



UNDESCENDED TESTIS: ITS ANATOMICAL LOCALIZATION AND TREATMENT, A STUDY IN JAMMU REGION.

Anatomy

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ABSTRACT

Genetic, hormonal and anatomical factors are believed to be involved in the etiology of undescended testis. Due to increased risk of infertility, testicular cancer, torsion and cosmetic concerns, all the patients require treatment. The purpose of this study is to find the anatomical localization of testis and the treatment modalities used. Age at diagnosis, uni/bilaterality, side -right/left in unilateral cases, anatomical localization, associated anomalies, treatment modalities used were noted. Majority of cases with undescended testis (UDT) were diagnosed within 6 months of age and most common location was intracanalicular. 98% of cases were unilateral, right side being more common than left side. Associated anomalies were noted in around 10% of cases. Commonest modality of treatment was surgical intervention.

KEYWORDS

Undescended testis, Anatomical localization, cryptorchidism.

INTRODUCTION -

Undescended testes known as cryptorchidism is defined as failure of the testes to descend from its intra-abdominal location into the scrotum. The term cryptorchidism is derived from the greek word 'kryptos' meaning 'hidden' and 'orchis' meaning 'testicle'(7). Testicular descent occurs in two phases, namely trans-abdominal and trans-inguinal. The trans-abdominal phase occurs between 7th and 15th week of pregnancy. Trans-inguinal phase, which follows trans-abdominal phase, is completed at 35th week of pregnancy. UDT is a common childhood condition in which a boy is born without having one or both testes in scrotum (6). It is a frequent clinical finding in boys, with a prevalence of about 2-4%. Genetic, hormonal and anatomical factors are believed to be involved in the etiology of undescended testes. Due to increased risk of infertility, testicular cancer, torsion and/or accompanying inguinal hernia as well as cosmetic concern all the cases need treatment(1). Undescended testes often resolve spontaneously as a consequence of the effect of leuteinizing hormone and FSH peak which occurs during the mini-puberty period. There are two approaches for undescended testes: hormonal and surgical. Surgery can be done by open as well as laproscopic approach. Use of hormonal therapy is still controversial. Surgical intervention includes orchiopexy and even orchidectomy in few cases (11). Despite the relatively high frequency of UDT a uniform classification suitable for clinical setting is not available. Many of the classification could only be used after surgery and are not suitable to be used for examination. Kaplan's classification is still regarded to be valid. This study was designed to find the common location of UDT in Jammu region and also the commonest mode of treatment used.

MATERIAL METHODS:

In the present study 100 cases diagnosed with UDT were studied in the department of surgery, GMC Jammu. The classification by Kaplan and Hack was used in order to determine the anatomical localization of testes. On manual examination of scrotum, if testes could not be palpated, patients were diagnosed as UDT. Exact localization was determined at palpation, aided by colour Doppler ultrasonography. Retractable testes were excluded from this series.

Following parameters were studied:

- 1) Age at diagnosis
- 2) Uni/bilateral
- 3) Side- right/left
- 4) Location of UDT classified as:



Figure 1

- Type 1-high scrotal
- Type 2- at external inguinal ring
- Type3- Intracanalicular (between the external and internal inguinal rings)

- Type4- intraabdominal
- 5) Associated anomalies
- 6) Treatment :
- a) Hormonal
- b) surgical

RESULTS:

Age of UDT diagnosis varied between 15-20 days to 6 months in 60% cases. 2-3 years in 30% cases and 18 years in 10% cases. 98% of UDT cases were unilateral and only 2% cases were found to be bilateral. Among the unilateral cases, 68% cases of UDT were noted on right side and 30 % cases were noted on left side. Using the described classification, location of UDT is as follows:-

- Type1-High scrotal in 20% cases
- Type 2-At superficial inguinal ring in 15% cases
- Type 3-Intracanalicular in 63% cases
- Type 4-Intra-abdominal in 2% cases

Associated anomaly noted was ipsilateral hernia in 5% cases and contra-lateral hernia in 3% cases, down syndrome was reported in 2 cases. No other associated anomaly was detected in the present study. There are two treatment approaches for undescended testes: hormonal and surgical. In the present study hormonal approach was not recommended considering the poor immediate results and possible long term adverse effects on spermatogenesis. Only 2 cases showed spontaneous descent by 4 months of age. All other cases in the present study were surgically treated. Orchiopexy was performed in 94% cases and even orchidectomy was performed in 4% cases. The cases in which orchidectomy was performed were those presenting at a later age where testes were atrophied and couldnot be brought down. Surgical treatment was simple and outcome better, as expected, when the testicles were located in a low position and operated at an early age. Preferable age for orchiopexy is between 6 -12 months of age.

6 years old child with undescended right testis and left sided congenital hernia

DISCUSSION-

Because of various complications associated with undescended testis, almost all cases require treatment. Despite a high prevalence of UDT, a uniform classification is not available and most of the classifications could only be used after surgery and are not suitable to be used for examination. In the present study Kaplan's and Hack classification is followed, which is most accepted. In the present study out of 100 cases studied majority of cases were diagnosed by 6 months of age. 98% and 2% cases were unilateral and bilateral respectively. While in a study done by Virtanen et al, 76% cases were unilateral and 24% cases were

bilateral which is not in accordance to the present study. In the present study majority of cases were located in inguinal canal that is, intracanalicular which is in accordance to the study done by Brouwere et al., 2010 and Kurkcuoglu A et al., 2017. In a study done by Shrivastava S et al, prevalence of UDT was more on right side (104 out of 212) and in inguinal region, which is in accordance to the present study. In a study done by Agrawal et al, anomalies found associated with UDT were inguinal hernia, hypospadias, Down syndrome, microcephaly, ventricular septal defect, atrial septal defect in 28.6% cases. While in the present study associated anomaly found was inguinal hernia, ipsilateral in 4% cases and contralateral in 3% cases.

CONCLUSION-

In view of the long term consequences of UDT on testicular function and the risk of testicular cancer, every case requires treatment. Despite the relatively high frequency of UDT, a uniform classification suitable for clinical setting is not available. Many of the classification could only be used after surgery. However, a defined and easily interpreted classification is essential for clinicians. Kaplan's classification is still regarded to be valid. The knowledge of descent of testes is needed because arrest of descent may be at any place. So surgeon require anatomy of descent of testes for surgery. The most common location of testis is on right side and in inguinal canal and it should be meticulously examined. We consider that knowing anatomical localization of testis before operation would guide the physician on planning surgery. Thus this study would be helpful for surgical intervention.

REFERENCES

- 1) Abaci A, Catli G, Anik A, Bober E. Epidemiology, classification and management of undescended testes: Does medication have value in its treatment? *J Clin Res Pediatr Endocrinol*. 2013 Jun; 5(2):65-72.
- 2) Agarwal et al, Study and management of undescended testes. *IJBAR*. 2013; 4(11).
- 3) Beltran-Brown F, Villegras-Avarez F. Clinical classification for undescended testes: experience in 1010 orchidopexies. *J Pediatr Surg*. 1988; 24: 444-447.
- 4) Brouwers MM, de Bruijne LM, de Gier RP, Zielhuis GA, Feitz WF, Roeleveld N. Risk factors for undescended testis. *J Pediatr Urol*. 2012; 8(1):59-66.
- 5) Comploj E, Pycha A. Diagnosis and management of cryptorchidism. *European Urol Supplements*. 2012; 11:2-9.
- 6) Cortex D. Cryptorchidism: aspects of pathogenesis, histology and treatment. *Scand J Urol Nephrol* 1988;(Suppl 196): 1-54.
- 7) Hack WWM, Meijer RW, Bos SD, Haasnoot K. A new clinical classification for undescended testes. *J Urol Nephrol*. 2003; 37(1): 43-47.
- 8) Hutson JM, Hasthorpe S, Heyns CF. Anatomical and functional aspects of testicular descent and cryptorchidism. *Endocr Rev*. 1997; 18(2): 259-280.
- 9) Jack S, Elder MD. The undescended testes: hormonal and surgical management. *Surg Clinics North America*. 1988; 68(5):983-1005.
- 10) Kurkcuoglu A, Otgun I, Pelin C, Zagyapan R, Tekindal MA. Undescended testis; its anatomical localization and aetiological factors. *Int J Urol Nurs*. 2013; 7(1): 17-24.
- 11) Ritzen EM, Bergh A, Bjerknes R, Christiansen P, Cortex D, Haugen SE, et al. Nordic consensus on treatment of undescended testes. *Acta Paediatr*. 2007; 96(5):608-610.
- 12) Srivastava S, Singh K. Anatomical correlation of undescended testes. *Ind J Clin Anat Phys*. 2016; 3(3):370-372.