

THE VALUE OF VARICOCELE LIGATION IN THE TREATMENT OF OLIGOZOOSPERMIC INFERTILITY

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SUMMARY

A study of 143 cases with oligozoospermia is presented. 44 (28.67%) had a varicocele. The excision of varicocele led to improvement in seminal parameters in almost 94% patients and led to a pregnancy rate of 33%. Varicocelectomy is useful operation to offer to male partners having impaired fertility and a demonstrable varicocele.

INTRODUCTION

Despite the progress made in the field of infertility, male infertility presents a gloomy picture. Though much work still remains to be done, a few paths are well chalked out and experimented with success. Surgical excision of varicocele is one amongst these few. This paper elucidates our experience with oligozoospermic male partners of infertile couples. The outcome, both in terms of improvement of the parameters and pregnancies achieved is discussed. The surgical approach to this problem certainly appears promising.

MATERIALS AND METHODS

Since Jan. 1984, all couples seeking advice for the problem of infertility were jointly managed by a gynaecologist and a urologist to offer optimum investigational and therapeutic options to the couple. 434 couples were interviewed. 388 of these attended the clinic for over 6 months permitting complete investigations and evaluation of the therapeutic measures adopted.

All the couples were interviewed together at the first visit. Both the partners were submitted to complete physical examination and appointments were made for routine infertility investigations.

Male partners were examined in the standing position and a visible or palpable varicocele with an impulse on coughing was looked for. Patients having varicocele and persistent oligozoospermia were advised surgery for the excision of varicocele. The retroperitoneal approach was used in all our patients. Repeat physical and semen examinations were done.

RESULTS

143 out of 388 male partners were found to have subnormal semen parameters. Out of these 143 cases, 41 cases (28.67%) were found to have a significant varicocele. These patients were advised ligation of the varicocele, out of whom 33 patients actually underwent the varicocele excision operation and were available for follow-up. The following table shows the occurrence of varicocele.

TABLE 1

OCCURRENCE OF VARICOCELE

	No.	Percentage
Left Varix	31	93.94
Right Varix	1	3.03
Bilateral Varix	1	3.03
Total	33	100

Varicolectomy was done unilaterally in 32 cases and bilaterally in one case. The semen parameters were repeated at least three months after the operation and compared with the preoperative findings. These parameters showed a remarkable improvement.

1. Sperm Count - The following table shows count alteration after the correction of the varicocele. In keeping with Macleod's work, a cut off value of 20 Million/ml was used for defining normalcy.

TABLE 2
SPERM COUNT BEFORE AND
AFTERSURGERY(improvedcases)

	Sperm count in millions / ml.					
	0-5	6-10	11-20	21-40	41-60	60
Before Ligation	14	5	12	-	-	-
	100%			0%		
After Ligation	3	4	8	10	5	1
	48.39%			51.61%		

The above table shows that whereas all the patients had a sperm count below 20 million/ml. prior to surgery. This percentage was reduced to 48.39% following surgery. Surgery thus achieved the restoration of normalcy of the sperm counts of 51.61% of subjects.

2. Sperm Motility - The details of improvement in motility in semen samples is shown in table -3.

TABLE 3
SPERM MOTILITY BEFORE AND
AFTERSURGERY(improvedcases)

	Motility %				
	0-19	20-39	40-59	60-79	80 & over
Before ligation	15	14	2	-	-
	93.55%		6.45%		
After ligation	3	9	16	3	-
	38.71%		61.29%		

The above table clearly shows the remarkable improvement in sperm motility achieved in subjects submitted to surgical correction of varicocele. Whereas only 6.45% of patients had a sperm motility exceeding 40% prior to surgery, this improved almost ten fold following the surgical procedure.

3. Improvement in seminal parameters - The improvement in spermograms before and after surgery was judged on the basis of three parameters. The average sperm count, the average sperm motility and the occurrence of abnormal forms.

Table 4 shows the comparison of these parameters before and after surgery.

TABLE 4
COMPARISON OF THE AVERAGE SEMEN PARAMETERS BEFORE AND AFTER SURGERY

	Average count Millions/ml	Average motility %	Average abnormal forms %
Before ligation	10.82	17.89%	31.20%
After ligation	25.20	36.97%	21.60%

The above table clearly establishes the need for diagnosis and surgical correction of varicocele to improve male subfertility resulting from this cause.

4. Final outlook following surgery- In the final analysis of this important modality, its ability to improve semen quality and lead to resulting pregnancies stands out as the

final test by which the application of this surgical procedure would stand justification. In the following table these parameters have been analysed.

TABLE 5
IMPROVEMENT IN SPERM QUALITY AND PREGNANCY RATE FOLLOWING SURGERY

	No.	Percentage
Improvement in semen quality	31	93.94%
Pregnancies	11	33.33%

DISCUSSION

We found the incidence of varicocele in men whose fertility was impaired, to be 28.67%. This is very significant because it means that these men could be helped. Dubin & Amelar reported this incidence to be 30-40%. Recently there has been a confusion over the incidence of varicocele in infertile men, and the value of varicocele ligation in enhancing fertility. Nilsson et al and Rodriguez-Rigau et al could find no difference in the incidence of varicocele in men with normal and abnormal semen analysis. However the original patient described by Tulloch clearly demonstrated an operation on the varicocele was undoubtedly responsible for improvement in semen analysis of a man with azoospermia and infertility. Several workers have reiterated this fact which is shown in the following table.

TABLE 6
CORRABORATIVE EVIDENCE FROM LITERATURE

Authors	Year	No. of Patients	% Improved	% pregn.
1. Scott & Young	1962	166	70%	Not reported
2. Brown Macleod & Hotchkiss	1968	185	55 - 60%	43%
3. Dubin & Amelar	1977	986	70%	53%
4. Greenberg Leipshultz & Wein	1977	425	63%	Not reported
5. Rajan et al	1978	29	62%	34%
6. Present Study	1989	33	94%	33%

We, using our own cases preoperatively as controls have had a 94% improvement with a modest pregnancy rate of 33%. This rate could be more if some more time is given for follow-up Hence the operation of varicocele excision has a definite place in the therapeutic armamentarium of the reproductive surgeon of today. It is at least one ray of hope in the otherwise depressing field of treatment of male infertility.

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