38(2): 137-139
13. [The impact of primary location and age at orchiopey on testicular atrophy for congenital undescended testis.](#) Chi-Shin Tseng, Kuo-How Huang, Ming-Chieh Kuo, Chung-Hung Hong, Chung-Hsin Chen, Yu-Chuan Lu, Chao-Yuan Huang, Yeong-Shiau Pu, Hong-Chiang Chang, I-Ni Chiang. Sci Rep. 2019; 9: 9489.
14. Correlation of the size of undescended testis with its locations in various age groups. [Syed Raees Hussain Taqvi, Jamshed Akhtar, Tayyaba Batool, Razia Tabassum, Farhat Mirza.](#) J Coll Physicians Surg Pak. 2006 Sep;16(9):594-7.
15. [Timing of Orchiopexy in the United States: A Quality-of-Care Indicator.](#) Jenny H. Yiee, Christopher S. Saigal, Julie Lai, Hillary L. Copp, Bernard M. Churchill, Mark S. Litwin, The Urologic Diseases in America Project. Urology. 2012 Nov; 80(5): 1121-1126.
16. [Timing of orchidopexy at a tertiary center in Saudi Arabia: reasons for late surgery.](#) Hamdan Alhazmi, Noor Nabi Junejo, Mohammed Albeaiti, Ahmad Alshammari, Hossam Aljallad, Ahmed Almathami, Santiago Vallasciani. Ann Saudi Med. 2018 Jul-Aug; 38(4): 284-287. Published online 2018 Aug 2. doi: 10.5144/0256-4947.2018.284

17. [Timing of paediatric orchidopexy in universal healthcare systems: international administrative data cohort study](#). M. A. Jay, A. Arat, L. Wijlaars, O. Ajetunmobi, T. Fitzpatrick, H. Lu, S. Lei, C. Skerrett, S. Goldfeld, M. Gissler, G. Gunnlaugsson, S. Hrafn Jónsson, A. Hjern, A. Guttmann, R. Gilbert. BJS Open. 2020 Dec; 4(6): 1117–1124.
18. [Management of undescended testis may be improved with educational updates and new transferring model](#). Wei Yi, Wu Sheng-de, Shen Lian-Ju, Lin Tao, He Da-wei, Wei Guang-hui. Ital J Pediatr. 2018; 44: 58.