Pak Armed Forces Med J 2007; 57(1): 28-32

DAY CASE MANAGEMENT OF VARICOCELE

Muhammad Vaseem, *Rashid Husnain, *Zaki Hussain, *Amir Mian

CMH Chhor, *CMH Rawalpindi

ABSTRACT

Objective: To evaluate the outcome of treatment of varicocele by low ligation under local anaesthesia and to establish the low ligation as a mode of treatment for early mobilization of the patient and early return to work.

Design: Descriptive study.

Place and Duration of Study: Department of Surgery Combined Military Hospital Rawalpindi from June 2002 to Dec 2002.

Subjects and Method: This study included 50 patients with varicocele irrespective of their age treated by low ligation under local anaesthesia in day case settings and were followed for 3 months.

Results: The results of the procedure on the symptoms were quite satisfactory. Post operatively complications were seen in only 8 (16%) patients. Post operative hematoma formation occurred in only 1 (2%) patient, wound infection in 2 (4%) patients, transient pain at the site of operation was present in 2 (4%) patients, transient hydrocele developed in 1 (2%) patient, permanent hydrocele developed in 1 (2%) patient, in 1 (2%) of the patient the dilated veins persisted after the operation even at 3 month follow up.

Conclusion: This study concludes that low ligation of varicocele as day case surgery is a very useful day case procedure in the treatment of varicocele that can be very safely carried out under local anaesthesia with a very high healing rate and minimal complications.

Keywords: Varicocele, day case management

INTRODUCTION

A varicocele is a dilatation of the pampiniform venous plexus and the internal spermatic vein [1]. It is a well known and quite prevalent medical problem among military soldiers. Varicocele is usually asymptomatic. It is more frequent and troublesome in hot climates. Tall, thin men with pendulous scrota are frequently affected. The problems which it can cause include.

Infertility

The varicocele may cause infertility by decreasing the count of sperm and quantity of semen [2]. It is the most common surgically correctable cause of male infertility [3].

Correspondence: Maj Muhammad Vaseem, Surgical Specialist, CMH Chhor Cantt.

Discomfort

Varicocele may cause discomfort leading to a heavy dragging feeling in scrotum and affect the physical activity of the person.

Varicocele occurs in approximately 10-15% of the fertile male population [4], but not all varicocele impair sperm function, overall semen quality, or fertility.

Varicocele is found in approximately 30% of infertile males [5]. It is the most common surgically correctable cause of male infertility [6].

Varicocele is usually asymptomatic and the patient often presents for evaluation of his role in an infertile marriage. Varicocele does not occur with equal frequency on the left and right side because approximately 90% are left

sided [7]. The diagnosis of varicocele is clinical and the investigations are rarely used for diagnosis.

Varicocele has been divided in to three grades [8] (fig):

- Grade-I (small) palpable with the help of Valsalva maneuver.
- Grade-II (moderate) palpable without the Valsalva maneuver.
- Grade-III (large) varicocele is visible on inspection.

There are different methods of treatment of varicocele [9]:

- Open Surgical
- Laparoscopic
- Radiological Embolization

Aim/Purpose

The aim of the study was to evaluate the outcome of treatment of varicocele by low logiation under LA to establish the low ligation as a mode of treatment for early mobilization of the patient and early return to work.

PATIENTS AND METHODS

A descriptive study was carried out in CMH Rawalpindi to analyze the results of low ligation of varicocele as day case procedure.

A total of 50 patients with varicocele irrespective of their age group, reporting in the surgical department of CMH Rawalpindi between July 2002 and December 2002 were included in this study. These patients included serving and retired personal of Armed Forces and their families, non-entitled civilian patients from all walks of life and the candidates applying for recruitment representing all ethnic groups and areas of Pakistan.

Patients were followed up after 01 week, 01 month and after 03 months of operation. Patients were followed up and results of surgery on the symptoms were observed as well as the development of any complications. Post operative physical activities were recorded according to the following grades (table-3):

Grade-3: As pre-operative activity

Grade-2: Only performing jobs requiring standing or walking

Grade-1: Only performing jobs requiring sitting

Grade-0: Complete bed rest

The patients who had presented with infertility their semen analysis was done at the time of admission and after 03 months of surgery.

RESULTS

A total of 50 patients were studied. Most of the patients were in the 3rd decade. Out of the 50 patients, the youngest was of 16 years and the oldest was of 45 years. Mean age of the patients was 25.6 years (SD ± 7.55). The peak incidence was between 21 to 30 years with 29 patients (58%). The second peak incidence was between 11 to 20 years with 20 patients (40%) (table-2).

The most common clinical presentations in our series (table-1).

Mean operating time was 33.5 minutes (SD± 8.59). Range is 20 to 50 minutes.

Out of the 50 patients, maximum number of patients, 33 patients (66%) presented with grade-II varicocele. 14 (28%) patients presented with grade-III varicocele and 3 patients (6%) had grade-I varicocele.

Out of the 50 patients only 2 patients (4%) had right sided varicocele. Rest of all the patients 48 (96%) had left sided varicocele.

The operation was performed as day care procedure. The mean stay of the patients post operatively was 3.3 hours (SD ± 0.84).Range was 3 hours to 7.45 hours.

The mean post operative period of rest was 80 hours (SD ± 11.48). Range was 72 to 96 hours.

Post operatively complications were seen in only 8 (16%) patients. Out of the 8 patients

in our study only 2 (4%) patients had permanent complications while the other 6 improved with time.

There was no recurrence of the varicocele till the 3rd follow up of the patients

Recovery of the patient is assessed according to the improvement in his symptoms post operatively. The results of the procedure on the symptoms were quite satisfactory. Out of the 20 patients who presented with visible deformity only 1 patient has persistent complaint. The feeling of heaviness improved in 85.18% of the patients. The quality of the semen improved in 1 of the patient in our study.

After 01 week following were the grades of physical activity of the patients.

- Thirty three patients (66%) were having grade 2 activity.
- Four patients (8%) were having grade 3 activity.
- Eight patients (16%) were having grade 1 activity.

After 01 month the grades of activity were:

- Forty two patients (84%) were having grade 3 activity.
- Six patients (12%) were having grade 2 activity.
- Two patients (4%) were having grade 1 activity.

After 03 months the grades of activity were:

- Forty eight patients (96%) were having grade 3 activity (02 patients did not report back for 3 months follow up).

DISCUSSION

Varicocele is one of the most common abnormality among men which causes infertility. Varicocelectomy is the commonest operation performed for its treatment [10]. 96% of the patients in our study were having the varicocele on the left side and only 4% was on the right side. In the study of Amelar and Dubin [11]. 85.6% of the varicocele was on the left side while 0.4% was on the right side. 14% of the varicocele was bilateral.

Open surgical methods have different approaches but the main principle of treatment in all the approaches is the same that is to ligate the dilated veins and preservation of the testicular artery and lymphatics [12].

Open surgical retroperitoneal approach was the method chosen for many years [13]. The retroperitoneal approach has the advantage of the ligation of veins at the site of entry in to the left renal vein but the problem with the high ligation is the high incidence of recurrence and post operative hydrocele. A study by Akmal [14] has shown a recurrence rate of 5.88% while the study by Barbalias [15] has indicated a recurrence of 18.2%.

The inguinal low ligation requires a longer operating time and the incidence of hydrocele is also higher. In the study of Barbalias the incidence of recurrence as well as hydrocele was 4.5% [15].

Percutaneous transfemoral retrograde sclerotherapy is another method of treatment of varicocele. The advantage of this procedure is that it can be performed under local anaesthesia and there is no incidence of post operative hydrocele and testicular damage but the incidence of recurrence is quite high. In a study carried out by Murray [16] the recurrence was 4 to 11%.

Laparoscopic varicocelectomy is rarely performed because of the high cost, requirement of G.A. and longer operating time [17].

Sub inguinal low ligation of varicocele is another approach of open surgical technique and was studied in this study. The mean operating time in our study was 35 mins with the minimum time of 20 mins and maximum time of 50 mins. In the study of Testini [18] the minimum operating time was 20 mins and the maximum was 45 mins. As the procedure was performed as a day care procedure the

mean stay of the patients post op was 3.3 hrs with minimum of 3 hrs and maximum of 7.45 hrs. In the study of Testini [15] the post op stay of the patients was 3 to 7 hrs. The mean time off work in the patients was 80 hrs with a range of 72 to 96 hrs which means that by 96 hrs all the patients were back to their place of duty. This is the advantage when performed as a day case procedure that these patients return to their job very early. As the study was carried out in the military set up, this has an added advantage as the soldiers were required to be on duty as early as possible.

The results of the procedure on the symptoms were quite satisfactory. Out of the 20 patients who presented with visible deformity only 1 patient had persistent complaint. The feeling of heaviness improved in 85.18% of the patients. The quality of the semen improved in 1 of the patient in our study. It was 80% in the study of Testini [15] and 60% in Akmal's [15] followed the patients for 15 months and Akmal [12] followed the patients for 12 months.

As this procedure was performed as day case surgery in the day case set up, these patients were not admitted in the hospitals due to which more beds were available for admission of other major surgical cases and the cost of the treatment was also reduced because of the saving of the money required for the hospital stay and the diet of the patients. The average difference between the procedure being performed as day case procedure and as an indoor procedure is Rs. 1500. Another advantage gained by performing the operation as day care procedure is that CMH Rawalpindi is a tertiary care hospital and the work load is very heavy so it is not possible to perform varicocelectomy in the main O.T. early. Out of the 50 patients 20 were those who were under going medical check up for induction in the Armed forces and were temporarily unfit because of the varicocele. These patients cannot wait for long appointments because the vacancies are available for a limited period. So these patients were benefited from day case varicocelectomy.

Table-1: Clinical presentation.

Symptoms	Total No.	%age
Visible deformity	30	60%
Heaviness/Dragging sensation	27	54%
Found during medical examination/ checkup	20	40%
Testicular pain	06	12%
Infertility	05	10%
Testicular atrophy	00	00%

Table-2: Age distribution.

Age group	No. of patients	%age
< 10	--	--
11 – 20	11	22
21 – 30	29	58
31 – 40	07	14
41 – 50	03	06
> 50	--	00

Table-3: Post operative physical activity.

	1st follow-up	2nd follow-up	3rd follow-up
Grade – 3	04	42	48
Grade – 2	33	06	00
Grade – 1	08	02	00
Grade – 0	00	00	00

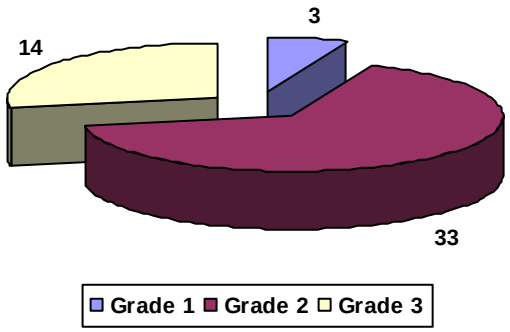

Fig : Grades at the time of presentation.

As far as the complications of the procedure is concerned only 8 (16%) patients developed complications. In the study of M. Testini the complication rate was 11.33%. Out of the 8 patients in our study only 2 (4%) patients had permanent complications while the other 6 improved with time.

There was no recurrence of the varicocele till the 3rd follow up in the patients but the time duration is not too long to comment on this aspect of our study.

CONCLUSION

Sub inguinal treatment of varicocele in out patient department is a safe procedure as evident by the results of our study and other literature. It is performed under local anaesthesia and in out patient department which makes the procedure cost effective. In addition, the post operative mobilization and return to work after sub inguinal low ligation is quite early as evident by our study which is helpful especially in serving soldiers that need early return to their jobs and physical activity.

REFERENCES

1. McMinn RMH. Abdomen. In; McMinn RMH, Ed. Last Anatomy. London: **Churchill living Stone 1990; 8: 305-7.**
2. Zorgniotti A, Macleod J. Studies in temperature, human sperm quality and varicocele. **Fertil Steril 1973; 24: 854-63.**
3. Howards SS. Infertility. **J Urol 1982; 128: 64-5.**
4. Saypol DC. Varicocele. **J Androl 1981; 2: 61-4.**
5. Rajfer J. Congenital anomalies of the testis and scrotum. In: Walsh PC, Retik AB, Stamey TA, Vaughan ED jr Eds. Cambells Urology. Philadelphia: W.B. **Sauders Company Editors 2000; 2186-87.**
6. Howards SS. Infertility. **J Urol 1982; 128: 64-5.**
7. McAninch JW. Disorders of testis, scrotum and spermatic cord. In: Tanagho EA, Mc Aninch JW, Eds. Smiths General Urology. London: **Prentice Hall 1995; 681-90.**
8. Lyon RP, Marshall S, Scott MP. Varicocele in childhood and adolescence: implications in adulthood infertility. **Urology 1982; 19: 641-44.**
9. Magdy R, Abdulmaaboud Ahmad A, Shokeir Yasser Farage, Ashraf Abd El-Rahman, Magdy M, Al-Rakhawy et al. treatment of varicocele: a comparative study of conventional open surgery, percutaneous retrograde sclerotherapy and laparoscopy. **Adult Urol 1998; 52: 294-300.**
10. Sayfan J, Soffer Y, Orda R. Varicocele treatment. Prospective randomized trial of 3 methods. **J Urol 1993; 149: 1361.**
11. Amelar RD, Dubin L. Right varicocelectomy in selected patients who have failed to improve after previous left varicocelectomy. **Fertil Steril 1987; 47: 833-7.**
12. Rozanski T, Bloom DA, Colodny A. Surgery of scrotum and testis in children. In: Walsh PC, Retik AB, Stamey TA, Vaughan ED jr, Eds. Cambells Urology. Philadelphia: W.B. **Sauders Company Editors 2000; 2204-05.**
13. Leiba A, Bar-dayan Y, Benedek P, Binyamini O, Madgar I, Weiss Y, et al. Management of varicocele in military obligatory service: Israel Defense Forces Medical Corps policy. **Mil Med 2001; 166: 1062-4.**
14. Chaudhary I A, Rehmani M A. Varicocelectomy: Paloma`s procedure Versus Ivanissevich`s procedure. **J Coll Phys Surg Pak 2000; 10: 334-7.**
15. Barbalias GA, Liatsikos EN, Nikiforidis G, Siablis D. Treatment of varicocele for male infertility. A comparative study evaluating currently used approaches. **Eur Urol 1998; 34: 393-8.**
16. Murray RR, Mitchell SE, Kadir S, Kaufmann S, Chang R, Kinnison ML et al. Comparison of recurrent varicocele anatomy following surgery and percutaneous balloon occlusion. **J Urol 1986; 135: 286-9.**
17. Gill IS, Kerbl K, Clayman RV. Laparoscopic surgery in urology. Current application. **Am J Roentgenol 1993; 160: 1167-70.**
18. Testini M, Miniello S, Piccinni G, Di Venere B, Lissidini G, Esposito E. Microsurgical treatment of varicocele in outpatients using the sub inguinal approach. **Minerva Chir 2001; 56: 655-9.**