

ORCHIDOPEXY WITHOUT LIGATION OF HERNIA SAC: OUR EXPERIENCEVishal Gajbhiye¹, Nagendra Singh², Sona Singh³, Dushyant Rohit⁴, Omkar Thakur⁵, R. S. Verma⁶**HOW TO CITE THIS ARTICLE:**

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ABSTRACT: AIMS: To confirm that, the ligation of hernial sac during orchiopexy is not mandatory to prevent postoperative development of hernia. **METHODS:** This prospective study was conducted in 40 children with an age range of six months to 12 years with a diagnosis of undescended testis. Of the 40 cases, 30 were unilateral and 10 bilateral cases. Of the 30 unilateral undescended testis, 18 were right-sided and 12 left-sided. All children underwent standard orchiopexy without the ligation of the hernia sac. **RESULTS:** All the patients were followed up regularly up to a period ranging from 18 months to 24 months. No inguinal hernia was detected during the regular follow-up in any child. **CONCLUSION:** Ligation of herinal sac is not mandatory during orchipexy. **KEYWORDS:** Undesended testes, inguinal hernia, orchidopexy.

INTRODUCTION: Herniotomy is performed along with orchidopexy for the closure of associated patent processus vaginalis. The conventional technique for undesended testis repair is high ligation of the hernial sac after proper dissection upto the deep ring, Mohta et al.^[1] Observed that there is no untoward effect on the early complications and recurrence rate, if hernia sac is not ligated during herniotomy. During laparoscopic orchidopexy performed for contralateral testicle it was found that despite nonligation, the previous de peritonized site got reperitonized by itself and the sac which is dissected and left open deep to deep ring is not having hernia later in life. This is probably due to the closer of peritoneal defect within 24 hours by metamorphosis of the in situ mesodermal cells.^[2]

We done a study on non-ligation of hernia sac during conventional orchiopexy in our institute to see the results and it's long term untowards effects and advantages over standard orchiopexy.

MATERIALS AND METHODS: This prospective study was conducted between May 2011 and Dec. 2014. Fourty children with an age range of six months to 12 years with a diagnosis of undescended testis were included. Of the 40 cases, 30 were unilateral and 10 bilateral cases. Of the 30 unilateral undescended testis, 18 were right-sided and 12 left-sided. In all the cases, testis was palpable. Only those cases were taken which were not associated with clinical hernia. Baseline investigations were done, informed consent of the parents was taken and the procedure explained to the parents. All children underwent standard orchiopexy without the ligation of the hernia sac.

The hernia sac was dealt with after complete mobilization of the testis through an inguinal incision. The sac was first opened up, divided and the proximal end of the divided sac was very gently peeled off with dissecting forceps as high as possible without damaging the cord structures. This was done to bring down the testis to its normal position as it results in achievement of adequate length of the cord as describe in standard orchidopexy technique. The dissected hernia sac was not ligated and left as such. Standard orchiopexy was then performed by making subdartos pouch. All the patients were followed up regularly up to a period ranging from 18 months to 24 months.

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RESULTS: Parameters	Value
Total no. of cases	40
Total no. of unilateral cases	30 (75%)
Total no. of bilateral cases	10 (25%)
Right sided	18
Left sided	12
Age	
6month – 2 years	75%
2-6 years	20%
6-12 years	5%
complications	Nil
Hernial recurrence	Nil
Table 1	

In our study there were total 40 cases, out of which 30 unilateral and 10 bilateral. Out of 30 unilateral cases 18 were right sided, 12 cases were left sided.

The age ranged from 6 months to 12 years. 30 cases were between 6 months to 2 years. 8 cases between 2 years to 6 years and 2 cases were between 6 years to 12 years.

All the cases were followed up for 18 months to 24 months with mean 22 months. On follow-up not a single case was reported with evidence of hernia.

DISCUSSION: Undescended testis surgery is one of the commoner operations done in paediatric patients throughout the world. Bevan in 1899 first described the standard orchiopexy procedure with mobilization of testis and spermatic vessels, followed by hernia sac ligation and fixation of testes in sub-dartose pouch in ipsilateral hemiscrotum.

Shulman et al.^[3] Proposed that during adult herniorrhaphy, ligation of hernia sac is a needless step. A study by Schier^[4] showed that there is no difference to simple suturing when peritoneum was incised and hernia sac resected during laparoscopic inguinal hernia repair in children. Schier in his laparoscopic experiences advocated the use of a laparoscopic technique to completely resect the patent processus vaginalis and the parietal peritoneum surrounding the internal inguinal ring. This allowed the peritoneal scar tissue to close the area of the ring. This scarring occurs in the extent of the inguinal canal where the dissection took place, thereby causing the same peritoneal scarring and sealing of the inguinal floor. He stressed that an open internal inguinal ring is not an inguinal hernia.^[5] During laparoscopic orchiopexy, Handa et al.^[6] Showed that closure of the internal ring is not necessary. In cases of inguinal hernia in children, Mohta et al. ^[1] suggested that nonligation of hernia sac during herniotomy in children has no untoward effect on the early complications and recurrence rate. This is probably due to the closure of peritoneal defect within 24 hours by metamorphosis of the in situ mesodermal cells.

Tanyel et al.^{[7],[8]} showed that childhood inguinal hernia is related to smooth muscle within the wall of the sac. The smooth muscle bundles may have an important role both in prevention of obliteration and clinical outcome. The persistence of smooth muscle prevents the obliteration of the

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processus vaginalis; myofibroblasts are found in association with smooth muscle. Smooth muscles dedifferentiate into myofibroblasts. This dedifferentiated state may represent attempted apoptosis, which results in disappearance of the smooth muscle and obliteration of the processus vaginalis after the descent of the testis into the scrotum.

Undescended testis may not share the same etiologic basis as hernia, because the sacs associated with undescended testis are without smooth muscles.

Handa et al.^[6] Intentionally did not close the internal ring around the pulled-through spermatic cord. This approach was based on the observation that the majority of the testes lie near the internal ring. The mobilization of these testes by division of the gubernaculum and the dissection required to free a long loop vas deferens results in a large raw area at the internal ring. When the testis is pulled down into the scrotum, the mobilized surface of the spermatic cord is in apposition with the raw area at the internal ring.

As per many recent studies surgeons concluded that herniotomy in cases of hernia alone and hernia associated with UDT, hernial sac ligation is not required.^{[1],[2],[9],[10]}

In our study, during inguinal orchiopexy, we did not ligate the hernia sac. After freeing the hernia sac from the cord, we simply dissected the hernia sac as high as possible and cut the proximal end near deep inguinal ring. We have performed 40 cases of inguinal orchiopexy with this procedure and followed up for 18 months to two years. We did not find any complication or untoward effect in any of our study cases.

Advantages associated with this advancement in standard procedure are:

1. Time saving: Several minutes of operating time are saved as we can avoid the holding of the proximal cut end of the hernial sac with multiple small haemostatic forceps and suture ligating it, especially when the sac is very thin and tends to tear very easily.
2. Length of testicular vessel: It is found that the most important criteria for bringing down the testes in the scrotum is the length of the testicular vessels; in this procedure extra length of the testicular vessel can be achieved by peeling off the peritoneum as high as possible.
3. Accidental ligation of the cord structures is avoided.
4. This technique decreases the anesthetic complications and reduces the undue stress of drugs and surgery.

CONCLUSION: In our study we also found that routine ligation of the hernial sac is not mandatory during orchidopexy. And it also reduces morbidity and operative time.

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AUTHORS:

1. Vishal Gajbhiye
2. Nagendra Singh
3. Sona Singh
4. Dushyant Rohit
5. Omkar Thakur
6. R. S. Verma

PARTICULARS OF CONTRIBUTORS:

1. Assistant Professor, Paediatrics Surgery Unit, Department of General Surgery, Bundelkhand Medical College, Sagar, Madhya Pradesh.
2. Assistant Professor, Department of General Surgery, Bundelkhand Medical College, Sagar, Madhya Pradesh.
3. Assistant Professor, Department of Obstetrics & Gynaecology, Bundelkhand Medical College, Sagar, Madhya Pradesh.

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COMPETING INTERESTS: None

4. Associate Professor, Department of General Surgery, Bundelkhand Medical College, Sagar, Madhya Pradesh.
5. Senior Resident, Department of General Surgery, Bundelkhand Medical College, Sagar, Madhya Pradesh.
6. Professor & HOD, Department of General Surgery, Bundelkhand Medical College, Sagar, Madhya Pradesh.

NAME ADDRESS EMAIL ID OF THE CORRESPONDING AUTHOR:

Dr. Nagendra Singh,
Assistant Professor,
Department of General Surgery,
Bundelkhand Medical College,
Sagar, Madhya Pradesh.
E-mail: drnagendra.804@gmail.com

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