The Professional Medical Journal
www.theprofesional.com

ORIGINAL PROF-2447

PRIMARY VAGINAL HYDROCELE;
DIFFERENT SURGICAL PROCEDURES: A COMPARATIVE STUDY

Dr. Nazim Jat[1], Dr. Farhat Bano[2], Dr. Iqbal Ahmed Memon[3], Dr. Mohammad Saleh Memon[4], Dr. Mohammad Ahmed Azmi[5]

1. Associate Prof. of Surgery
   Al-Tibri Medical College, Karachi.
2. Assistant Prof. of Surgery
   Al-Tibri Medical College, Karachi.
3. Prof. of Surgery
   Al-Tibri Medical College, Karachi.
4. Prof. of Pathology
   Al-Tibri Medical College, Karachi.
5. Prof. of Physiology
   Al-Tibri Medical College, Karachi.

Correspondence Address:
Prof. Dr. Mohammad Ahmed Azmi,
Head, Department of Physiology
AL-Tibri Medical College, Karachi
Old Thana, Gadap Town
Malir – Karachi.

azmiahmed@hotmail.com

ABSTRACT... Background: A hydrocele is a fluid - filled sac surrounding a testis that results in the swelling of scrotum. They can develop due to inflammation or injury within the scrotum. **Objective:** This study aimed to evaluate the efficacy and adaptation of different surgical procedures in the repair of hydrocele. **Study design:** Comparative, Retrospective study **.Place and duration of Study:** The study was conducted at Fauji Foundation Hospital Karachi , Al-Tibri Medical College, Karachi and Civil Hospital Karachi from January, 2000 to December, 2013. **Patients and methods:** Patients with primary vaginal hydrocele registered during the period of thirteen years in the out patient department of surgery were selected. A total of 300 patients were assessed clinically, diagnostically and radiologically about the status of hydrocele before the surgical procedures and anesthetic opinion. The different surgical technique were carried out in different group of patients asJaboulay's technique in 70 patients, Lord's procedure in 70 patients, Aspiration and Sclerotherapy in 05 patients, Window operation technique in 05 patients and the Hydrocelectomyby supra pubic procedure were carried out in 150 patients out of total 300 registered patients. The data collected and analyzed statistically in SPSS version 19.00. **Results:** The different procedures have been adopted surgically in patients with primary vaginal hydrocele. The results showed that among the different operative techniques adopted, the best procedure regarding hydrocelectomy is the supra pubic approach line of treatment. It showed better result and recovery with very minimum complications and side effects as compared to other surgical procedure. **Conclusions:** The data thus concluded that hydrocelectomy done via supra pubic approach in number of patients proved to be the best procedure because of having very little complications.

Key words: Primary vaginal hydrocele, Hydrocelectomy, Surgical procedures, Supra pubic approach.

Article received on:
24/02/2014
Accepted for publication:
10/08/2014
Received after proof reading:
16/10/2014

Article Citation: Jat N, Bano F, Memon IA, Memon MS, Azmi MA. Primary vaginal hydrocele; different surgical procedures: a comparative study. Professional Med J 2014;21(5):879-882.

INTRODUCTION

Vaginal hydrocele is the most common primary hydrocele. It usually appears in middle aged or elderly men. This is caused by the collection of amber coloured sterilized fluid present between the parietal and visceral layers of tunica vaginalis[1]. Adult man can develop hydrocele due to inflammation or injury within the scrotum. Most of the patients refuse the doctor for surgical procedure of hydrocele because of shyness and fear of development of impotence and infertility[2,3]. A hydrocele usually is not painful and harmful and may disappear without treatment with in the first year of life. It usually develops in hot climate[4]. Ifhydrocele gets complicated because of negligence, immediate hydrocelectomy is preferred[5]. In this connection it is important to differentiate hydrocele from chylocele,pylocele and hematocelebefore the induction of surgical procedure. It is also important to mention here that primary vaginal hydrocele may be due to Wucheria bankcrofti[6,7]. Diagnosis plays a crucial role clinically and radiologically in case of the severity of the disease[8,9]. There are different operative and non-operative treatment for hydrocele and as many procedures are using forhydrocelectomy such as Jabouley's Lord's, Patch technique, Aspiration and sclerotherapy procedures[10]. All these procedures are using by the surgeons but still it has been reported that among the different procedure which method is more suitable and reliable. The present study on the basis of data obtained indicated that hydrocelectomy via supra pubic approach proved to be the best procedure

performed for hydrocelectomy because of giving minimal side effects and better recovery results than other procedures.

PATIENTS AND METHODS

It was a hospital-based comparative, retrospective study carried out in three different hospitals of Karachi namely, Civil hospital, Al-Tibri medical college hospital and fauji Foundation hospital, Karachi from January, 2000 to December, 2013. A total 300 patients with primary vaginal hydrocele were selected for this study registered in the OPD of surgical departments of the hospital. All patients were routinely evaluated with detailed history such as onset of illness, duration of illness, presence of pain and other relevant history on a well-designed proforma. The inclusion criteria was the patients above 12 years of age with primary vaginal hydrocele. And the exclusion criteria was infantile hydrocele, Chylocele, congestive heart failure, acute onset or negative transillumination. All patients were also evaluated physically for examination of scrotum, lower extremities and inguinal regions, scrotal examination for transillumination. In addition to these, hemoglobin levels, urinalysis, ultrasound were also carried out.

All patients were randomly allocated for five different surgical procedures such as Jaboulay' procedure was done in 70 patients, Aspiration and Sclerotherapy with tetracycline in 05 patients, hydrocelectomy by supra technique was done in 05 patients respectively. The patients were operated under spinal anesthesia except one which was operated under local anesthesia. All patients received antibiotic Augmentin 1-2g prophylactically at the time of induction of anesthesia.

During the surgical procedure, Supra pubic incision of 2.5 cm was given just above pubic tubercle. After giving incision spermatic cord pulled up without disturbing the external inguinal wing. Aspiration was done for the draining of fluid from tunica vaginalis through 20 cc syringe. Tunica vaginal was excised leaving 1 cm margin from testis and epididymis as well as protecting the testis from blood supply and for hemostasis 3/0 catgut running stitch was applied. Testicular biopsy was done, if required. Patients on discharge were advised to come to clinic after 01 month and followed for 2 years regularly.

Descriptive Statistics were summarized for patients demographic. The data were analysed statistically in SPSS version 19.0

RESULTS

During three (03) years of study period, total 300 patients with primary vaginal hydrocele were recruited and examined for the status of hydrocele before the induction of surgical procedures. Comparatively five different surgical procedures were adopted among the patients. Hydrocelectomical procedures such as Jaboulay's procedure was done in 70 patients, Lord's procedure in another 70 patients, Aspiration &Sclerotherapy with tetracycline in 05 patiets, Hydrocelectomy by supra pubic approach in 150 patients and window operational procedure was done in 05 patients. Most of the hydrocelic patients were between 40-50 (75%) of age (Table-II).

Age (years)	No. of patients	%age
12-20	16	5.33
20-30	48	16
30-40	112	37.33
40-50	102	34.0
>50	22	7.33

Table-I. Distribution of primary vaginal hydrocele (n=300) in different age group of patients.

Variation in hydrocele was also seen in the number of patients with different age groups. Unilateral (right sided) hydrocele was common in patients 78 between 40-50 year and 62 in the age group of 30-40 year (Table II).Bilateral hydrocele 80% in 8 patients (40-50 years) and 20% in patients with more than 50 years left sided unilateral hydrocele was also seen in 50 patients with 30-40 years and 16 in the age group of 40-50 years.(Table II).

Total 96 complications were encountered. Most common complication was wound infection,

Patient age (year)	No. of Patients		
	Unilateral Hydrocele		Bilateral Hydrocele n=100
	Left sided n=100	Right sided n=190	
12-20	4 (4%)	12 (6.32%)	-
20-30	30 (30%)	18 (9.47%)	-
30-40	50 (50%)	62 (32.63%)	-
40-50	16 (16%)	78 (41.05%)	8 (80%)
>50	-	20 (10.53%)	2 (20%)

Table-II. Characteristics and nature of hydrocele in patients (n=300) with different age groups.

Complications	Procedure				
	Jabouley's n=70	Lords n=70	Hydrocelectomy Supra Public Approach n=150	Aspiration & Sclerotherapy N=05	Window Technique N=05
Wound infection	30(42.28%)	10(14.28%)	0(0%)	0	0
Hematoma	5(7.17%)	2(2.855)	0(0%)	2(40%)	0
Recurrence	0(0%)	0(0%)	0(0%)	5(100%)	5(100%)
Infertility	0(0%)	0(0%)	0(0%)	0(0%)	0
Neuropraxia	0(0%)	0(0%)	7(4.67%)	0(0%)	0
Scrotal Edema	7(10%)	5(7.14)	0(0%)	0(0%)	4(80%)
Heavy/Saggey Feeling	12(17.14%)	5(7.14%)	0(0%)	0(0%)	0
Testicular Atrophy	0(0%)	0(0%)	0(0%)	0(0%)	0

Table-III. Complication showing in relation to different surgical procedures (n=96 complications).

42.8% in Jaboulay's and 10 % in Lord's operation (Table III). Recurrence was 100% in aspiration and sclerotherapy and window technique. Testicular atrophy was seen in a single procedure only in one patient for up to two years. In hydrocelectomy via supra public approach no single complication was observed except transient neuropraxia in 4.67% of patients (Table III).

DISCUSSION

Hydrocele is a common surgical problem. The distribution of the incidence of hydrocele in the present study showed peaks of infection at 30-40 years of age but in different study there are two peaks at 20-29 year and above 50 years of age[11]. In this study we evaluated to find out the best surgical procedure for hydrocele repair. Although a number of surgical procedure and approaches has been reported in literature for this purpose specially excision technique, plication technique, window operation, Dartos Pouch technique and sclerotherapy[12], but the best technique that we found is excision technique. In our study vaginal hydrocele is common between 30-40 years and less common above 50 year of life. Though most of the patient presented with painless swelling but few presented with discomfort in lump while walking and cycling[14]. Generally testis is not felt separate from swelling and there is no association with Hernia's. Fluid in hydrocele is mostly amber colour and sterile on culture[15]. Post operative recovery was quick without any serious morbidity unless wound get infected and recurrence was not found in excision procedure[16]. It has also been reported that patient repaired by other methods have recurrence rate[17] and but highest incidence is reported in sclerotherpy case[18] . Although patients operated through supra pubic technique by the present study hasneuropraxia in 7 patients but all recovered within 03 weeks. No permanent damage to nerve was observed in any case. Hydrocele can be both unilateral and bilateral but hydroceles on right side are more common than the left[19]. In this case we compared the cases done by Lord's Technique[20], Jabouley's Technique[21], patch Technique and aspiration

sclerotherapy with the supra pubic approach, and we found that complication like hematoma, wound infection, recurrent hydrocele infertility following the bilateral hydrocelectomy are more in the above mentioned techniques as compared to supra pubic hydrocelectomy which has very few complications.

CONCLUSIONS

The data obtained from this study concluded that supra pubic hydrocelectomy is the best procedure with very few complication and patient are much more satisfied as compared to the other procedures. Therefore, it is suggested that supra pubic approach procedure should be adopted for hydrocelectomybecause of having very few complications and also giving better recovery results.

REFERENCES

1. Blandey PJ. **Lecture notes on urology:** Testicle and seminal test 3rd Edition,1984-1986, P.279.
2. Dados N, Tmski D, Keros P, Rados j. **The biochemical aspect of testis hydrocele.** Acta Med croatica 1996; 50 (1): 33-36.
3. Ahorlu C K, Dunya S k, Asamoah G, Simonsen P E. **Consequences of hydrocele and the benefit of hydrocelectomy: a qualitative study in lymphatic filariasis endemic communities on the coast of Ghana.** Acta Trop 2001; 20 (3) 215-221.
4. Jahnson S, Johansson J E. **Results of window operation for primary hydrocele.** Urology 1993; 41 (1): 27-28.
5. Murillo Mirat J, Moran Penco J M, Cabello Padial J. **Abdomino-Scrotal hydrocele: an unusual disease.** ActasUrolEsp 1994; 18 (8): 838-840.
6. Pani SP, Balakrishnan N, Srividya A, Bundy DA, Grenfell Bt. **Clinical epidemiology of bancroftianfilariasis:Effect of age and gender.** Trans R Soc Med Hyg 1991; 85-260-262.
7. Gottlesman JE, **Hydrocelectomy: evaluation of technique.** Urology 1976; 7:386-387.
8. Zornow D H, Landes R R. **Scrotal palpation.** AmFam Physician 1981; 23 (1): 150-154.
9. Benjamin K. **Scrotal and inguinal masses in the newborn period.** Adv Neonatal care 2002; 2(3):140-148.
10. Jamuluddin M, Alam T, Khan RA, Abbas S M. **Results of surgical management of primary vaginal hydrocele in patients of all ages.** Pak J Surgery 2009; 25 (3):190-194.
11. Chukwudi O, Okorie CO, Louis L, Pisters LL, Ping Liu. **Long standing hydrocele in adult Black Africans: Is Preoperative scrotal ultrasound justified?** NigerMed J2011; 52:173-6176.
12. Hass JA, Carrion HM, Sharkey J, **Politano Va Operative treatment of hydrocele: another lood at Lord's procedure.** Urology1978; 12:678-679.
13. Arsalan A S, Inseesu L, Yalin T, EL M, Belet U. **Bilateral abdominoscrotal hydrocele.** Abdom imaging1996; 21(2):177-178.
14. Hajgaard Rasmussen H, Schra der P. **Testicular Hydrocele: an initial sign of colon carcinoma.** Case Report.ActaChirScand 1988; 154(1): 65-66.
15. Gooding G A , Leonhardt W C , Marshall G, Seltzer MA , Presti J C. **CholesterolCrystals in hydrocele:sonograhpic detection and possible significance.** AJR am J Reontgenol 1997;169(2):527-529.
16. Honnens de Lichtecnberg M, Miskowiak J, Krogh J. **Tetracycline sclerotherepy of hydroceles and epididymal cysts: Long term results.** Actachir Scand.1990; 156(6-7):439-440.
17. Nishiyama T, Terunuma M. **Endoscopic hydrocele Fulguration.** Hinyokika-kiyo 1994; 40(2):125-126.
18. Merenciano Cortina F J, RafieMazkati W, AmatCelcillia M. **Sclerotherapy of hydrocele and cord cyst with polidocanol: Efficiency study.** Act UrolEsp 2001; 25(10):704-709.
19. Thomas G. Richard EO Jr. Eigege A, Dakum NK, AzzuwutMP,Sarki J et al. **A pilot Program of mass Surgery weeks treatment of hydrocele due to to lymphatic filariasis in central Nigeria.** Am J Trop Med Hyg 2009; 80; 447-451.
20. Albrecht W, Holti W, Aharinejad S. Pak J Surg 2009; 25(3):190-194.
21. **A pract guide to operative surg.** S. Das, 3rd Edition. Pak J Surg 2009; 25(3):190-194.