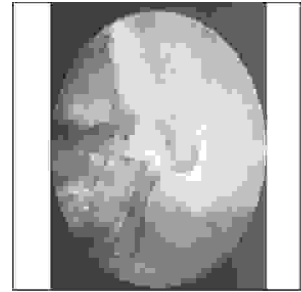


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## LAPAROSCOPIC ORCHIDOPEXY



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**ABSTRACT...** [mzubaira@hotmail.com](mailto:mzubaira@hotmail.com) **Design** Case series. **Setting:** Pediatric surgical department of B V Hospital (QAMC) Bahawalpur and Allied Hospital Faisalabad. **Period:** From April 2005 to Mar 2007. **Material & Methods:** Cryptorchidism is most frequent presentation in pediatric population. Laparoscopy has become "Gold Standard" in the diagnosis and therapy of nonpalpable undescended testis. We present our two year experience in the management of 40 cases at two centers. The age of the patients ranged from 9 months to 12 years. Laparoscopy was done to localize the testis prior to surgery. Thirty four patients underwent one stage laparoscopic orchidopexy, 7 patients had open orchidopexy and 3 needed two stage Fowler-Stephen orchidopexy. Laparoscopy is a valuable tool in both diagnosis and treatment of nonpalpable testis.

**Key words:** Laparoscopy, Orchidopexy, Cryptorchidism

## INTRODUCTION

Cryptorchidism is a common presentation in pediatric group. Its incidence varies from 0.8 to 1.8% at the age of 1 year<sup>1</sup>. In nearly 20-27% of cases, testis are nonpalpable<sup>2,3</sup>. A nonpalpable testis may be either present in the abdomen or inguinal canal or absent. Various imaging techniques has been used in the past few years to determine the exact site of testis. But none of them is completely reliable<sup>4,5</sup>. After the use of laparoscopy in the diagnosis of undescended testis it has gained wide acceptance. Jorden was pioneer to apply

laparoscopy for therapeutic purposes in boys with undescended testis. Winston introduced the use of scrotal trocar to aid in delivering of testis into the scrotum<sup>6</sup>. Laparoscopy permits not only the localization of testis but also planning for a better therapeutic program with minimally invasive procedure<sup>7</sup>.

## MATERIAL & METHODS

Over a period of 2 years, 40 patients with clinically nonpalpable testis were studied. Study design; Case series. Setting: Department of Pediatric Surgery

Bahawal-Victoria Hospital, Quaid-e-Azam Medical College Bahawalpur and Allied Hospital Faisalabad. Sample size: 40 patients. Duration of Study: Two years (April 2005 – March 2007).

### Inclusion criteria

All children above 9 months with nonpalpable of testis

### Exclusion criteria

Patient with cardiovascular diseases or not fit for laparoscopy.

All the patients underwent diagnostic laparoscopy under general anesthesia. Prior informed consent was taken from parents. Procedure was done in trendelenberg position. A 3 mm trocar was introduced in abdominal cavity through supraumbilical incision by Hasson technique. The peritoneal cavity was insufflated with carbon dioxide to maximum of 10 mm Hg. With 3 mm storz camera, 0-degree lens abdominal inspection was done. Various abdominal landmarks were identified. The testis were classified according to the findings as:

- \* Intracanalicular: if spermatic vessels and vas deference were entering the internal ring
- \* Vanishing testis: Blind ending vas and vessels
- \* Testicular agenesis: Vas without vessels

Depending upon the findings, definitive procedure was planned in the form of laparoscopic or open orchidopexy, Fowler-Stephen staged procedure or orchiectomy. For laparoscopic orchidopexy another two 3 mm ports were introduced in both iliac fossa in mid clavicular line.

The patients were followed in outpatient department for six months. They were evaluated for the position and the size of testis. Data were recorded on the proforma and was subjected to statistical analysis.

## RESULTS

The median age of the patients was 4 years (9 month-12 years). Right testis was nonpalpable in 20 patients (50%), left testis in 12 patients (30%) and both in 8 (20%). All the patients underwent diagnostic laparoscopy. The findings are summarize in table I.

Out of 19 patients with intra-canalicular testis, 12 underwent laparoscopic orchidopexy and 7 had open orchidopexy. In 20 patients with intra abdominal testis, I-stage Fowler-Stephen orchidopexy was performed, while other 3 needed II-stage Fowler-Stephen orchidopexy. Second stage was performed six month after the first operation. In two patients it was completed laparoscopically and 1 patient underwent orchiectomy due to atrophic testis.

Laparoscopic findings	No. of pts	%age
Intra abdominal	23	48%
Intra canalicular	19	40%
Internal ring	6	10%
Atropic	1	2%

Four patients in which testis were present near the internal ring, I-stage Fowler-Stephen orchidopexy was planned while in the remaining 1 patient, open orchidopexy was performed. For atrophic testis, laparoscopic orchiectomy was performed. Mean operating time was 52.2 minutes. In the post operative period, 3 patients developed scrotal hematoma while one patient testis was retracted which was later on re-operated. The patients were followed up for six months. At the last follow-up 45 out of 48 testis were found in the scrotum and were of good size (1.5 – 2.5 cm).

## DISCUSSION

The management of nonpalpable in pediatric group is still a diagnostic and therapeutic challenge<sup>8</sup>. There is increased risk of malignant transformation and infertility in undescended testis<sup>9</sup>. The accurate localization of an intraabdominal testis helps in better planning of a definite surgical procedure. Various diagnostic and imaging methods to localize the testis lack sufficient accuracy. A laparotomy or extraperitoneal exploration was needed if testis are not localized by these techniques<sup>10</sup>. Laparoscopy was introduced as a less invasive diagnostic tool in cases of cryptorchidism in late 70's. Later on it was used for orchidopexy with minimal complications<sup>11</sup>. Laparoscopy gives us the exact

information about the presence, position and size of the nonpalpable testis. The important feature of laparoscopy for nonpalpable testis is the identification of vas and vessels of testis<sup>12</sup>.

In our study the common site for testicular presence was in the abdomen (50%). With the help of laparoscopy it is possible to distinguish between high and low intraabdominal testis depending upon its distance from the pelvic brim and internal ring. If the distance is more than 4 cm it is an indication of easy subsequent orchidopexy. In the diagnosis of vanishing testis, laparoscopic identification of blind-ending testicular vessels prior to entering the internal ring is sufficient and it does not need further surgical exploration. In the present study we present our preliminary experience with laparoscopy. With stretching maneuver cord length can be assessed. If it reaches to the opposite internal ring, orchidopexy can be planned; if it fails then staged approach should be considered. In our study, 20 patients with intraabdominal testis underwent laparoscopic I-stage Fowler-Stephen orchidopexy and 3 needed II-stage FS orchidopexy. The limiting factor the I-stage procedure in these cases was short length of testicular vessel.

For the low intraabdominal testis near the internal ring can either be explored through conventional open groin approach or laparoscopic orchidopexy can be considered. Sixteen cases were completed successfully by laparoscope in our study. One patient with atrophic testis underwent laparoscopic orchidopexy, so Lapartomy can be avoided in cases of intraabdominal vanishing or atrophic testis. Jordan, Docimo and Poppas have reported the use of laparoscopic surgery in the management of nonpalpable undescended testis. They found the convincing results with single-stage procedure<sup>6,13,14</sup>.

## CONCLUSION

Laparoscopy is a valuable diagnostic and therapeutic tool orchidopexy for the nonpalpable undescended testis.

## REFERENCES

1. Poenaru D. **Laparoscopic management of the nonpalpable abdominal testis.** Urology. 1993; 42:574-8.
2. Espotio C, Damiano R, Gonzlaez Sabin MA, Savanelli A, Centonze A, Settini A, Sacco R. **Laparoscopy-assisted orchidopexy: an ideal treatment for children with intra-abdominal testis.** J Endourol. 2002; 16:659-62.
3. Godbole PP, Najmaldon AS. **Laparoscopic orchidopexy in children.** J Endourol. 2001; 15:251-253.
4. Herbinko R, Belling MR. **The limited role of imaging techniques in imaging children with undescended testis.** J Urol. 1993; 150:458-60.
5. Maghnie M, Vanzulli A, Paesano P. **The accuracy of MRI and Ultrasonography compared with the surgical techniques in localization of undescended testis.** Arc Pediatr Adolesc. Med. 1994; 148:699-703.
6. Jordan GH, Winslow BH. **Laparoscopic single stage and staged orchidopexy.** J Urol. 1994; 152:1249.
7. Lima M, Bertozzi M, Ruggeri G, Domini M, Libri M, Pelasig Landuzzi V, Messina P, **The nonpalpable testis: an expression of 132 connective video laparoscopic exploration in 6 yrs.** Pediatr. Med Chir, 2002; 24: 37-40.
8. Frush DP, Sheldon CA. **Diagnostic imaging for pediatric scrotal disorders.** Radio Graphics 1998; 18:967-985.
9. Castilho LN. **Laparoscopy for the nonpalpable testis: How to interpret the endoscopic findings.** J Urol. 1990; 144:1215-8.
10. Schleef J, vonBismarck S, Burmucic K. **Groin exploration for nonpalpable testis: laparoscopic approach.** J Pediatr Surg 2002; 37: 1552-1555.
11. Plotzker ED, Rushton HG, Belman AB. **Laparoscopy for nonpalpable testis in childhood: is inguinal exploration also necessary when vas and vessels exit the inguinal ring?** J Urol. 1992; 148: 635-637.
12. Storey DW, MacKinnon Ak. **The laparoscope and the undescended testis.** J Pediatr Surg. 1992; 27: 89- 92.
13. Docimo SG, Moore RG, Kavoussi LR. **Laparoscopic orchidopexy.** Urology 1995; 46:715.
14. Poppas DP, Lemack GE, Miniberg DT. **Laparoscopic orchidopexy clinical experience and description of technique.** J Urol 1996; 155:708.