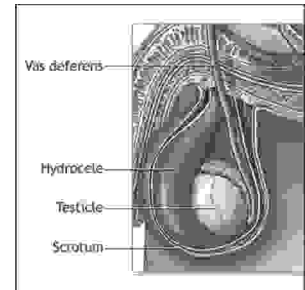


ORIGINAL

PROF-1307

HYDROCELE; SURGERY vs. SCLEROTHERAPY



DR. USMAN LATIF, FCPS, MCPS

Assistant Professor
Independent Medical College,
Faisalabad.

Dr. Quddus-ur-Rehman, FCPS

Assistant Professor
Independent Medical College,
Faisalabad.

DR. MUHAMMAD ABID BASHIR, FCPS

Assistant Professor
Independent Medical College,
Faisalabad.

Dr. Tajammal Abbas Shah, FCPS

Assistant Professor
Independent Medical College,
Faisalabad.

DR. ABID RASHID, FCPS

Assistant Professor
Independent Medical College,
Faisalabad.

ABSTRACT... drusmanlatif@yahoo.com **Introduction:** A hydrocele is an abnormal collection of serous fluid within the tunica or processes vaginalis. It is treated by surgery and sclerotherapy. **Objectives:** To compare the results of surgery and sclerotherapy in the treatment of scrotal hydrocele. **Design:** Randomized control trial. **Setting:** Department of Surgery, Allied Hospital, Faisalabad; **Period:** April 2001 to March 2002. **Patients:** 50 consecutive male patients with provisional diagnosis of hydrocele. **Methods:** Patients stratified into three age groups and each stratum equally and randomly divided into two groups for sclerotherapy (A) or surgery (B). 1 % Sodium tetradecyle sulphate (STD) was used as sclerosant after aspiration of hydrocele. Surgical procedures used were Jaboulay's, Lord's and subtotal excision. Follow up done for three months. **Results:** Age range was from 15 to 75 years. Hydrocele was right, left and bilateral in 56%, 42% & 2% patients. Postoperative complications included pain (24% & 20%), hematoma (8% & 12%), infection (8% & 12%), recurrence (40% & 12%) and complications related to anesthesia (0% & 36%) in group A and B respectively. **Conclusions:** Results of sclerotherapy and surgery for hydrocele are comparable with advantage of economy and convenience for sclerotherapy. However, larger study is recommended with comparison between different sclerosants to find the best one with high success rate and minimum complications.

Key words: Hydrocele, sclerotherapy.

INTRODUCTION

A hydrocele is an abnormal collection of serous fluid within the tunica or processes vaginalis¹. There are four varieties; congenital, infantile, vaginal and encysted hydrocele of the cord. Hydrocele fluid is amber in color and sterile¹. These are treated by a variety of surgical procedures; excision, plication (Lord's operation) and Jaboulay's procedure being the commonest. Hydrocele should be treated because it causes discomfort, pain and it can get infected and may compromise blood supply of testis.

Surgical procedures are associated with complications of anesthesia and surgery. Moreover hospital admission is usually required thus affecting the health and economy of the patient. Time and economy are major concerns of today and emphasis is on minimal invasive techniques.

OBJECTIVES

To compare the results of surgery and sclerotherapy in the treatment of scrotal hydrocele.

PATIENTS AND METHODS

The study was conducted at Department of Surgery of Allied Hospital, Faisalabad which is an 1100 bedded tertiary care hospital.

A total of 50 consecutive male patients with minimum age of 13 years with the clinical diagnosis of hydrocele presenting to Allied Hospital, Faisalabad from April 2001 to March 2002 were included in the study. Patients with history of hydrocele more than five year, hydrocele more than 15 cm in maximum diameter and patients with history of previous scrotal surgery were excluded.

After obtaining written informed consent, patients were randomly divided into two groups for sclerotherapy (group A) or surgery (group B). Consent for patients below 18 years of age was obtained from their parents. Complete clinical history and general physical examination was performed and recorded in the proforma and routine investigations were done on OPD basis.

Aspiration sclerotherapy was performed as an outpatient procedure. Under aseptic conditions, an intravenous cannula was inserted in the hydrocele sac. After aspiration of all the fluid, cannula was left in situ and through the same cannula, 2-5 ml 1 % sodium tetracycline sulphate (STD) was injected according to size of the sac.

2ml for < 100 ml aspirate
3ml for < 100-200 ml aspirate
5ml for > 200 ml aspirate

Surgery was performed under general or spinal anesthesia. Jaboulay's, plication or subtotal excision was done according to size and thickness of the sac. Patients were followed up at day 3, 7, 14 and 30 and then monthly for another two months.

RESULTS

Age range was 15 to 75 years. Hydrocele was present on right side in 56% and left side in 42% patients while one patient (2%) had bilateral hydrocele. Surgical procedures performed and complications of operation and sclerotherapy are given in table I & II respectively. Complications of anesthesia included laryngitis, cough, nausea, vomiting, headache, vertigo, abdominal pain and atelectasis. Postoperative pain was treated with NSAIDs. Mean hospital stay was three days for surgery while sclerotherapy was done as an outpatient procedure and patient was sent home after two to three hours. Average cost of sclerotherapy was 224 Rupees (125 – 350 Rs. Including cost of repeat procedures). The average cost of surgery was Rs. 1663 (Rs.1375-1950).

Table-I. Surgical procedures performed. (n=25)

Procedure performed	No. of patients	%age
Jaboulay's	15	60
Plication (Lord's)	9	36
Subtotal excision	1	4

Complication	Group A, Sclerotherapy (n=25)	Group B, Surgery (n=25)
Pain	24%	20%
Hematoma	8%	12%
Infection	8%	12%
Anesthesia related complications	-	36%
Recurrence after 1 st attempt	40%	12%

DISCUSSION

In the present era, time and money has got so much importance that need for minimal invasive and day case procedures is increasing. The hydrocele has been traditionally treated by various surgical procedures. Repeated aspirations were practiced some fifty years ago but results were not favorable. Apart from inconvenience of repeated aspirations, there was risk of recurrence, infection and hematoma formation. The tunica vaginalis became thickened and unsuitable for other forms of treatment.³ Therefore, aspiration was combined with sclerotherapy and results were compared.³⁻⁵ Different sclerosing agents used so far have their own merits and demerits.

Tetracycline sclerotherapy is quick, safe and economical^{6,7} but associated with high frequency of intractable pain.⁵ Various other substances used as sclerosant include polidocanol⁸, antazoline³, OK-432⁹, Quinacrine¹⁰, Sodium tetradecyl sulphate (STD)^{11,12}, ethanolamine oleate¹³, phenol¹⁴ and fibrin glue¹⁵ with variable results. Sclerotherapy with OKB432 is associated fever and local inflammatory reaction although the recurrence is only 10%.⁹ Polidocanol and STD cause less pain and inflammation as compared to Tetracycline or OKB-432. Results with fibrin glue have been equivocal and sample size has been small (only nine patients in series of Sirpa & Martti)¹⁵. Moreover, the cost of fibrin glue is high for low socioeconomic

population like ours.

In our study, STD was selected as sclerosant being relatively painless and economical. We compared results of surgery and sclerotherapy in terms of cure, complications, treatment cost and hospital stay.

The success rate of surgery was 88% and that of sclerotherapy after first attempt was 60%. Another 20% patients were cured after 2nd injection. These results are comparable with international studies¹⁶. The success of sclerotherapy was 47.5%, 30%, 12.5%, 5% and 2.5% after 1st, 2nd, 3rd, 4th and 5th injection respectively in study by Shan et al.¹⁴ In another study by Erdas et al., 41.7% patients required more than one injection to obtain cure.¹⁷ We did not attempt 3rd injection and five patients with recurrence after 2nd injection were subjected to surgery.

Post operative pain was present in 24% patients in sclerotherapy and 20% patients in surgery groups. The frequency of pain after sclerotherapy varies from nil¹⁴ to more than 40%.⁹ The difference may be due to different sclerosing agents.

Other complications included hematoma and infection (8% for sclerotherapy and 12% for surgery). Complications of anesthesia were, of course, observed in surgery group only.

In our study, the cost of surgery was about eight to ten times that of sclerotherapy. These results are comparable to other studies by Hanif et al (8:1)¹¹, Beiko et al (9:1)¹² and Fracchia et al (9:1)¹⁶.

The mean hospital stay was three days for surgery, while sclerotherapy was performed as an outpatient procedure and no hospital admission was required. Hence sclerotherapy was cost effective because of its low cost and no loss of work by patients. In some studies, surgery has also been performed as day case¹⁷. In our set up, most of the patients are not well educated and the facilities of post operative care at periphery and liaison between such center and the hospital; a mandatory

requirement for day case surgery; does not exist. Our results are comparable to a local study from Lahore in which mean hospital stay was 2.5 days while sclerotherapy was performed as an outpatient procedure¹¹.

Follow up in our study is short, only three months. In our set up it is still difficult to persuade patients to come all the way to hospital when they do not have any problem, spending their time and money.

CONCLUSION

It is concluded that aspiration and sclerotherapy is quick, safe and economical alternative to surgery for the treatment of hydrocele. However, a comparative study is required to find out the best sclerosing agent in terms of high success rate and minimum complications.

REFERENCES

1. Russel RCG, William NS & Bulstrode CKJ (Eds). **Testes & scrotum**. IN Bailey and Love. Short Practice of Surgery. 24th edition. 2004. Arnold, London. pp 1403-16.
2. Gillanwater J, Grayback JT. Howards SS & Ducketts SW. (Eds). **Adult and Pediatrics Urology**. Vol. 2. 2nd edition, 1991. Mosby. Saint Louis.
3. Roosen JU, Larsen T, Iversen B, Birg JB: **A comparison of aspiration, antazoline sclerotherapy and surgery in the treatment of hydrocele**. Br J Urol. 1991; 68(4):404-6.
4. Khalid G: **Aspiration and sclerotherapy of hydrocele and epididymal cyst**. J.med.Scienc.A.Emm.1996; 33(9):105-7.
5. Sankari BR, Boullier JA, Garvin PJ, Parra RO: **Sclerotherapy with tetracycline for hydrocele in renal transplant patients**. J. Urol. 1992; 148(4):1188-9.
6. Honnes-de-Lichtenberg M, Miskowiak J, Krogh J.: **Tetracycline sclerotherapy for hydrocele and epididymal cyst; long term results**. Acta. Chir. Scand. 1990;156(6-7):439-40.
7. Ullah N, Gondal SH: **Sclerotherapy: An acceptable mode of treatment in primary hydrocele**. Pak. Postgrad. Med. J. 2001;12(3):111-2.
8. Andersen M, Bentsen G.: **Sclerotherapy for spermatocele and hydroceles. Long term results of polidocanol use**. Tidsskr.Nor.Laegeforen. 1993;113(25):3146-7.
9. Yamamoto M, Hibi H, Miyake K: **A new sclerosant injection for testicular hydrocele with aspiration and injection of OKB-432**. Int. Urol. Nephrol. 1994;26(2):205-8.
10. Castillo-Jimeno JM, Gonazalez-de-Garibay, Sebastian-Borrueel-JL: **Acquired hydrocele in the adult: Sclerotherapy**. Arch. Esp. Urol. 1991;44(5):627-34.
11. Hanif F, Mirza SM, Ali AA, Chaudhary AM: **Role of sclerotherapy as primary treatment of hydrocele**. J.Coll. Physicians Surg. Pak. 2001;11(10):611-3.
12. Beiko DT, Kim D, Morales A: **Aspiration and sclerotherapy versus hydrocelectomy for treatment of hydroceles**. Urology. 2003;61(4):708-12.
13. Matilla SI, Tammela TL, Makarainen HP, Hellstrom PA: **Sonographic follow up of ethanolamine oleate sclerotherapy for hydrocele**. Journal of Ultrasound in Medicine. 1993;12(6):311-5.
14. Shan CJ, Lucon AM, Arap S: **Comparative study of sclerotherapy with phenol and surgical treatment for hydrocele**. J. Urol. 2003;169(3):1056-9.
15. Sirpa A, Martti AO: **Results of fibrin glue application therapy in testicular hydrocele**. Eur Urol. 1998;33:497-9.
16. Fracchia JA, Armenakas NA, Kohan AD: **Cost effective hydrocele ablation**. J. Urol. 1998;159(3):864-7.
17. Erdas E, Pisano G, Pomata M, Pinna G, Secci L, Licheri S, Daniele GM: **Sclerotherapy and hydrocelectomy for the management of hydrocele in outpatient and day surgery settings**. Chir Ital. 2006;58(5):619-25.