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Research Article

**A COMPARATIVE STUDY OF HYDROCELE REPAIR BY TWO  
METHODS IN CHILDREN**<sup>1</sup>Danyal Ahmad, <sup>2</sup>Misbah Ahmad, <sup>3</sup>Furqan Hassan<sup>1</sup>Multan Medical and Dental College<sup>2</sup>Nishtar Medical University<sup>3</sup>Nishtar Medical University**Article Received:** January 2020**Accepted:** February 2020**Published:** March 2020**Abstract:**

**Introduction:** Hydrocele is an accumulation of fluid in the processus vaginalis causes swelling of the scrotum or inguinal region. Its treatment depends on age, symptoms and relationship with abdomen. Preferred method of treatment is under discussion. In this study, we evaluated two different methods of Hydrocele repair in children, Hydroscelotomy and hydroseleectomy and complications and relapse rates were compared.

**Study Design:** A randomized, single-blind clinical trial.

**Place and Duration:** In the Nishtar Hospital Multan for one-year duration from May 2018 to April 2019.

**Materials and methods:** 70 non-communicating children with hydrocele were selected for study assign allocating every other subject to each treatment group (alternating allocation) for the hydroseleectomy group (incision and evacuation of hydrocele sac) and hydrocelectomy group (excision and removing of hydrocele sac). Complications and recurrence rates have been reported in both cases in groups and together.

**Results:** 35 of 70 children had hydrocele on the right (35/7%) and Left hydrocele was found in 45 children (64/3%). Without statistical difference complications such as bleeding, wound infection, seminal cord Damage, and recurrent hydrocele between two groups were noted in the postoperative period.

**Conclusion:** Although no different result was found in term of complications and relapse between two groups of Hydroseleectomy and is an appropriate treatment with a lower probability of spermatic cord damage and other complications

**Keywords:** Hydrocellotomy, recurrence, hydroseleectomy.

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**INTRODUCTION:**

Hydrocele manifests when fluid accumulates in processus vaginalis causing of edema in groin or scrotum. Ultrasound imaging is very sensitive for diagnosing hydroceles and excluding other differential diagnoses. Hydrocele is the most common complication e.g. performing any operation on the testicle's surgical treatment of varicocele. Optimal treatment of hydrocele remains controversial and non-invasive procedures in over 82% of cases. Treatment of hydrocele can be done either by aspiration which is usually a temporary solution and has a high rate of recurrence or by surgery (hydrocelectomy) which is the definitive management and has a much lower recurrence rate compared to aspiration. Hydrocelectomy can cause complications such as: bleeding, infection, testicular damage, nerve damage, hydrocele recurrence and infertility. Surgical hydrocele repair can be done using 3 different approaches: through the groin or with a scrotal incision or laparoscopy which surgical method is more suitable for Hydrocele treatment in children? Excision of hydrocele sac or incision and drainage which is a less invasive method? In this study, we compared these two methods and complications and relapse rate.

**MATERIALS AND METHODS:**

This randomized, single-blind clinical trial was in Nishter Hospital Multan for one-year duration from May 2018 to April 2019. Children with hydrocele that are not communicating were selected. Patients ranged from one month to 12 years. Indication for surgery was permanent hydrocele after 18 months or a stretched and painful hydrocele small child. All communication hydrocele of the spermatic cord and hydrocele were selected. Inguinal hernia was excluded from our examination. In all 70 children with a non-communicating hydrocele were involved. We randomly divided patients in to two groups, allocating every other subject to each treatment group (alternating allocation) for the hydrocelectomy group (incision and evacuation of hydrocele sac) and hydrocelectomy group (excision and removing of hydrocele sac). All operations were performed by a pediatrician surgeon. Parents of all children participating in the study signed an informed consent form containing

By the University Ethics Committee, the study was approved. The control group (hydrocelectomy repair) underwent surgery using a groin incision: tunica vaginalis was exposed, opening and evacuation of the hydrocele sac along with partial or complete excision of the sac was performed, hemostasis was maintained and finally repair of the incision site was done. In research group (hydrocelectomy group) same steps, minus sac removal (only one), cut and wide opening of the sac were made. As a result of hydrocele drainage and

evacuation that patient was discarded. In All cases of both groups were closely monitored in the postoperative period in the hospital; like intermittent outpatient visits to the clinic Participants of the study followed for several months after discharge. Then the exact results, duration of the operation and complications were compared. Two main complications such as hydrocele recurrence, bleeding or hematoma, wound infection and spermatic cord the changes have been compared.

All data was obtained using a designed checklist. Finally, data analysis was carried in SPSS 16. For quantitative the variables use the mean and standard deviation. Chi-square and Fisher's exact test was applied for qualitative variable analysis. The value of  $p < 0/05$  was considered significant.

**RESULTS:**

Thirty-five children underwent hydrocelectomy and 35 children in the control group for (hydrocelectomy method). Twenty-five patient's hydrocele on the right (35/7%) and 45 children left hydrocele (64/3%). We had no case of bleeding in hydrocelectomy group and 1 case of bleeding in hydrocelectomy group (%2/9). No statistical differences found. For bleeding, there was one case in two groups ( $p = 0/314$ ) and wound infection (2/9%) two cases (5/7%) in the study group (hydrocelectomy) and control group. There was no statistical difference between the two groups according to this complication ( $p = 0/550$ ). We had zero cases of spermatic cord damage in the study group and one case (%2/9) of inadvertent vas deferens cutting in the control group which was repaired intra-operatively. The difference was not meaningful ( $p > 0/05$ ). There were 3 recurrent hydroceles in the postoperative follow up in the study group (%8/6) and no case of recurrence in the hydrocelectomy group. No meaningful relation was found between recurrence and the method of surgery ( $p = 0/077$ ).

**DISCUSSION:**

There are many discussions about the optimal time of hydrocele surgery. PPV usually closes spontaneously at the age of two; performing hydrocele repair before this age may expose the patient to unnecessary surgery and may have significant cost effects. The timing of hydrocele surgery and PPV ligation was that most of the hydrocele recovered in England before the age of 2, so if surgery was postponed until then, it was subject to a systematic review. Less unnecessary procedures will be performed without increasing morbidity. One-sided hydrocele repair was performed by Lym *et al*. They found that the probability of a clinically significant contralateral hydrocele or hernia is only 7%. They concluded that routine contralateral examination was not necessary. In our study, we

expected patients to take more than 18 months to perform surgical repair of their hydrocele (except for previously repaired stretched hydrocele). This is described by Osifo et al. In all of our cases, there were non-communicating hydroceles undergoing open surgery. Regarding hydrocele communicating with the permeable vaginal process, although the classical approach in pediatric patients is ligation with excision and indirect sac suture, different studies have shown that release of the hernia sac does not increase the recurrence rate. Although all our patients are operated under general anesthesia, they can be performed under local anesthesia, which eliminates the morbidity of more aggressive anesthetic techniques. This method can be used in small sections with limited resources. Finally, we have found very limited studies comparing the two incisions or excision methods of the hydrocele sac as the preferred treatment for non-communicating hydrocele. Considering that the incision and drainage of the sac is less invasive and less likely to damage the elements of the spermatic cord, we recommend this method.

### CONCLUSION:

Although we didn't find any difference Complicity rate and relapse between two groups (may be due to limited number of cases) hydroceleotomy appears to be sufficient to treat pure hydrocele; with low risk of damage to the spermatic cord; and Other serious complications

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