

## Management of Nonpalpable Testes in Children Bangladesh

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### Abstract

### Original Research Article

**Objectives:** In this study our main goal is to evaluate the management of nonpalpable testes in children Bangladesh. **Methods:** This cross-sectional observational study was done in the department Pediatric Surgery, Dhaka Shisu (children) Hospital (DSH), Dhaka, from March 2012 to September 2013. The study included 30 children with nonpalpable testis either unilateral or bilateral. A descriptive analysis was performed for clinical features and results were presented as mean  $\pm$  standard deviation for quantitative variables and numbers (percentages) for qualitative variables. **Results:** During the study (45%) cases primary orchiopexy done and in (5%) cases decided for stages procedure. In 22 impalpable testes (50%), vas deferens and testicular vessels were through the internal inguinal ring, of which 3 (6.8%) found only testicular remnants that were excised. 20 (45%) testes found intra-abdominally within <3cm. 2 (5%) testes in high (>3cm) intra-abdominal position. **Conclusion:** From our study we can conclude that, Laparoscopic procedure presents excellent results in terms of diagnosis and therapy of the impalpable testis in children, so this technique has been routinely incorporated in Bangladesh.

**Keywords:** Vas deferens, nonpalpable testes, laparoscopy surgery.

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## INTRODUCTION

Surgery for the nonpalpable testicle is diagnostic and potentially therapeutic. Initially, it is important to determine whether a testis exists. If the absence of a testis is surgically confirmed by identifying blind-ending testicular vessels, the surgery should be terminated. Intra-abdominal blind-ending vessels are found in 9.8 percent of boys with nonpalpable testes [1-3].

Sometimes the testicular vessels are traced to an abdominal, inguinal or scrotal testicular remnant,

which is then removed. In about one half of cases, an intra-abdominal testis is found through, which is either brought to the scrotum or removed.

The two initial surgical approaches to the nonpalpable testis are the open inguinal and diagnostic laparoscopic techniques. In the open inguinal approach the groin is explored. If cord structures or testicular remnants are found, they are removed, and the procedure is terminated. If the groin exploration is negative, the incision is extended, and the peritoneum is entered in a search for an intra-abdominal testis [4].

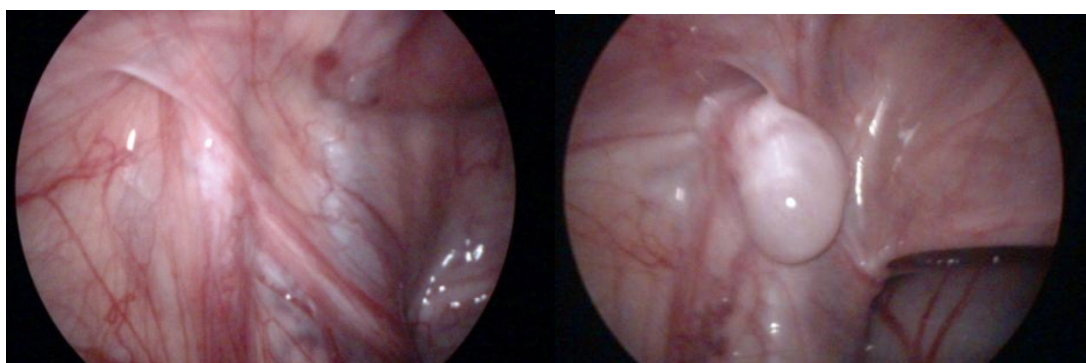


Fig 1a and 1b: Open ring through which vas and vessels existing and laparoscopic picture showing low intra-abdominal testis

The second surgical approach to the nonpalpable testis is laparoscopic. Diagnostic laparoscopy, which is a safe procedure in experienced hands, is performed initially [5].

Using a laparoscope placed through the umbilicus, the inguinal rings are examined, and the status of the processus vaginalis (patent or non-patent), wolffian structures and testicular vessels can be easily identified. The presence of blind-ending spermatic vessels confirms an absent testis, allowing termination of the procedure without a groin incision. If vessels and vas deferens exit the internal ring, the groin can be explored. If an intra-abdominal testis is identified, the physician can then choose the best surgical approach [6].

## METHODOLOGY

Type of study	Cross-sectional observational study
Place of study	Department of Pediatric Surgery, Dhaka Shisu (children) Hospital (DSH), Dhaka.
Study period	March 2012 to September 2013.
Study population	The study included 30 children with nonpalpable testis either unilateral or bilateral.
Sampling technique	Purposive

### Inclusion Criteria

- Patients with nonpalpable testes under the age of 16 years

### Exclusion Criteria

- Patient having prune-belly syndrome, inter sex anomaly, ectopic testes and underwent inguino-scrotal surgery for any cause.

## METHOD

During the study, the principal investigator had collected the data and evaluated the relevant investigations in the department of pediatric Surgery, Dhaka Shisu (children) Hospital. A Data sheet was filled out during data collection. In each case, information about the patient was collected in a prescribed questionnaire after getting written consent from the parents or legal guardians in a preformed consent form.

**Table-1: Distribution of admitted patients with UDT and NPT**

Total patients during study period	No. of UDT patients	No. of NPT patients	Percentage (%)
4283	172	35	0.7%

In Table-2 shows distribution of the patients according to age where only 17% patients belong to 6 months – 1-year age group, where 37% belong to 2-5 years age group. The following table is given below in detail:

In this study our main goal is to evaluate the management of nonpalpable testes in children Bangladesh.

## OBJECTIVE

### General Objective

- To assess the management of nonpalpable testes in children Bangladesh.

### Specific Objective

- To identify' laparoscopic procedures time
- To detect admitted patients with UDT and NPT.

### Data Analysis

Statistical analysis was performed using the Statistical package for social science SPSS version 15.0. A descriptive analysis was performed for clinical features and results were presented as mean  $\pm$  standard deviation for quantitative variables and numbers (percentages) for qualitative variables. Fisher's exact test was used for categorical variables. All p-values were considered as statistically significant if  $< 0.05$ .

## RESULTS

In Table-1 shows distribution of admitted patients with UDT and NPT where the total numbers of patients admitted in DSH during the study period were 4283, of which 172 had undescended testis. Amongst these, 35 were non palpable testes. The following table is given below in detail:

**Table-2: Distribution of the patients according to age**

Age group	%
6m-1 year	17%
1-2 year	20%
2-5 year	37%
5-10 year	26%

In Table-3 shows laparoscopic location of testes (30 patients with 44 NPT) where in 22 impalpable testes (50%), vas deferens and testicular vessels were through the internal inguinal ring, of

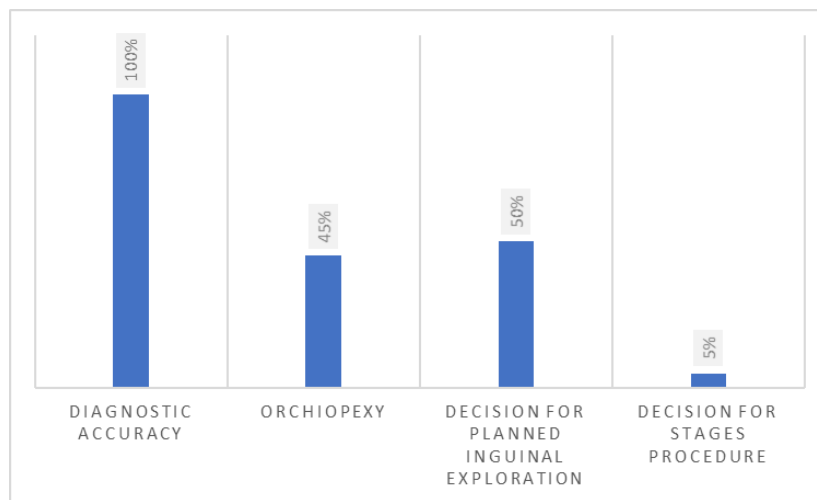
which 3(6.8%) found only testicular remnants that were excised. 20 (45%) testes found intra abdominally within <3cm. 2 (5%) testes in high (>3cm) intra abdominal position. The following table is given below in detail:

**Table-3: Laparoscopic location of testes (30 patients with 44 NPT)**

Findings	Location	Frequency	Percentage
Entrance of vas and vessels into the Inguinal canal	Inguinal canal	22	50%
Intra-abdominal, <3cm from deep ring (below pelvic inlet).	Low intra abdominal	20	45%
Intra-abdominal, >3cm from deep ring (above pelvic inlet).	High intra abdominal	02	5%
Only testicular remnant both in inguinal and abdominal in position.	-	04	09%

In Figure-2 shows distribution of laparoscopic findings where in (50%) cases, diagnosed by laparoscopy as vas and vessel entered into deep ring underwent planned inguinal exploration. In (45%) cases

primary orchiopexy done and in (5%) cases decided for stages procedure. The following figure is given below in detail:



**Fig-2: Distribution of laparoscopic findings**

In Table-4 shows distribution of laparoscopic procedures time where the mean operation time was 12 min (10-15) for diagnostic laparoscopy, 22 min. for

unilateral laparoscopic orchiopexy and 42 min. for the bilateral cases. The following table is given below in detail:

**Table-4: Distribution of laparoscopic procedures time**

Procedure	Range of time (min)	Mean time(min)
Diagnostic	10-15	12
Unilateral orchiopexy	15-35	22
Bi-lateral orchiopexy	30-60	42

## DISCUSSION

In the literature, it was reported that the accuracy rate of laparoscopy in determination of the location of the testes was more than 95% but we had reached 100% accuracy [7].

Laparoscopy helps to localize testes and guide the operation and can be used safely in all age groups, especially in children. Blind-ending spermatic vessels obviate no need of other investigational techniques and can be considered as absence of testes. Absence of testes is usually due to prenatal or perinatal torsion. When spermatic vessels are through the internal inguinal ring, it is obligatory to assess the inguinal

canal. These vessels may extend to a testis, which can be small, and the testis may contain remnants of seminiferous tubules, which must be removed. During an inguinal exploration, one study observed two of 14 undescended testes (14.3%) were extremely atrophied. These patients underwent orchiectomy [8]. In current series, we had done orchiectomy in 4(9%) case the same reason.

One study performed diagnostic laparoscopy in 96 patients with 117 impalpable testes and found intra abdominal testis and vanishing intra-abdominal testis in 24% and 7% of the patients respectively. There were descended vas deferens and spermatic vessels through the internal ring in 66% of the patients, but

where no vas deferens and spermatic vessels in 3% of the patients. They reported that all patients underwent exploration through a high inguinal incision and 31.6%, 30.7% and 1.7% of the cases in which vas deferens and spermatic vessels descended through the internal ring had vanishing testis, canalicular testis and ectopic testis respectively [8].

Diagnostic laparoscopy rarely causes complications in cases of impalpable testis. The anterior wall of the abdomen is thinner in children than in adults and therefore laparoscopy may have a higher risk of complications in children if an appropriate Veress needle is not used, Vessels and intestines may be damaged during peritoneal insufflations or during the insertion of the needle, though the complication rarely occurs.

Laparoscopy makes it possible to avoid unnecessary surgical interventions in the cases of impalpable undescended testis and helps localize the testes, determine paratesticular pathologies, select an appropriate surgical procedure and perform orchiopexy safely. In fact, unnecessary surgical operations can be avoided in 42% of the cases [9]. Moreover, associated hernia with non palpable testis can be approached simultaneously.

Although the mean operation time is usually longer in laparoscopy compared to historically ascribe open operations, with experience the duration can be shortened. Laparoscopy is an important alternative in the diagnosis and treatment of impalpable testes because it has the advantages of an acceptable rate of complication, less severe postoperative pain, smaller scar, shorter in hospital stay and early return to home.

## CONCLUSION

From our study we can conclude that, Laparoscopic procedure presents excellent results in terms of diagnosis and therapy of the impalpable testis in children, so this technique has been routinely incorporated in Bangladesh.

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