MANAGEMENT OF UNDESCENDED TESTES IN A TERTIARY CARE HOSPITAL: A STUDY FROM CENTRAL INDIA

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ABSTRACT: INTRODUCTION: The goal of management of a non-palpable testis is to identify whether a viable testis is present and, if so, either perform an orchiopexy or, in selected cases, an orchiectomy. Management of palpable undescended testis is quite straightforward and diagnostic studies are usually not necessary. However, management of non-palpable testes is more complex. **MATERIAL AND METHODS:** It was a prospective hospital based study conducted in the department of surgery, Chirayu Medical College, Bhopal during the period of January 2012 to June 2014. 30 patients were selected in the study. Surgical management was not done before 6 months of age. Open orchiopexy was performed in palpable group. For impalpable group, diagnostic laparoscopy was done and managed accordingly. **RESULTS:** Forty undescended testes were operated upon, of which twelve (40%) were situated in the inguinal canal, twelve (40%) external ring and three (10%) each at the level of internal ring and intra-abdominal respectively. 6 patients (aged five to nine years) with canalicular testes had macroscopically atrophic testes, as did three (aged four to twelve years) with abdominal testes and one (two years) with the testes at the level of the internal ring. **CONCLUSION:** Laparoscopy is a safe and effective method for the diagnosis of non-palpable and undescended testis. Microvascular orchiopexy is a feasible technique even in small children with good results. **KEYWORDS:** Orchiopexy, Impalpable testis, Diagnostic Laparoscopy.

INTRODUCTION: The testes are specialized paired organs that produce spermatozoa and androgenic hormones. By the 35th to 40th week of gestation they descend into the scrotum where they function optimally at 33°C; a 3-4°C less than core body temperature. ¹ Testes located in the inguinal canal or abdomen are exposed continuously to 35°C and 37°C respectively, with consequent progressive alteration in morphology and physiologic functions as well as an increased risk of complication. ^{1,2,3}

The retractile testis has no pathological consequence while the ascending and truly ectopic testis are rare.⁴ Undescended testis is defined as a testes that cannot be manipulated to the bottom of the scrotum without undue tension on the spermatic cord. There is variability in nomenclature relating to undescended testis but the clearest classification is palpable and non-palpable testis.⁵

At age 2 years, a testis residing outside the scrotum and in the high temperature zones in the abdomen or inguinal canal would start to deteriorate and this become established at age of five years.

Early surgical correction helps to avert this and reduce the risk of complication. In developed countries where the level of awareness is high and patients present early, the rate of complications is low. In a developing country, however, patients present either following accidental discovery by health workers, parents/caregivers or after complications have taken place. ⁶

The goal of management of a non-palpable testis is to identify whether a viable testis is present and, if so, either perform an orchiopexy or, in selected cases, an orchiectomy.

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Management of the palpable undescended testis is quite straightforward and diagnostic studies are usually not necessary. However, management of non-palpable testes is more complex.

The aim of this study was that those patients presented with undescended testis in our hospital is to determine the pattern of presentation, the location/nature of testis as seen intra operatively, complications recorded, the surgical treatment offered and outcome, so as to make recommendations that may lead to improved results.

MATERIAL AND METHODS:

Design: It was a prospective hospital based study.

Place: Tertiary care hospital, Bhopal.

Duration: January 2012 to June 2014.

Study population: 30 patients with non-palpable testes presented to surgery OPD,

Ethical Clearance: After approval from the ethical committee.

PROCEDURE: All patients were clinically evaluated and were subjected to ultrasonographic examination. Patients with palpable testis were planned for open orchiopexy. Impalpable intra-abdominal testis 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 was done if the testis is found to be viable and the vessels of sufficient length. Microvascular orchiopexy was done in another setting for viable intra-abdominal undescended testis with short vessels.

In some cases we explored the groin with extended incision to enter the peritoneum and search for 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 high level beneath the rectus abdominis. Testicle was inspected to ensure that a dependent scrotal position can 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. (Image 1, 2, 3)

RESULTS: The thirty children had 40 undescended testes. Fifteen patients (50%) presented as a result of an empty scrotum noticed since birth, 12 (40%) due to groin swelling and three (10%) due to pain.

Age at Surgery: The age at surgery was fifteen months to 12 years. Six patients (20%) had correction before two years, 09 (30%) before five years and 15 (50%) at age ≥ 5 years (Table 1). Fifteen patients (50%) had first contact with medical personnel at peripheral clinics and hospitals before two years but the parents were only reassured.

Laterality and level of Descent: Testicular undescend was right sided in fifteen patients (50%), left 12 (40%) and bilateral three (10%). The penis was normal in all who had bilateral undescend. The operative findings are summarized in (Table 2). Forty undescended testes were operated upon, of which twelve (40%) were situated in the inguinal canal, twelve (40%) external ring and three (10%) each at the level of internal ring and intra-abdominal respectively.

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6 patients (aged five to nine years) with canalicular testes had macroscopically atrophic testes, as did three (aged four to twelve years) with abdominal testes and one (two years) with the testes at the level of the internal ring. Associated hernia sacs were found with 15(50%) testes, six (20%) of which testes were atrophic (canalicular five, abdominal one).

DISCUSSION: In the present study, however, the age at surgery was fifteen months to 12 years. Six patients (20%) had correction before two years, 09 (30%) before five years and 15 (50%) at age ≥ 5 years, by which time significant morphological changes would have occurred in the testis. This finding is similar to a report from Dar es Salaam, Tanzania⁷ in which 42.5% had surgery by five years.

In our environment, the current median age at surgery is six years; the reasons for this delay include, late presentation, ignorance of initial attending doctors regarding age at optimal treatment and lack of recognition by midwives. To improve on the age at surgery, it is necessary to educate parents, midwives and doctors as suggested before.⁸

In our study, Forty undescended testes were operated upon, of which fifteen (50%) were situated in the inguinal canal, nine (30%) external ring (one was impalpable clinically) and three (10%) each at the level of internal ring and intra-abdominal respectively. Whereas in a similar study done by Ameh EA, Mbibu HN in Nigeria nineteen (45%) were situated in the inguinal canal, thirteen (31%) external ring (one was impalpable clinically) and five (12%) each at the level of internal ring and intra-abdominal respectively.⁹

In our study 06 (20%) of the patients had testicular atrophy compared to the 24 % patients in the study done by Ameh EA, Mbibu HN in Nigeria.⁹ To date, the most reliable diagnostic method for the impalpable testes is laparoscopy.¹⁰ It has been shown that fertility after treatment for unilateral undescended testis is about 84%, bilateral 60% and overall 79%.¹¹

CONCLUSION: Open orchiopexy is the standard surgical treatment of palpable undescended testis. Laparoscopy is a safe and effective method for the diagnosis and management of non-palpable intra-abdominal testis. Microvascular orchiopexy is a feasible technique even in small children with good results. However, a larger study with long term follow-up is needed. Early detection and management of this condition has favorable results.

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Age (years)	No.(%)
<2	06 (20)
2-4	09 (30)
5-9	09 (30)
10-12	06 (20)
Total	30 (100)

Table no.1: Age at operation for undescended testes in 30 children

Level of descent	Normal	No. atrophy	Total
Canalicular	10	2	12
External ring	11	1	12
Internal ring	02	1	03
Abdominal	01	2	03
Total (%)	24 (80)	06 (20)	30 (100)

Table no. 2: Level of descent and gross appearance of 40 undescended testes

IMAGE1: Empty right hemiscrotum

IMAGE 2: Testis in Inguinal canal

IMAGE 3: Testis Placed in scrotum

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