

A Comparative Study of Sclerotherapy With 5% Phenol In Water Versus Surgical Treatment For Primary Vaginal Hydrocele

Dr. P Kameshwari Prasad (Prof. HOD), Dr. V R Gattu(Prof.), Dr. A Ranga (PG)

Abstract: Background: Hydrocele is an abnormal collection of serous fluid between layers of tunica vaginalis¹Hydrocele is the most common benign scrotal swelling, and has been estimated to occur in 1% of the adult male population. Since olden days surgical procedures have been described for the treatment of hydrocele.

Objectives: To compare the outcome of sclerotherapy using 5% phenol in water with surgery (Jaboulay's procedure) for treatment of primary vaginal hydrocele. To find out the effectiveness of sclerotherapy using 5% phenol in water in preventing complications.

Methods: The study was conducted from October 2011-June 2013. It was a Prospective comparative Study. Total number of cases studied were 50. Patients were selected randomly for surgery and sclerotherapy (25 patients for each). Sclerotherapy treatment was done under local anaesthesia and surgery was done under spinal anaesthesia.

Results: Primary vaginal hydrocele is more common in the age group of 40-49 yrs. The study showed that complications are less with sclerotherapy when compared to treatment with surgery.

Conclusion: Sclerotherapy with 5% phenol in water is as effective as surgery in the treatment of primary vaginal hydrocele size of less than 15cm in largest diameter. Sclerotherapy had less, in fact nil complications as compared to surgery in our study.

Keywords: sclerotherapy, hydrocele, surgery.

1. Introduction

Hydrocele is an abnormal collection of serous fluid between layers of tunica vaginalis¹Hydrocele is the most common benign scrotal swelling, and has been estimated to occur in 1% of the adult male population. Since olden days surgical procedures have been described for the treatment of hydrocele. The surgical procedure commonly used for the treatment of hydrocele is excision and eversion of the sac with suturing of cut edges posteriorly.

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.

Hematoma²acts 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.

- Young (1940) enclosed the scrotum with a tight gauze and adhesive bandage.
- Jerome (1953) advocated the use of elastic bandage and scrotal support.
- 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)² described a bloodless operation for the radical cure of hydrocele that has distinct advantages over other conventional procedures.

Sclerotherapy

Sclerotherapy for hydroceles had grown in popularity as it is,

- safe,
- effective
- economical and
- day care procedure

A prospective comparative clinical study was undertaken comparing sclerotherapy using 5% phenol and surgical treatment for primary vaginal hydrocele.

2. MATERIALS AND METHODS

Place of Study: Department of General Surgery, MediCiti Institute of Medical Sciences, Ghanpur, R.R District, Andhra Pradesh

Period of study: October 2011-June 2013

Type of study: Prospective comparative Study.

Number of cases studied were : 50

Patients were selected randomly for surgery and sclerotherapy (25 patients for each).

INCLUSION CRITERIA

All patients with primary vaginal hydroceles
Less than 15cm in the largest diameter

EXCLUSION CRITERIA

- Primary vaginal hydroceles more than 15cm in the largest diameter
- Secondary hydroceles (secondary to trauma, malignancy or infection)
- Congenital hydroceles.
- Recurrent hydroceles (either sclerotherapy or surgery).

METHODOLOGY

- Detailed history was obtained, local and relevant systemic examination was carried out and all necessary investigations done.
- After obtaining written, valid and informed consent from patients and close relatives, patients were subjected for Jaboulay's procedure/Sclerotherapy.(with 5% phenol)
- Sclerotherapy treatment was done under local anaesthesia and surgery was done under spinal anaesthesia.

Procedure of Sclerotherapy :

The patient was placed in supine position and painting with povidone iodine solution and draping was done. The puncture site was identified by trans illumination of the scrotum to avoid trauma to the testis, followed by infiltration of skin and subcutaneous tissue with 2% lignocaine using a 24 gauge needle and 5 ml syringe. Scrotal puncture was done with an 18 gauge intra venous canula and hydrocele fluid was drained by gravity or 10cc syringe and collected in a graduated container. Scrotum was manipulated to complete the emptying of the hydrocele. This was followed by injection of 5% aqueous phenol into the tunica vaginalis sac.

- If hydrocele fluid is less than 400ml,

After complete aspirating the hydrocele fluid, 5% phenol equal in volume to 10% of the aspirated fluid is injected in to the sac.

- If hydrocele fluid is equal to or more than 400ml,

After complete aspirating the hydrocele fluid, 5% phenol equal in volume to 10% of the aspirated fluid is injected in to the sac

- After both procedures tight scrotal support was given to the patients
- All patients included in the study were followed at intervals of,
 - one week,
 - one month and
 - three months.

3. OBSERVATIONS AND RESULTS

Table no.1
Age incidence (N=50)

| Age group in years | No. of patients (n) | Percentage (%) | No. of patients treated with | |
|--------------------|---------------------|----------------|------------------------------|---------------------|
| | | | Sclerotherapy | Surgery(jaboulay's) |
| 20-29 | 7 | 14 | 4 | 3 |
| 30-39 | 8 | 16 | 3 | 5 |
| 40-49 | 17 | 34 | 10 | 7 |
| 50-59 | 12 | 24 | 6 | 6 |
| 60-69 | 6 | 12 | 2 | 4 |

Primary vaginal hydrocele is more common in the age group of 40-49yrs(with mean age incidence of 44.5 years)

Table no.2
Average duration of stay in hospital(N=50)

| Treatment modality | Average Stay in hospital |
|-----------------------------|--------------------------|
| Jaboulay's procedure (n=25) | 6.88 Days |
| Sclerotherapy (n=25) | 1.76 Days |

The present study shows number of days stayed in hospital is less with sclerotherapy when compared to surgical procedure.

Table no.3
Post procedure complications(N=50)

| Treatment modality | Infection | Hematoma | Pain (with in 24 hrs) |
|-----------------------------|-----------|----------|-----------------------|
| Jaboulay's procedure (n=25) | 1 | 1 | 9 |
| Sclerotherapy (n=25) | NIL | NIL | 3 |

The present study shows complications are less with sclerotherapy when compared to treatment with surgery.

4. DISCUSSION

This study was undertaken with the aim of comparing Sclerotherapy using 5% phenol versus Surgical treatment for patients with primary vaginal hydroceles, size less than 15cm in largest diameter admitted in the Department of General Surgery, MediCiti Institute of Medical Sciences, Ghanpur, Andhra Pradesh.

The standard treatment of hydrocele is surgery and is widely accepted as most effective. The disadvantage of surgical treatment is incidence of complications such as,

- Pain,
- Hematoma and
- Infection.

- In sclerotherapy complications like infection and hematoma are not observed.

- In this study less invasive Sclerotherapy is compared with Surgical treatment (jaboulay's) to find out effectiveness of Sclerotherapy.

The following tables show the comparison of the present study with previous studies with respect to various important components.

Table no.4

Percentage of patients with post procedure pain

| Type of Procedure | M.S.Agarwal et al Study (2009) (N=86) | Labib .M.A Study (2004) (N=80) | Present study (N=50) |
|----------------------|---------------------------------------|--------------------------------|----------------------|
| Sclerotherapy | 14.5%(4) | 0% | 12%(3) |
| Jaboulay's procedure | 64%(9) | 73.5%(29) | 36%(9) |

Post procedure pain is less in Sclerotherapy when compared to Jaboulay's procedure.

In M.S Agarwal study²⁶

- Out of 29 patients treated with Sclerotherapy-14.5% (4) patients complained pain after treatment.
- Out of 28 patients treated with Surgery - 64% (9) patients complained of pain after treatment.

In Labib M.A study²⁸

- Out of 40 patients treated with Sclerotherapy - No patient complained of pain after procedure.
- Out of 40 patients treated with Surgery - 73.5% (29) patients complained of pain.

In present study

- Out of 25 patients treated with sclerotherapy 12% (1) patients complained of pain.
- Out of 25 patients treated with surgery 36% (9) patients complained pain after procedure.

In present as well as other studies post procedure pain is less in Sclerotherapy with 5% phenol when compared to Surgical procedure (Jaboulay's).

Table no.5

Percentage of patients with post procedure infection

| Type of Procedure | M.S.Agarwal et al Study(2009) (N=86) | Labib .M.A Study (2004) (N=80) | Present study (N=50) |
|----------------------|--------------------------------------|--------------------------------|----------------------|
| Sclerotherapy | 0% | 0% | 0% |
| Jaboulay's procedure | 7.1%(2) | 9%(4) | 4%(1) |

Chance of infection is minimal in Sclerotherapy.

In M.S Agarwal study²⁶

- Out of 29 patients treated with Sclerotherapy - No patient had infection.

-Out of 28 patients treated with Surgery- 7.1% (2) patients had wound infection.

In Labib M.A study²⁸

- Out of 40 patients treated with Sclerotherapy - No patient had infection.

- Out of 40 patients treated with Surgery- 9% (4) patients had wound infection.

In present study

-Out of 25 patients treated with sclerotherapy-no patient had wound infection.

-Out of 25 patients treated with surgery- 4% (1) patients had wound infection.

In present as well as other studies post procedure infection is seen in Surgical (Jaboulay's) procedure and not seen in Sclerotherapy with 5% phenol.

Table no.6

Patients presented with Hematoma

| Type of Procedure | M.S.Agarwal et al Study(2009) (N=86) | Usman Latif et al Study (2008) (N=50) | Present study (N=50) |
|----------------------|--------------------------------------|---------------------------------------|----------------------|
| Sclerotherapy | 0% | 8%(2) | 0% |
| Jaboulay's procedure | 35.7%(10) | 12%(3) | 4%(1) |

Chance of hematoma is more likely in Jaboulay's procedure

In M.S Agarwal et al study²⁶

- Out of 29 patients treated with Sclerotherapy- No patient had hematoma.

-Out of 28 patients treated with Surgery- 35.7% (10) patients had hematoma.

In Usman Latif et al study²⁹

- Out of 25 patients treated with Sclerotherapy - 8% (2) patients had hematoma.

- Out of 25 patients treated with Surgery - 12% (3) patients had hematoma.

In present study

-Out of 25 patients treated with sclerotherapy –no patient had hematoma.

-Out of 25 patients treated with surgery - 4% (1) patients had hematoma after procedure.

Post procedure complication like hematoma is seen in Surgical (Jaboulay’s) procedure in both present and other studies and it is comparable.

Table no.7

Average Duration of Post procedure stay in Hospital

| Type of Procedure | M.S.Agarwal et al Study(2009) (N=86) | Labib .M.A Study (2004) (N=80) | Present study (N=50) |
|----------------------|--------------------------------------|--------------------------------|----------------------|
| Sclerotherapy | 1.8hrs | 1day | 1.76days |
| Jaboulay’s procedure | 9.7hrs | 4days | 6.88days |

Duration of stay in hospital is less in Sclerotherapy.

In M.S Agarwal et al study –an average duration of hospital stay in sclerotherapy is 1.8hrs and in surgery is 9.7hrs.

In Labib.M.A Study –an average duration of hospital stay in sclerotherapy is 1day and in surgery is 4days.

In present study -an average duration of hospital stay in sclerotherapy is 1.76days and in surgery 6.88days.

In both present and other studies duration of stay in hospital is less in Sclerotherapy with 5% phenol when compared to surgical (Jaboulay’s) procedure, as it is less invasive procedure.

5. CONCLUSIONS

- 1) Sclerotherapy with 5% phenol in water is as effective as surgery in the treatment of primary vaginal hydrocele size of less than 15cm in largest diameter.
- 2) Sclerotherapy had less, in fact nil complications as compared to surgery in our study.
- 3) Sclerotherapy can be recommended as a first option for treatment of primary vaginal hydrocele with size less than 15cm in the largest diameter and those not willing for surgical procedure, most useful in older men who are unfit for surgery due to co-morbid conditions.

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