

Relation between Grade of Varicocele and Improvement in Semen Parameter after Microvaricocelectomy

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ABSTRACT

Aim: To compare the preoperative and postoperative seminal parameters (count and motility) after varicocelectomy among patients of male infertility.

Methods: Total 83 patients underwent sub-inguinal microsurgical varicocelectomy from January 2010 to December 2015 were included in the study. Patients were studied for the following parameter age, degree of varicocele (GI, GII, GIII), sperm count, sperm motility (excellent, good, poor), complications (hematoma, infection, pain, testicular atrophy), Hospital stay, grade of motility and sperm count in percentage.

Results: Mean age of patients was 32.7 ± 3.8 years. Number of patients according to grades of varicocele were 19 (G1), 29 (G2) and 35 G3. Preoperative mean sperm count was 7.2 ± 1.6 while preoperative sperm motility was less than 20% in excellent and good category. Postoperatively at three months the sperm count improved as 47.3% (GI), 55.1% (G2) and 74% (GIII). Motility improved after operation as 1.7, 1.9 and 2 fold in GI, G2 G3 respectively. Hospital stay was less than 12 hours. One patient had a Haematoma and one reoperated for missed vein.

Conclusion: Microvaricocelectomy is safe operation with low complication rate that can be done as day care with reasonably good results in terms of improved sperm counts and motility in patients of infertility having oligoasthenospermia.

Keywords: Microvaricocelectomy, Infertility, Sperm count, Sperm motility, oligoasthenospermia.

INTRODUCTION

Varicocele means pooling of blood in scrotum and rise of testicular temperature and reflux of blood that has adverse effect on sperm production and testosterone function. Aproximately 33% of infertile males have varicocele prevalence, where as in general population it is 15%¹. It is graded as G1 if it is palpable on valsalva maneuver, G2 if papable without Valsalva maneuver and G3 if it is visible on standing as given in Figure 1. Role of varicocele repair and its effect on fertility is controversial^{2,3} particularly for small varicoceles. Studies have shown greater benefit of semen quality after repair of large varicocele^{4,5}. We have studied the effect of microvaricocelectomy on improvement in sperm count and motility and compared this improvement in different grades of varicocele. This technique was studied because microvaricocelectomy is now the standard operation. Use of microscope and operative vascular doppler have made this operation extremely safer.

SUBJECTS AND METHODS

Total 83 patients included in the study having unilateral left sided varicocele. All were married and

having normal sized testis and normal FSH level. All admitted through infertility clinic of Lateef Hospital, Main Boulevard, Johar Town, Lahore. We used 2 cm subinguinal incision over superficial inguinal ring⁶. Spermatic Cord was delivered and external spermatic veins and gubernacular veins were ligated and divided (running parallel to spermatic cord & with the help of vascular doppler (8 MHz) and microscope 8-15 power, testicular artery /arteries identified along with vas deference and its vessels and lymphatic channels. Postoperative testicular venous drainage is via vasal veins which drain in internal pudendal system. Parameters of study were age, degree of varicocele (GI, GII, GIII), sperm count, sperm motility (excellent, good, poor), complications (hematoma, infection, pain, testicular atrophy), Hospital stay, grade of motility and sperm count in percentage. Varicocele was graded according to the following system of grading.

Subclinical: varicocele not detected on physical examination and found on radiological or other imaging studies

Grade I: palpable on physical examination during valsalva

Grade II: Palpable on routine physical examination without Valsalva maneuver.

Grade III: Visible on eye and palpable on examination

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RESULTS

Mean age of our patients was 32.7 ± 3.8 years. Number of patients according to grades of varicocele were 19 (G1), 29 (G2) and 35 G3. Preoperative mean sperm count was 7.2 ± 1.6 while preoperative sperm motility was less than 20% in excellent and good category. Postoperatively at three months the sperm count improved as 47.3% (G1), 55.1% (G2) and 74% (G3). Motility improved after operation as 1.7, 1.9 and 2 fold in G1, G2 G3 respectively. Hospital stay was less than 12 hours. One patient had a Haematoma and one was reoperated for missed vein. No other complication was seen in our patients.

DISCUSSION

Role of varicolectomy has been controversial for the treatment of male infertility. One group said that there is no benefit on semen quality after surgery of varicocele. While some studies revealed that infertile men and men of the general population with or without varicocele do not present any significant difference regarding the semen parameters⁷. On the other hand, a large scale study by the WHO showed significantly lower sperm concentration in infertile men with varicocele, compared to men with idiopathic infertility, but did not give any evidence regarding motility and morphology of the sperm^{8,9,10,11}. In our study we have found that microvaricolectomy is associated with improvement in the sperm count. There is also improvement in the motility of the sperms. These improvements have shown different results with different grades of varicocele. We have followed our patients for three months only. If they had been followed for longer period of time the results would have been better as the improvement continues for a longer time. The results of previous studies may differ because at that time the current technique of microvaricolectomy was not used.

CONCLUSION

Microvaricolectomy is safe operation with low complication rate that can be done as day care with reasonably good results in terms of improved sperm

counts and motility in patients of infertility having oligoasthenospermia.

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