

## A Study on Management of Hydrocele Cases at a Tertiary Care Hospital

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### Abstract

*Introduction:* Hydrocele is abnormal collection of serous fluid in the tunica vaginalis. There are several methods in the treatment of hydrocele and it is mainly surgical. Apart from surgery, Sclerosant therapy is also available. After surgery several complications like hematoma, infection, scrotal edema, torsion of testis, epididymitis and testicular atrophy can occur. *Methods:* A total of 60 patients will be selected after applying the various inclusion and exclusion criteria. The patients will be subjected to various modalities of management like Lord's plication, Jaboulay's procedure, Radical excision of sac and tapping with sclerotherapy depending on the presentation. Patients will be followed up for 6 months for complication. *Results:* Of the total 60 patients selected, 50 patients were subjected to open surgeries while the remaining 10 patients were subjected to Aspiration Sclerotherapy. The following study reveals that among open surgeries, techniques in which no dissection or excision of the tunica vaginalis is done are superior since they have less post-operative complications. Results of aspiration sclerotherapy reveal that complications are minimal and comparable with that of open surgeries. *Conclusion:* Among open surgeries Lord's plication is better than Joboulay's procedure and radical excision of sac with respect to effectiveness, complication and post-operative hospital stay. Aspiration sclerotherapy can be utilized as an effective alternative to open surgery in patients who are not fit for surgery or those who refuse surgery.

**Keywords:** Hydrocele; Management; Sclerotherapy.

### Introduction

Hydrocele is one of the commonest diseases occurring worldwide. Since olden days surgical procedures have been described for the treatment of hydrocele. The surgical procedures commonly used for the treatment of hydrocele is the radical operation in which the parietal layer of the tunica vaginalis is completely removed and its cut edges are sutured posteriorly [1].

The common complications observed during the surgery of hydrocele are bleeding, injury to the cord structures and epididymis, torsion of the testis after a faulty positioning post operatively. Commonest among these is post operative hematoma which is due to oozing from small vessels. Unless meticulous hemostasis is secured oozing from small vessels may continue into the layers of the loose scrotal tissue giving rise to a hematoma which cannot be prevented effectively by draining the scrotum [2].

Hematoma acts as fertile pabulum for bacteria, infection may supervene, often facilitated by drainage tubes. It is apt to say that a patient comes for surgery of a tennis ball and goes back with a cricket ball, considering the size and weight. Hence it is essential to explain to the patient that this swelling is merely blood that will eventually be absorbed.

Following are the procedures that have been tried to prevent scrotal hematoma [3].

- Young (1940) enclosed the scrotum with a tight gauze and adhesive bandage.
- Jerome (1953) advocated the use of elastic bandage and scrotal support.

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- Croot (1944) suggested that the scrotum be anchored to the abdominal wall at the end of operation.
- Burkett (1951) used plaster of paris scrotal support to prevent post operative scrotal hematoma.
- Peter Hernet Lord (1964) described a bloodless operation for the radical cure of hydrocele that has distinct advantages over the other conventional procedures.

**Methodology**

The patients who presented in the OPD with a swelling in the scrotum were identified and following inclusion and exclusion criteria applied at KBNIMS GULBARGA, from dec 2014-dec 2015.

*Inclusion Criteria*

- Solitary swelling in the scrotum incorporating the testis.
- The swelling should be positive for trans-illumination.
- It should be possible to get above the swelling at the base of the scrotum.

*Exclusion Criteria*

Swelling in which there was associated impulse on coughing and reducibility. All men with primary

vaginal hydrocele with no signs of hernia or other scrotal disease will be selected. A total of 60 patients were selected for the study. Of the 60 patients 50 patients were subjected to open surgeries like Lord’s plication, Jaboulay’s procedure and Radical excision of the sac.

The remaining 10 patients who were either elderly above 60 yrs, or not fit for surgery, or who refused surgery were subjected to Aspiration and Sclerotherapy with 500mg of tetracycline diluted in 5ml of 0.9% saline as described by Bodker et al (1985). The procedure was performed on outpatient basis and the patients discharged after 1hr of observation. All patients were seen 2, 6, 12 weeks and 6 months after treatment.

Both the groups of patients who underwent Surgical procedure and Aspiration Sclerotherapy were compared with respect to patient satisfaction, complication and comparative costs.

A proforma was filled up from the admission day until the patient was discharged and through follow-up period.

**Results**

Among the 60 patients 50 patients underwent open surgery while aspiration Sclerotherapy was performed in 10 patients. The 50 patients undergoing open surgery were randomly selected to undergo either Lord’s plication or Jaboulay’s procedure or Radical excision of the sac.

**Table 1:** Shows the types of operations performed

Types of Operation	No. of Hydroceles	Percentage
Lord’s Plication	36	61.02
Jaboulay’s procedure	11	18.64
Radical excision of sac	12	20.34

**Table 2:** Shows the details of Aspiration Sclerotherapy

No. of Patients	10
Median Age (Range)	58 yrs (18-75yrs)
Median duration (Range)	1.5 yrs (2mths-10yrs)
Median vol. of fluid Aspirated (Range)	250ml (50ml-500ml)
Sclerosant used	500mg of tetracycline in 0.9% saline

**Table 3:** Shows the outcome of sclerotherapy

No. of patients	10
No. cured (% age)	8 (80) Primary cure - 4 Secondary cure - 4
No. of recurrence (% age)	2 (20)
No. with pain (% age)	2 (20)
No. with complications*	0

\* Hematoma, Scrotal edema, Infection

**Table 4:** Shows the duration of post-operative stay following each procedure

Operation	0-5 days	6-10 days	11-15 days	16-20 days
Lord's Plication	13	17		
Jaboulay's procedure	2	8		
Radical excision of sac	1	4	5	

Most of the patients undergoing surgery were given spinal anaesthesia. 10 patients were given general anaesthesia while 3 patients were operated under local anaesthesia.

In the present study Lord's plication was performed on 30 patients of which 6 had bilateral hydrocele, Jaboulay's procedure was performed on 10 patients of which 1 had bilateral hydrocele and Radical excision of sac was performed in 10 patients of which 2 patients had bilateral hydrocele.

All patients were given tight scrotal support and appropriate antibiotics and analgesics. Corrugated rubber drain was removed after 48 hrs. The sutures in most cases were removed between 6-12 days. Except in few cases associated with partial dehiscence or discharge from wound, sutures were removed between 12-14 days and the patients were

hospitalized and observed till the wound healed

Ten patients who were either elderly i.e., above 60 yrs or unfit for surgery or refused surgery were selected to undergo Aspiration Sclerotherapy on out patient basis. All patients had primary vaginal hydrocele of the testis with no evidence of hernia or scrotal disease. Patients were followed up 2, 6, 12 weeks and 6 months after treatment.

Above table shows that in Lord's procedure there was shorter post-operative stay with most of the patients being discharged within 10 days which is similar in Jaboulay's procedure but more number of patients being discharged between 6-10 days. However Radical excision of the sac required greater post-operative stay with most of the patients being discharged between 11-15 days.

**Table 5:** Shows the types of operation performed

Types of operations	Present study	Rai et al study <sup>4</sup>
Lord's plication	30	50
Jaboulay's procedure	10	10
Radical excision of sac	10	10

**Table 6:** Shows the median duration of post operative stay following each procedure

Types of operations (days)	Present study (days)	Rai et al study <sup>4</sup>
Lord's plication	6	4
Jaboulay's procedure	8	9
Radical excision of sac	10	8

**Table 7:** Shows the details of the Aspiration Sclerotherapy comparing the present study with Bodkar et.al. study

No. of patients	Present study 10	Bodkar et al <sup>5</sup> study 10
Median Age (range)	58 yrs (18 - 75 yrs)	72 yrs (63 - 89 yrs)
Median duration (range)	1.5 yrs (2mths - 10 yrs)	1 yr (5wks - 6 yrs)
Median vol. of fluid aspirated	250ml (50 - 500ml)	180ml (22 - 400ml)
Sclerosant used	500mg of tetracycline in 0.9% saline	500mg of tetracycline in 0.9% saline

**Table 8:** Shows the comparison of the outcome of sclerotherapy between the present study and Bodkar et.al. study

No. of patients	Present study	Bodkar et al <sup>5</sup> study
	10	10
No. of cured (%)	8 (80)	9 (90)
Primary cure	4	5
Secondary cure	4	4
No. of recurrence (% age)	2 (20)	1 (10)
No. with pain (% age)	2 (20)	2 (20)
No. with complication	--	--

## Discussion

Above table compares the average number of days of post operative stay after the three types of operation

Above table shows that 8 out of 10 patients were cured of their hydroceles in the present study compared to that of the Bodkar et.al. Where 9 out of 10 patients were cured.

In the present study 2 patients developed a small recurrence compared to 1 patient in the Bodkar et al study.

In both the studies 2 patients developed significant pain after injection. However there were no complication like hematoma or infection in both the studies.

From the above tables it can be concluded that aspiration sclerotherapy is a good alternative to surgery in elderly patients or patients who refuse surgery. Except for pain the incidence of complication are very low and high cure rates are obtained. However there is a small incidence of recurrence compared to surgical technique.

## Conclusion

It is observed that among surgical procedures Lord's plication is much easier and simpler technique compared to the other techniques

Aspiration sclerotherapy can be considered as an effective alternative to surgical therapy in elderly patients, those who are not fit for surgery or those who refuse surgery.

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