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Laparoscopic Assisted Orchiopexy for Treatment of Intraabdominal Testis

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Abstract: Undescended testis is one of the most common problems in children it affecting about 1% of boys especially at age of 1 years, however about 20% have a non-palpable testis as well as the later infertility. Laparoscopy has gradually become the gold standard for the treatment of non-palpable testicle with the different in success rate and complication.

Keywords: Laparoscopy, Treatment, Orchiopexy, Intraabdominal Testis.

Case Report

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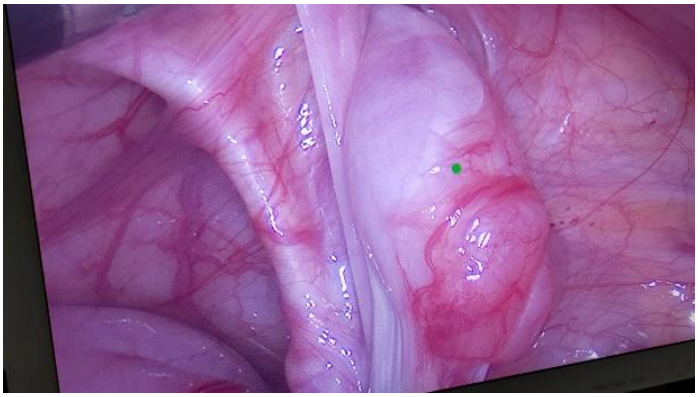
INTRODUCTION

Cryptorchidism (undescended testes), is the most common congenital anomaly found at birth and affects 3% or more of full term male newborns. Approximately 80% of undescended testes are clinically palpable and 20% non-palpable (intra-abdominal). Intra-abdominal testes can be located anywhere between the lower pole of the kidney (cephalad and caudally), and the internal ring. Rarely, they are found in the perihepatic and perisplenic regions. The consequences of cryptorchidism include infertility, neoplasm, testicular torsion, hernia. The aim of laparoscopic and open surgery is to avert these consequences and give the testes better endocrine function. The modalities for the diagnosis of cryptorchidism include USS, computed tomography, magnetic resonance imaging, angiography among others. Many of these techniques are associated with false-negative and false-positive results. Diagnostic laparoscopy was first introduced by Cortesi *et al* [8] and the use of laparoscopy for the management of non-palpable testes was first described by Jordan et al in 1992. It has been proven to give positive result and is used widely now for the purpose of diagnosis and definitive management of undescended testis.

CASE PRESENTATION

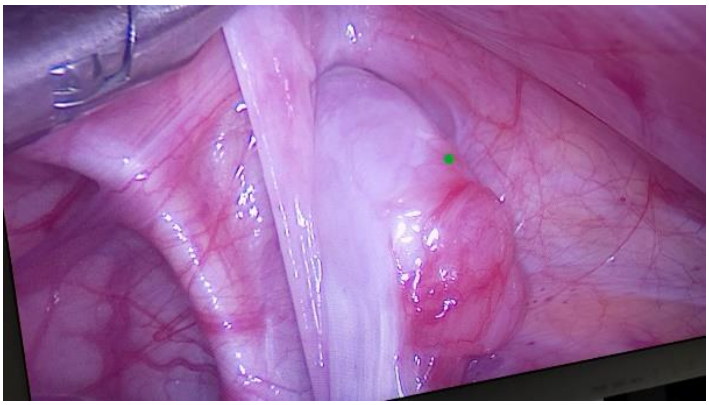
2yrs male referral from regional hospital came with complain of absence of the testis on right side of the scrotum, which is associated with swelling on the same side, swelling is more marked when patient is standing up or during crying but it was not associated with discomfort to the patient. He was operated at regional hospital twice due to same presentation without success. The exanimation was done and the findings were right reducible inguinal hernia with empty scrotum. The Investigation were done blood workup FBP – HB 11.5g/dl, PTT was 245, other parameter were normal. Renal function test was done also which result was urea was 2.06 normal and other parameter was within the normal range. Echocardiography was done also which was normal. The laparoscopic procedure started with the stomach and bladder decompressed, and the patient lying in the supine Trendelenburg position. Pneumoperitoneum was created, with insufflation to 7 mmHg after a Veres needle was punctured through a subumbilical vertical incision. A 5-mm trocar sheath was inserted steadily after withdrawing the puncture needle. A 30 degree telescope was advanced through the sheath. First, a thorough exploration was done to confirm no iatrogenic trauma, followed by inspection of the left lower quadrant. The intra-abdominal testis was recognized between the internal inguinal ring and external iliac vessels. The camera sheath was removed and the incision extended to accommodate a 5-mm sheath. Two accessory ports of 5-mm trocar sheaths were created bilaterally at the mid-clavicular line, slightly lower than the umbilical port. A 5-mm 30-degree

telescope was used, with instruments passed through the bilateral accessory ports. The testis appeared ashen and non-atrophied, and careful inspection revealed that its size was equivalent to the opposite one.



Figure

We decided to preserve and bring down the cryptorchid testicle. The dissection proceeded by peritoneal incision from the internal inguinal ring to iliac vessels. The testis was detached from the peritoneum and areolar tissue with blunt dissection. All bleeding vessels were coagulated with electrocautery.



Figure

The internal spermatic vessels, and the whole vas deferens complex, were skeletonized and dissected free from the peritoneum. The internal spermatic vessels were traced as far cephalad, and laterally, as possible to gain additional length. The mobile testis, however, appeared to be at a distance of more than 3 cm from the inguinal ring. We grasped the testis and moved it, at greatest stretch of the supporting vessels, into the internal ring; testis was achieved a safe intra-scrotal placement without concern of vascular compromise.

DISCUSSION

Laparoscopic assisted orchiopexy is now standard management for an intraabdominal testis. The testicles normally follow a descending path from the abdomen to the scrotum during the intrauterine period, but sometime this path arrest during migration occurs in this route and they cannot reach the final position in the scrotum, resulting in an undescended testis. Undescended testis is a complex and not fully explains process in which hormonal, genetic, anatomical and environmental factors play a role [1]. Non-palpable testis is the inability of the testes to be identified in the inguinal canal and scrotum on physical examination and constitutes approximately 20 to 25% of all undescended testicles. None of current imaging techniques such as USG, CT or MRI performed to detect the presence or absence of non-palpable testicles have shown 100% reliability [2]. In the study of Erdoğan *et al.* (2017), they were able to detect the location of only three testicles (15.7%) in USG performed for nineteen testicles [3]. Due to this reason, some authors have recommended the use of laparoscopy, which can provide diagnosis and treatment, when necessary, as the first choice without resorting to another imaging method [4, 5]. In laparoscopic exploration, we were able to detect the location and size of 100% of the non-palpable testicles, and we operated on the case. However, in our case spermatic vessels and spermatic cord were identified. Incidence rate has been reported with spermatic vessels entering the inguinal canal as 40%, those in the abdomen as 40%, peeping testes as 10%, and blind-ended spermatic vessels as 10% [6]. Laparoscopic approach to an intraabdominal undescended testis has much advantages over open orchiopexy performed through either an extended inguinal incision or a high inguinal

incision. Laparoscopy accurately assesses the presence, absence, viability, and show whole entire anatomy of an intraabdominal testis. Success in testicular mobilization may require complete plus proximal dissection of the spermatic vessels and redirecting the line of "descent" via the shortest route to the scrotum [7].

Laparoscopic assisted orchiopexy allows accessibility to the entire course of the spermatic vessels to their origin, usually the limiting factor in tension-free mobilization of an intraabdominal testis [7]. Dissection close to the origin of the spermatic vessels is possible because range of motion with laparoscopic instrumentation extends across the entire abdominal cavity. Magnification of these delicate vessels aids in dissection and preservation of the main and collateral blood supply. Success rates of laparoscopic orchiopexy are comparable to the published results for laparoscopic orchiopexy and are based on postoperative testicular position and viability. There is still an ongoing debate in the literature regarding how to deal with spermatic vessels in cases where the spermatic vessels are too short and do not allow bringing the testis without tension to the scrotum [7]. Introduction of the practice of ligating the testicular vessels and waiting 6 to 12 months before performing an orchiopexy to allow the deferential artery to increase its flow [8]. Was the first to describe a laparoscopic approach for the first stage, after which the laparoscopic Fowler-Stephens procedure was introduced, performing both stages laparoscopically, which has gained wide acceptance. Staging the procedure will enable delivery of the testis into the scrotum without tension and a decreased risk of atrophy. Since then many authors have compared their results using this approach in children with intraabdominal testis [9]. However in our case we did single stage procedure, finally, we found it useful and safe to deliver the testis to the scrotum after dissection by means of the Veres aStep trocar introduced via the scrotal incision. Insertion of the Veres, a Step trocar allows gradual dilatation of the scrotal incision and safe insertion of the trocar into the abdominal cavity without incidental injury of epigastric vessels and testicular twisting during delivery.

CONCLUSION

Laparoscopy has proven to be an effective and accurate method of diagnosis of non-palpable (intra-abdominal) testes as it enables accurate determination of anatomical localization as well as viability. It is also comparatively an effective tool for definitive management of non-palpable testes in which case the simultaneous surgical correction of the anomaly makes it more acceptable. This minimal access technique makes open exploration of the abdomen difficult-to-find testes unnecessary.

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REFERENCES

1. Docampo, M. J., & Hadziselimovic, F. (2016). Molecular pathology of cryptorchidism-induced infertility. *Sexual Development*, *9*(5), 269-278.
2. Iqbal, N., Hasan, A., Saghir, S., Iqbal, S., bin Saif, U., Choudhry, A. M., ... & Akhter, S. (2020). Laparoscopic orchiopexy for management of bilateral non-palpable testes; single center experience. *Journal of Ayub Medical College Abbottabad*, *32*(4), 445-449.
3. Erdoğan, C., Bahadır, B., Taşkınlar, H., & Naycı, A. (2017). Laparoscopic management and its outcomes in cases with nonpalpable testis. *Turkish Journal of Urology*, *43*(2), 196.
4. Cortesi, N., Ferrari, P., Zambarda, E., Manenti, A., Baldini, A., & Morano, F. P. (1976). Diagnosis of bilateral abdominal cryptorchidism by laparoscopy. *Endoscopy*, *8*(01), 33-34.
5. Tennenbaum, S. Y., Lerner, S. E., McAleer, I. M., Packer, M. G., Scherz, H. C., & Kaplan, G. W. (1994). Preoperative laparoscopic localization of the nonpalpable testis: a critical analysis of a 10-year experience. *The Journal of urology*, *151*(3), 732-734.
6. Cisek, L. J., Peters, C. A., Atala, A., Bauer, S. B., Diamond, D. A., & Retik, A. B. (1998). Current findings in diagnostic laparoscopic evaluation of the nonpalpable testis. *The Journal of urology*, *160*(3 Part 2), 1145-1149.
7. Caldamone, A. A., & Amaral, J. F. (1994). Laparoscopic stage 2 Fowler-Stephens orchiopexy. *The Journal of urology*, *152*(4), 1253-1256.
8. Bloom, D. A. (1991). Two-step orchiopexy with pelviscopic clip ligation of the spermatic vessels. *The Journal of urology*, *145*(5), 1030-1033.
9. Chang, B., Palmer, L. S., & Franco, I. (2001). Laparoscopic orchidopexy: a review of a large clinical series. *BJU international*, *87*(6), 490-493.