

STUDY OF MANAGEMENT OF UN-DESCENDED TESTES IN CHILDREN OF JHARKHAND - (RETROSPECTIVE STUDY)

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ABSTRACT

Background: Un-descended testes (UDT), or cryptorchidism, and maldescended testes are normally located at the bottom of the scrotum. It may be unilateral or bilateral. The process of UDT is still unclear; surgical intervention will help for management UDT. **Materials and Methods:** 61 (sixty-one) children < 2 to 12 years of age were clinically evaluated and subjected to USG. The patients with palpable testes planned for orchiopexy. Nonpalpable abdominal testes were planned for diagnostic laparoscopy. During inguinal exploration, if cord structures or testicular remnants are found, they were removed. **Results:** 13 (21.3%) were < 2 years, 19 (31%) 2-4 years, 17 (27.8%) 5-9 years, 12 (19.6%) 10-12 years of age. The levels of UDT were 22 (36%) canalicular, 25 (40%) external ring, 8 (13.1%) internal ring, and 6 (9.5%) abdominal. **Conclusion:** Orchiopexy is the ideal treatment for UDT and laparoscopic treatment is for abdominal testes, but boys with retractile and acquired testes usually don't need medical or surgical treatment but require close follow-up until puberty. Such patients must be ensured that it will be set right spontaneously after puberty.

INTRODUCTION

Cryptorchidism or undescended testes, is the most common disorder of the male endocrine glands in children. Physical examination of the testes can be difficult. Further evaluation should be considered if normal testes cannot be definitely identified. Reasons for treatment of cryptorchidism are increased infertility, testicular malignancy, testicular torsion, trauma, and psychological stigma of an empty scrotum.^[1] It is also reported that cryptorchidism could be due to intra-uterine growth retardation, prematurity, perinatal asphyxia, cesarian section, toxemia of pregnancy, congenital subluxation of hip, or maternal diabetes.^[2]

About 1/3rd of premature boys have undescended testes (UDT) on at least one side, compared to 2-8% incidence in full-term boys, which makes cryptorchidism the most common anomaly in boys. The congenital UDT descends spontaneously mostly during the first months of life.^[3] Between 2 and 4th months of age, pituitary gonadotropins stimulate a sudden increase in testosterone hormone secretion, which peaks at about 3-6 months. This brief surge of gonadotropins and androgens is known as "mini puberty."

Unilateral UDT is four times more common than bilateral. Occasionally vanishing testes are seen in

which testicular vessels and vas deferens are found on surgical exploration but testes are absent.^[4]

Apart from the latest imaging techniques, the exact location and etiology of UDT is still unclear; hence, an attempt is made to evaluate the study and management of UDT.

MATERIALS AND METHODS

61 (sixty-one) children at different age groups who regularly visited to Medinirai Medical College, Hospital Palamu, Jharkhand-822101, were studied.

Inclusive Criteria: Patients with non-palpable testes in the scrotum presented in the paediatric or surgery OPD. The parents/guardians who gave their consent in writing for the study were selected.

Exclusion Criteria: The patients with retractile testes and ectopic testes were excluded from the study.

Method: Every patient was clinically evaluated and was subjected to ultrasonographic examination. The patients with palpable testes were planned for open orchiopexy. Non-palpable abdominal testes were planned for diagnostic laparoscopy. During inguinal exploration, if cord structures or testicular remnants were found, they were removed and the procedure was terminated after dealing with any congenital hernia. Standard orchiopexy is done if the testes are found to be viable and the vessels of sufficient length.

Microvascular orchiopexy was done in another setting for viable intra-abdominal undescended testes with short vessels.

In some cases the groin incision to enter extended to the testicle and seared the testicle. The testicular vessels were divided high retroperitoneally. A donor vascular pedicle of sufficient length was prepared by dissection under magnification of inferior epigastric vessels to a high level beneath the rectus abdominis. The testicle was inspected to ensure that a dependent scrotal position could be achieved without tension on the vas. The testicle was brought out through the scrotal incision and secured with interrupted absorbable sutures in the dartos pouch.

The duration of study October 2024 to November 2025

Statistical analysis: Different age groups and various types of undescended testes were classified by percentage. The statistical analysis was carried out in SPSS software.



Figure-B- Testis in right Inguinal canal



Figure-A- Empty right hemiscrotum



Figure-C- Testes Placed in scrotum

RESULTS

Table-1: Distribution of age of the patients in the undescended testes – 13 (21.3%) patients were < 2 years, 19 (31%) patients were 2-4 years of age, 17 (27.8%) were 5-9 years of age, 12 (19.6%) were between 10-12 years of age.

Table-2: Study of level of un-descended of testes – 22 (36%) had canaicular, 25 (40%) were at external ring, 8 (13.1%) were at internal ring, 6 (9.8%) were at abdominal level.

Table 1: Distribution of age of the patients in un-descended testes

Age (years)	No. of patients	Percentage %
< 2 years	13	21.3
2-4 years	19	31.1
5-9 years	17	27.8
10-12 years	12	19.6

Table 2: Study of levels of un-descended testes

Level of descant	Normal	Atrophy	Total Number	Percentage %
Canalicular	17	5	22	36

External ring	22	3	25	40
Internal ring	5	3	8	13.1
Abdominal	3	3	6	9.8
Total	47	14	61	100

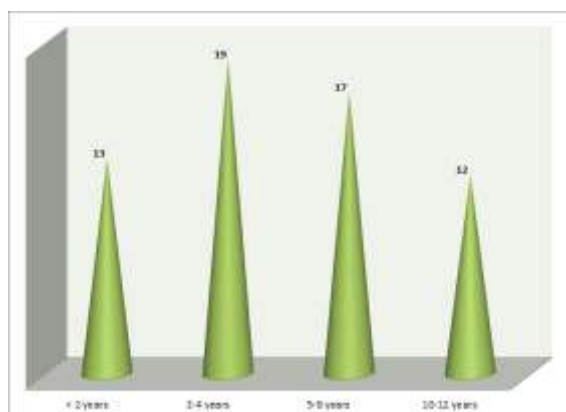


Figure 1: Distribution of age of the patients in undescended testes

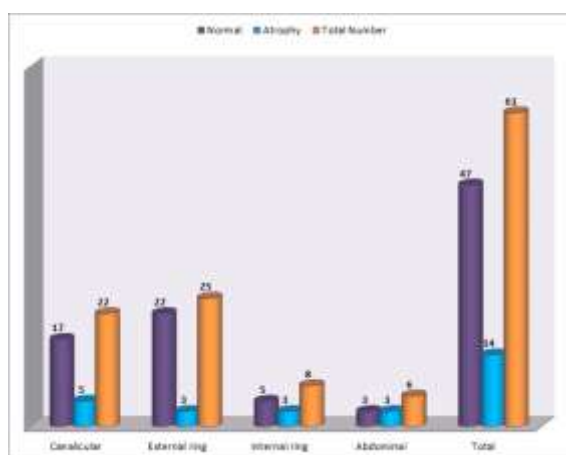


Figure 2: Study of levels of undescended testes

DISCUSSION

The present study of management of UDT in Jharkhand children: 13 (21.3%) were < 2 years, 19 (31.1%) were 2-4 years of age, 17 (27.8%) were between 5-9 years of age, 12 (19.6%) were between 10-12 years of age (Table-1). 22 (36%) were at the canalicular testes, 25 (40%) were at the external ring, 8 (13.1%) were at the internal ring, 6 (9.8%) were at the abdomen (Table-2) (Figure A, B and C). These findings are more or less in agreement with previous studies.^[5,6,7]

In most mammalian species the testes must descend from the warmer intra-abdominal environment into the cooler scrotum to produce viable and mature spermatozoa. Cooling of the testes via migration into the scrotum is a phylogenetic mechanism that humans have retained in order to propagate the species. The scrotum and inguinal canals are stretched by the developing gubernaculum, and as a result, the testis sits on top of the gubernacular slips and rapidly into scrotum.^[8] Moreover, hormones play a pivotal role in testicular descent except in the initial transabdominal phase of migration of testes to the

internal inguinal ring. Gonadotrophins, including hCG, and androgens descend in and MIS are necessary for testicular descent. The descent appears to be regulated primarily by DHT rather than testosterone. Abnormalities of the hypothalamic-pituitary axis are frequently associated with undescended testes (UDT), suggesting an important role of gonadotropins and androgens. Hence, cryptorchidism is common in anencephaly, pituitary aplasia, and Willi and Kallman syndrome.^[9]

Microscopically UDT is normal at birth; pathological changes occur at about 6 to 12 months. Delayed germ cell maturation, degeneration of mitochondria, loss of ribosomes, and increase in collagen fibers are in spermatogonia and sertoli cells. UDT may present various complications like torsion, trauma, inguinal hernia, infertility, atrophy, malignancy, and psychological stress.^[10]

Various surgical procedures include cord lengthening procedures, fixations, orchiectomy, orchiopexy, and microvascular autotransplantation. Testes are not sutured to any structure in fixation. These include procedures such as fixation in the Dartos pouch (between subcutaneous skin and Dartos muscle), Ombredanne's procedure (testes are put into a compartment of the other testicle), and the Dennis Brown procedure (neck of the scrotum is narrowed with a purse string catgut suture). Orchiectomy is performed for intra-abdominal dysgenetic testes.

Children were evaluated every year after surgery to assess location, size, and viability of testes and any tumors. At puberty children are re-examined and trained to perform testicular self-examination every month.

CONCLUSION

The present study of UDT in children at different age groups was treated according to their location, and laparoscopy for non-palpable or abdominal testes was performed. But this study demands further pathophysiological, hormonal, nutritional, environmental, embryological, and genetic study because the exact factors and mechanism of descent of testes are still unclear.

Limitation of study: Owing to remote location of research centre, small number of patients, lack of latest techniques, we have limited findings and results.

- This research work was approved by Ethical committee of Medinirai Medical College, hospital Palamu, Jharkhand-822101.
- No Conflict of Interest
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