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Evaluation of Clinical Profile and Surgical Management of Primary Vaginal Hydrocele

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Abstract
One of the most prevalent disorders in the world today is hydrocele. Treatments for hydrocele have included surgical techniques since ancient times. The study's objective was to examine the clinical characteristics, diagnosis and surgical treatment of primary vaginal hydrocele in adults (over the age of 12). The Institutional Ethics Committee authorised the research. All patients and their families provided written, informed consent. From the patient's admission day until their release, as well as throughout the follow-up period, a proforma was completed. Routine tests, such as hemograms, random blood sugar tests, blood for TC, DC, and ESR and scrotal ultrasounds, were performed in each instance. One patient had surgery under local anaesthesia, whereas the majority of patients had spinal anaesthesia. Depending on the size of the hydrocele sac, either Lord's plication or Jaboulay's treatment was chosen for the 80 patients who had open surgery. The largest numbers of instances were observed in the 20-29 age group, followed by that in the 30-39 age group, and the lowest number of cases were seen in the 70-79 age group. The youngest patient was 16 years old, while the oldest patient was 75 years old. There are almost comparable numbers of instances across the majority of vocations, suggesting that hydrocele is not a profession-specific condition. These two surgical techniques had low rates of recurrence, were inexpensive, simple to execute, and very safe. Compared to Jaboulay's method, Lord's procedure has a lower incidence of post-operative problems.

INTRODUCTION

The radical surgery, in which the parietal layer of the tunica vaginalis is entirely removed and its cut edges are sutured posteriorly, is a surgical technique often performed to cure hydrocele[1,2].

During hydrocele surgery, typical consequences include haemorrhaging, damage to the cord and epididymis and twisting of the testis after improper placement after the procedure[1,2]. The most frequent of them is post-operative hematoma, which is caused by fluid seeping from tiny blood vessels. Haemorrhaging from tiny veins may proceed into the layers of loose scrotal tissue if careful hemostasis is not achieved. This might result in a hematoma that cannot be successfully avoided by emptying the scrotum. Hematomas serve as rich breeding grounds for germs, and drainage tubes often make infection more likely[1,2].

The most prevalent main hydrocele is vaginal hydrocele. Men who are middle-aged or older often exhibit it. This results from a buildup of sterilised fluid with an amber hue between the tunica vaginalis's parietal and visceral layers[3]. The majority of individuals decline the doctor's request for a surgical surgery to treat their hydrocele due to shyness and concern about developing infertility and impotence[2,5]. In the first year of life, a hydrocele may go away on its own without therapy and is often neither uncomfortable or hazardous. It typically appears in warm climates[6]. Hydrocelectomy should be done as away if carelessness causes the hydrocele to worsen[7]. In light of this, it's critical to distinguish hydrocele from chylocele, pylocele and hematocele prior to initiating surgery. It's also crucial to note that Wucheria bankcrofti may be the cause of primary vaginal hydrocele[8,9]. Diagnosis plays a crucial role clinically and radiologically in case of the severity of the disease[10,11]. Numerous techniques, including Jabouley's Lord's, the Patch method, aspiration and sclerotherapy treatments, are employed for hydrocelectomy. There are many non-surgical and operative therapeutic options available for hydrocele[12].

Although surgeons use all of these treatments, it has been noted that there are certain methods that are more appropriate and dependable than others. Anaesthesia and surgical problems are linked to surgical operations. Additionally, hospital hospitalisation is often necessary, which has an impact on the patient's finances and health. A paradigm change in the use of minimally invasive techniques to treat a variety of ailments has occurred in recent years. Treatment for hydroceles may still be achieved using less invasive methods such as aspiration sclerotherapy. Sclerotherapy has become more and more popular since it is an inexpensive surgery that is painless, safe, and successful outside for the patient. The research reports that sclerosants range in efficacy from 53-98%[13,14].

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MATERIALS AND METHODS

After identifying the patients who had scrotal edema when they arrived at the outpatient department, inclusion and exclusion criteria were used.

Inclusion Criteria:

- Single sale that includes the testicles in the scrotum.
- Positive swelling is ideal for trans-illumination.
- It ought to be feasible to pass over the enlargement at the scrotal base.

Exclusion Criteria:

- Swelling that originates from the scrotal skin.
- A single, distinct enlargement in the scrotum from the testes.
- Widespread scrotal edoema that encompasses the testis, although trans-illumination is negative.
- Swelling that was accompanied by a coughing fit and reducibility.

The Institutional Ethics Committee gave the research its approval. Every patient, together with their family members, gave written informed permission. From the day of admission until the patient's release as well as the follow-up period, a proforma was completed. Hemogram, random blood sugar, blood for TC, DC, ESR and scrotal ultrasonography were among the standard tests performed in each instance. One patient had local anaesthetic throughout the procedure, whereas the majority of patients had spinal anaesthesia. Depending on the size of the hydrocele sac, the 80 patients had open surgery and were then either given the Lord's plication or the Jaboulay operation.

Following surgery, all patients received the prescribed antibiotics and painkillers along with tight scrotal support. After 48 hours, the corrugated rubber drain was taken out. Most of the time, the sutures were taken out in six to twelve days. Sutures were taken out between 12 and 14 days after the patient

Table 1: Duration of post-operative stay.

Operation	0-5 days	6-10 days	11-15 days
Lord's Plication	10 (50%)	10 (50%)	0 (0%)
Jaboulay's procedure	16 (26.6%)	30 (50%)	14 (23.3%)

Table 2: Post-operative stay based on laterality (no. of cases %).

	Unilateral	Bilateral
0-5days	19 (32.2%)	08 (38.0%)
6-10days	32 (54.2%)	09 (42.8%)
11-15days	05 (8.4%)	02 (9.5%)
>15days	03 (5.0%)	02 (9.5%)
Total	59 (100%)	21 (100%)

Table 3: Post-operative complications.

Complications	Lord's Plication (22)	Jaboulay's procedure (58)
Pain	6 (27.2%)	22 (37.9%)
Hematoma	0 (0%)	2 (3.4%)
Skin edema	2 (9.0%)	14 (24.1%)
Wound Infection	0 (0%)	4 (6.8%)
Recurrence	0 (0%)	2 (3.4%)

Table 4: Post-operative complications (based on laterality).

Complications	Pain	Hematoma	Skin oedema	Wound infection	Recurrence	None
Unilateral	18	00	12	03	01	31
Bilateral	08	01	02	00	00	04
Total	26	01	14	03	01	35

was admitted to the hospital and monitored until the wound healed, with the exception of a small number of instances with partial dehiscence or drainage from the site.

RESULTS AND DISCUSSIONS

The largest number of instances were observed in the 20-29 age group, followed by that in the 30-39 age group and the lowest number of cases were seen in the 70-79 age group. The youngest patient was 16 years old, while the oldest patient was 75 years old. There are almost comparable numbers of instances across the majority of vocations, suggesting that hydrocele is not a profession-specific condition.

The patients in this research had hydrocele for a minimum of 6 days and a maximum of 20 years prior to receiving treatment. The minimal number of instances lasted between six and ten years, while the maximum number of cases lasted six months or fewer.

Lord's plication had no infection, hematoma development, or recurrence as compared to Jaboulay's repair, however Jaboulay's repair had a greater incidence of post-operative discomfort and skin oedema.

Complications after surgery include the possibility of infection and hematoma. These consequences may be avoided with appropriate surgery. The current study's comparison with earlier research on a number of significant components is shown in the following tables. As can be seen from the above table, a maximum of 37% of patients in the current research had hydrocele for 0-6 months. This is comparable to 31% of patients in the Campbell study who had the same condition for 0-6 months. This leads to the conclusion that the majority of patients have surgery within six months after developing hydrocele.

Additionally, the right side of hydrocele is more prevalent than the left side in the current research, the Campbell study and the Dandapat MC *et al* study[17,18]. We might deduce that the right side of the body is more likely to be affected by hydrocele than the left. However, there is no known reason for this inclination towards the right. When comparing the two kinds of operations, the average number of days of post-operative stay was lower for Lord's plication than for Jaboulay's treatment.

The table below compares, in percentage terms, the incidence of skin oedema, hematoma and infection between the current study and the Rodriguez *et al* research[19]. Out of the 80 patients in the current research, 8.33%, 0% and 0% of those who had Lord's plication had skin oedema, hematoma, or wound infection, respectively. In contrast, the remaining 48 patients who had Jaboulay's treatment experienced 25, 2.08% and 6.25% of these outcomes, respectively. In Lord's plication, there was no risk of infection or hematoma development in contrast to other series of primary vaginal hydrocele. As can be shown, there is a very low incidence of hematoma by Lord's plication, according to research by Lord, Efran *et al,* Dahl *et al,* Rai *et al* and Agrawal OP[20-24].

Sutures were taken out on average after 6.3 days in patients who had Jaboulay's surgery, 8.4 days in patients who had Lord's plication and 9.1 days in patients who had subtotal excision of sac. When comparing patients who had Jaboulay's Operation and Lord's Placation to those who had Subtotal excision of the sac, the number of days needed to remove the suture was substantially greater ($p<0.05$).

CONCLUSION

The age range of 20-39 years old saw the highest number of patients and about similar numbers of cases

was seen in the majority of jobs, suggesting that hydrocele is not a condition that is more common in any one field. Within six months following the development of hydrocele, the majority of patients presented with scrotal enlargement, and a few also reported discomfort and heaviness, as well as difficulties walking and performing sexual acts. Hydroceles on the right side were more prevalent. Following Lord's plication, the average post-operative stay was six days. There was no discernible difference in the average hospital stay between unilateral and bilateral hydrocele, however, post-operative pain was higher in the former and skin oedema and wound infection were more common in the latter, perhaps as a result of the hydrocele's larger size. Following Lord's plication, there was no occurrence of hematoma or recurrence.

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