

Laparoscopic Orchiopexy for Intra-Abdominal Testes: Our Experience

Dr. Pranjal Moharjal¹, Dr. Apoorv R Shastri², Dr. Rambir Singh³, Dr. Aayush Mittal⁴

¹Assistant Professor, Department of Urology, J.N.U. Medical College Jaipur, Rajasthan

²Assistant Professor, Department of Urology, J.N.U. Medical College Jaipur, Rajasthan

^{3,4}Department of Urology, J.N.U. Medical College Jaipur, Rajasthan

Abstract

Introduction

Undescended testis is one of the most common congenital anomaly, occurring in 1% to 9% of full-term and 1% to 45% of preterm new born males¹. Affecting about 1% of boys at age of one year, of these 20% have a non-palpable testis with a probability of absent testis. Although 80% to 85% of cases are isolated, or non-syndromic. This may have a significant impact on the possibility of malignancy in these testes, as well as on the later fertility of these subjects.

Materials and Methods

We retrospectively analysed the clinical findings, as well as follow up at 3 month and at 6 month. 19 patients were diagnosed with intra-abdominal testis between March 2026 April 2025. All patients were re-examined under general anaesthesia to confirm that the testes were intra-abdominal. Non-palpable testes were imaged by USG ±MRI Pneumoperitoneum was created by inserting a 6 mm port supra umbilically using open technique followed by two 6 mm ports. We tried to identify the testes, testicular vessels, vas deferens and whether the deep inguinal rings were open or closed. Laparoscopic findings were classified according to location of these structures and used to determine subsequent management. In none of the cases testis was absent.

Result

We analysed 19 patients, (4 with bilateral, 11 right, 4 left). Of 23 testes, 21 were treated with primary laparoscopic orchiopexy (PLO) sparing the internal spermatic vessel and vas deference. Of 2 cases converted to open exploration because of injury to branch of inferior epigastric vessel in one case, injury to unnamed branch of external iliac vessel in another case. Of 1 patient diagnosed with inguinal testis on diagnostic laparoscopy so spermatic vessel and vas deference mobilised and open inguinal orchiopexy done. 1 testis located very high in right iliac fossa this patient did not give consent for orchidectomy or two stage surgery so the procedure was deferred. Testicular survival rate were 95.5% at 3 month and 89.4% at 6month because of two patients lost in follow up and 81% testes were located in lower scrotum and 14% upper scrotum at 3month. 78% testes were located in lower scrotum at 3month.

Conclusion

Laparoscopy is very useful for the diagnosis and treatment of impalpable testes. We measured mobility of the testis towards the contra-lateral internal deep inguinal ring is best predictor for the type of orchiopexy. we suggest periodic follow-up evaluating the size and vascularity of pexed testes by local examination and USG.

Keywords: undescended testis, laparoscopic orchiopexy, intra abdominal testis, non palpable testis, pediatric testicular surgery

Table 1: Laparoscopic Findings & Associated Anomalies

Findings	Associated anomalies	No. of testis	Procedure
Inguinal testis just below deep ring (Type 1)		02	Laparoscopic mobilization of spermatic cord & spermatic vessels Inguinal orchiopexy
Low lying (<3 cm from deep inguinal ring) type 2	Scrotal hypospadias in one case	18	Lap. Orchiopexy
High lying (> 3cm away from the deep inguinal ring) Type 3		02	Lap. Orchiopexy
Very high in Rt iliac fossa (solitary testis) Type 4	Absent prostate & Rt seminal vesicle. Rt atrophic kidney	01	Diagnostic laparoscopy.

Table 2: Patient characteristics

No. of patients	19
No. of intra-abdominal testes	23
Mean age	3.2yr
Mean follow up	3.3 month

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Table 3

Laterality of testis	No. of testis
Right	11
Left	04
Bilateral	08

Table 4: Outcome relative to intra- operative laparoscopic findings

Findings	Success no.	Success %	Complication
Type 1	02	100	Nil
Type 2	18	100	Injury to unnamed branch of external iliac vessel in one case
Type 3	02	50	Inferior epigastric injury
Type 4	0		Procedure was deferred

Table 5: Testicular survival outcomes of laparoscopic orchiopexy

	All	Type 1	Type 2	Type 3
Total	21	02	18	01
At 3month TSR%	95.2% (20/21)	100%	94.4% (17/18)	50%
At 6month	89% (17/19)	100%	93.7% (15/16)	50%

Location of orchiopexed testis on follow up:

A type 1

Follow up	TSR%	Low	High
At 3 month	100	1	
At 6 month	100	1	

Type 2 testis

Follow up	TSR %	Low	High
At3 month	94.4	15	02
At 6month	94.4	13	03

Type 3 testis

Follow up	TSR%	Low	High
3 month	100	01	01
6 month	100	01	01

Total success rate of orchiopexy in our study and previous studies.

Study	Number of testes	Success rate
Krisch et al.1998	33	97%
Dhanani et al. 2004	28	100%
Tariq o. Abbas 2011	100	63.3%
Our study 2022	23	89.4%

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