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Original Research Article

Postoperative outcomes of varicocelectomy and impact of on infertility among sample of patient in Baghdad, Iraq

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ABSTRACT

Background: Varicocele is the possible cause of 35% primary infertility, 70-80 % secondary and it is associated with progressive and duration dependent decline in testicular function. The aim of this study was to assess the postoperative outcome of varicocelectomy and determine positive impact on ability to reduce infertility.
Methods: Twenty-five infertile male patients with varicocele, their age range from (20-40) year mean (30 year), were included and evaluated prospectively and retrospectively in Al-Karama teaching hospital from 2013-2016. Patients were divided in present study according to age of patient, degree of varicocele, duration of infertility and type of infertility. Site of varicocele was either left unilateral or bilateral. All the patients were treated surgically using three different approaches; Retroperitoneal approach, Inguinal and Sub inguinal approach and Scrotal approach.
Results: It is noticeable that scrotal swelling was the most frequent complication and infection was the second highest. According to the age of patient, it was shown that beneficial effect of the Varicocelectomy was most favourable among younger age group. It is observables that favourable outcome was better among those with secondary fertility. It was found that grade III varicocele was associated with better outcome in terms of pregnancy and sperms motility.
Conclusions: Scrotal swelling and infection was the most highly reported complication. Favourable effect of the Varicocelectomy was most among younger age group, secondary fertility and grade III varicocele.

Keywords: Baghdad, Infertility, Postoperative, Varicocelectomy

INTRODUCTION

Infertility is defined as the inability of a couple to achieve pregnancy within marital period of time, usually one year.[1] On the other hand, primary infertility indicates that at least one conception had occurred, but that couple is currently not able to achieve pregnancy.[2] Assessment of infertile patient includes history taking clinical examination and investigations. Seminal fluid analysis is the corner stone of infertility assessment, but it should be noted that the result vary from sample to sample and it is therefore wise to test three samples at interval 3-6 week in one dependable lab.[3]

Among the commonest causes of male infertility is varicocele, which could be presented in different age group.[4] Varicoceleis abnormal tortuously and dilatation of testicular veins within spermatic cord. Approximately 90% left side, and 10% is bilateral.[5]

Left sided varicocele is found in 15% of healthy young men and in 15% of general population varicocele is the possible cause of 35% primary infertility, 70-80% secondary and it is associated with progressive and duration dependent decline in testicular function.[6]

The effect of varicocele on testicular function includes the following: (1) Increase intra testicular temperature by about 0.78 C higher normal level which is about 0.5-1 C below body temperature. (2) Decrease blood flow and hypoxia. (3) Decrease testosterone hormone secretion due to hypoxia. Among the few causes of infertility it was reported that Infertility in varicocele patients may be due to spermatogenesis defect because of above mentioned effects and possibly to a decrease in the frequency of coitus as a result of decrease in potency and sexual desire due to decrease in testosterone hormone secretion. It was also reported that Ipsilateral testicular growth is impaired in adolescent with varicocele leading to testicular atrophy in un treated patients.

There is on spontaneous regression of varicocele, that's why the only treatment for those who need treatment is surgery.[7]

The management of varicocele is surgical ligation of dilated testicular veins. Presence of varicocele alone is not an indication for surgery. Presence of clinically detectable varicocele with abnormal semen analysis is appropriate indication for surgery after female partner has been evaluated. Improvement has been demonstrated in motility, density and morphology after varicocele repair.[8]

Surgical treatment of varicocele could be done by different approaches, Laparoscopic approach. Retroperitoneal approach (Palomo), inguinal approach, sub-inguinal approach, scrotal approach, percutaneous embolization.[9]

The aim of this study was to assess the postoperative outcome of varicocelectomy and determine positive impact on ability to reduce infertility.

METHODS

This was a cross sectional study designed which involved twenty-five infertile male patients with varicocele, their age ranges from (20-40) year mean (30 year), were included and evaluated prospectively. Patient were selected and evaluated according to the flowing criteria.

The patient was categorized into three age groups which are (a) 20 - 25 year, (b) 26 -33 year and (c) 34 -40 year.

Type of infertility included primary infertility or secondary infertility. Grade of varicocele depend on physical examination and doppler ultrasound finding under grade II and Grads III. All the cases were done as a day case or maximum one day stay in hospital under general anesthesia.

Since spermatogenesis cycle need 74 days, the first seminal fluid analysis done 3 months after surgery in addition to doppler ultrasound and repeated 6 months, 12 months later on. Mena sperm count was measured before and after surgery along with sperm motility. Rate of pregnancy was recorded as long-term outcome.

RESULTS

The distribution of early and late surgical complication classified by the type of surgical approach is presented below. It is noticeable that scrotal swelling was the most frequent complication (12%) and infection was the second highest (8%) (Table 1).

Table 1: Surgical complication of varicocelectomy.

Complication		No. of patients	% of patients	Type of approach
Early	Scrotal hematoma	1	4%	Scrotal
	Scrotal swelling	3	12%	Sub inguinal
	Infected wound	2	8%	Inguinal
Late	Chronic orchalgia	1	4%	Sub inguinal
	Secondary hydrocele	2	8%	Inguinal
	Recurrent varicocele	2	8%	Palomo
	Testicular atrophy	1	4%	Scrotal

According to the age of patient, it was shown that beneficial effect of the varicocelectomy was most favorable among younger age group (Table 2).

Table 2: Results of varicocelectomy according to the ages of the patients.

Ages (years)	Results	No. of patients	% of patients
20-25	Pregnancy	3	12%
	Motility and count	8	32%
26-33	Pregnancy	0	0%
	Motility and count	2	8%
34-40	Pregnancy	1	4%
	Motility and count	3	12%

Table 3: Results of varicocelectomy according to the types of infertility.

Type of infertility	Results	No. of Patients	% of patients
Primary (10 patients)	Pregnancy	0	0%
	Motility and count	4	16%
Secondary (15 patients)	Pregnancy	4	16%
	Motility and count	9	36%

The frequency of favorable surgery outcome in terms of sperm count and motility and pregnancy were presented in the table below. It is observables that favorable outcome was better among those with secondary fertility (Table 3).

Table 4 indicated that grade III varicocele was associated with better outcome in terms of pregnancy and sperms motility.

Table 4: Results of varicocelectomy according to grades of varicocele.

Grades of varicocele	Results	No. of Patients	% of patients
Grade II (15 patients)	Pregnancy	1	4%
	Motility and count	6	24%
Grade III (10 patients)	Pregnancy	3	12%
	Motility and count	7	28%

DISCUSSION

In the present study author examined the natural course of infertile men with varicocele. Varicocelectomy was associated with a significant improvement in semen variables (sperm concentration and motility) and a higher natural pregnancy rate than observation alone.

Several studies have assessed the effect of varicocelectomy in men with oligospermia. Overall, the results of these studies suggest that there is a significant improvement in semen variables after varicocele repair, much in keeping with the results of the present study.[10-12] There is also evidence to suggest that these positive changes in semen variables might translate into an improvement in male fertility potential, although in most studies it is difficult to evaluate the true improvement in pregnancy rates because a control group was not included.[13,14] In the current study, varicocelectomy was associated with a natural pregnancy rate of 16%, a result in keeping with that of published studies of varicocelectomy.

There is ongoing debate about the effect of bilateral vs unilateral varicocele repair on the outcome of surgery. Fujisawa et al.[15] compared the improvement in semen variables after microsurgical repair of unilateral and bilateral varicoceles and found the improvement comparable between the groups. By contrast, Libman et al, reported that men who had bilateral varicocelectomy (for bilateral varicoceles) had a significantly greater improvement in sperm motility and natural pregnancy rates than men who had unilateral varicocelectomy (for unilateral varicocele), suggesting a dose effect of varicocele on male fertility potential.[16] Further evidence in keeping with this dose effect concept was presented by Scherr and Goldstein.[17] who compared infertile men with bilateral varicoceles (grade II or III left and grade I right) who had left or bilateral.

Varicoceles do not spontaneously regress, that's why surgery is the only treatment but the absolute indication for surgery was seminal fluid another indication in some cases in patients with varicocele like pain in present study approaches used (scrotal, palomo, inguinal, sub inguinal) of which the benefits are short anesthesia, Short time procedure, rapid convalescence and Less complications and cost effective with faster return back to work.

CONCLUSION

The most common postoperative complications are hydrocele formation, varicocele recurrence, and testicular atrophy (due to injury to testicular artery). Best results of varicocele repair were achieved in bilateral repair and by the inguinal approach. Favorable effect of the Varicocelectomy was most among younger age group, secondary fertility.

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REFERENCES

1. Dohle G, Colpi G, Hargreave T, Papp G, Jungwirth A, Weidner W, et al. EAU guidelines on male infertility. Euro Urol. 2005;48(5):703-11
2. Ronaldoll B, Gwendolyn MJ. Infertility. In: surgical secrets. Al-den H. Ernest HE, Moor's, Honley and Belfus Ine. Philadelphia; 2000;4:301 .
3. Stoller M, Bolton D, Tanagho E, McAninch J. Smith's general urology. 18th Ed. Ohio, USA: McGraw-Hill Medical; 2004.
4. Aafjes JH, van der Vijver JC. Fertility of men with and without a varicocele. Fertility and sterility. 1985;43(6):901-4.
5. Cockett AT, Urry RL, Dougherty KA. The Varicocele and semen characteristic. J Urol. 1979;121:435-6.
6. Gorelick JI, Goldstein M. Loss of fertility in men with Varicocele. Fertil steril. 1993;59:613-6.
7. Yoshida K, Kitahara S, Chiba K. Predictive of successful varicocele repair in men with infertility. Int J Fertil Womens Med. 2000;45(4):279-84.
8. Hirsch IH, Abdel-Meguid TA, Gomella LG. Postsurgical outcomes assessment following varicocele ligation: laproscopic versus subinguinal approach. Urol. 1998;51(5):810-5.
9. Lukkarinen O, Hellstrom P, Leinonen S. Juntunen K. Is varicocele treatment useful?. Ann Chir Gynaecol. 1997;86(1):40-4.
10. Okeke L, Ikuerowo O, Chiekwe I, Etukakpan B, Shittu O, OlapadeOlaopa O. Is varicocelectomy indicated in subfertile men with clinical varicoceles

who have asthenospermia or teratospermia and normal sperm density? Int J Urol. 2007;14:729-32.
11. Ishikawa T, Kondo Y, Yamaguchi K, Sakamoto Y, Fujisawa M. Effect of varicocelectomy on patients with unobstructive azoospermia and severe oligospermia. BJU Int. 2008;101:216-811.
12. Poulakis V, Ferakis N, de Vries R, Witzsch U, Becht E. Induction of spermatogenesis in men with azoospermia or severe oligoteratoasthenospermia after antegrade internal spermatic vein sclerotherapy for the treatment of varicocele. Asian J Androl. 2006;8:613-9.
13. Madgar I, Weissenberg R, Lunenfeld B, Karasik A, Goldwasser B. Controlled trial of high spermatic vein ligation for varicocele in infertile men. Fertil Steril. 1995;63:120-4.
14. Gat Y, Bachar GN, Everaert K, Levinger U, Gornish M. Induction of spermatogenesis in azoospermic men after internal spermatic vein embolization for the treatment of varicocele. Hum Reprod. 2005;20:1013-7.
15. Fujisawa M, Ishikawa T, Takenaka A. The efficacy of bilateral varicocelectomy in patients with palpable bilateral varicoceles: comparative study with unilateral varicocele. Urol Res. 2003;31:407-9.
16. Libman J, Jarvi K, Lo K, Zini A. Beneficial effect of microsurgical varicocelectomy is superior for men with bilateral versus unilateral repair. J Urol. 2006;176:260.
17. Scherr D, Goldstein M. Comparison of bilateral versus unilateral varicocelectomy in men with palpable bilateral varicoceles. J Urol. 1999;162:85-8.

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