

LEFT SPERMATIC VEIN LIGATION IN INFERTILE PATIENTS WITHOUT VARICOCELE*

Çelik Taşar MD**, Atıf Akdaş MD**, Ziya Kırkalı MD***

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The effect of varicocele on male infertility is a well established entity. However, the mechanism of this cause is still controversial¹. It has been claimed that the testicular venous circulation of infertile males without varicocele, effects the spermatogenesis to a great extent². Left spermatic vein ligation of infertile males with no specific cause for infertility, prevents the inhibition of spermatogenesis by toxic products from the kidneys and adrenals.

In the Hacettepe University Department of Urology we performed left spermatic vein ligation on some infertile males without varicocele and followed them up. We herein present our results.

Material and Methods

One thousand infertile males (625 azoospermic and 375 oligozoospermic patients) were seen between May 1974 and May 1984 in the Department of Urology of Hacettepe University Hospitals. A routine physical examination of these patients was carried out and a Valsalva maneuver was used to ascertain whether there was a varicocele. Left spermatic vein ligation was performed on 154 patients (15.4%) who did not have a varicocele. Of these one hundred and two were azoospermic (66.2%) and 52 were (33.8%) oligozoospermic.

The results of the semen analysis of the oligozoospermic infertile males after an abstinence from intercourse for 2 or 3 days, are shown in Table I. Patients with abnormal hormonal levels were excluded from the study and left spermatic vein ligation was performed only on patients with normal hormonal levels.

Left spermatic vein ligation was performed according to the technique described by Ivanissevich³

* From the Department of Urology, Hacettepe University Faculty of Medicine, Ankara.

** Associate Professor of Urology, Hacettepe University Faculty of Medicine.

*** Research Assistant in Urology, Hacettepe University Faculty of Medicine.

TABLE I
The Results of Semen Analysis from Oligozoospermic
Infertile Males without a Varicocele

<u>Semen analysis</u>	<u>Number of patients</u>	<u>%</u>
Count $< 20 \times 10^6$ Motility $< 50\%$	28	53.8
Count $\leq 20 \times 10^6$ Motility $\geq 50\%$	14	27.0
Count $20 - 40 \times 10^6$ Motility $< 50\%$	4	7.7
Count $20 - 40 \times 10^6$ Motility $\geq 50\%$	4	7.7
Count $> 40 \times 10^6$ Motility $\geq 50\%$	2	3.8
Total	52	100.0

TABLE II
The Results of Semen Analysis of Oligozoospermic Patients
Before and After Left Spermatic Vein Ligation

<u>Semen analysis</u>	<u>Pretreatment number of patients</u>	<u>%</u>	<u>Posttreatment number of patients</u>	<u>%</u>
Count $< 20 \times 10^6$ Motility $< 50\%$	28	53.8	10	19.2
Count $< 20 \times 10^6$ Motility $> 50\%$	14	27.0	11	21.1
Count $20 - 40 \times 10^6$ Motility $< 50\%$	4	7.7	14	27.0
Count $20 - 40 \times 10^6$ Motility $> 50\%$	4	7.7	14	27.0
Count $> 40 \times 10^6$ Motility $> 50\%$	2	3.8	3	5.7
Total	52	100.0	52	100.0

Incisional testicular biopsies were performed on azoospermic males only and patients with post-testicular obstruction were excluded from this study.

Results

The results of the semen analysis of the oligozoospermic infertile males without a varicocele, both before and after left spermatic vein ligation, are presented in Table II.

There were ten patients (19.2%) with sperm counts of more than $20 \times 10^6/\text{ml}$ before left spermatic vein ligation, and 31 (59.7%) after this procedure, thus there was an increase of 40.5% in this group of patients.

Improvement in semen quality was recorded in 13 (12%) of the azoospermic patients after the ligation of the left spermatic vein (Table III). The testicular biopsies of azoospermic patients who became oligozoospermic after the operation showed pathological conditions as: a decrease in spermatogenesis, germinal cell aplasia in one testis and a decrease in spermatogenesis in the other and spermatogenetic arrest (Table IV).

TABLE III
The Results of Semen Analysis from Azoospermic Patients
Without a Varicocele Before and After Left Spermatic Vein Ligation

<u>Semen analysis</u>	<u>Pretreatment number of patients</u>	<u>%</u>	<u>Posttreatment number of patients</u>	<u>%</u>
Count $< 20 \times 10^6$ Motility $< 50\%$	—	0	4	3.9
Count $\leq 20 \times 10^6$ Motility $\geq 50\%$	—	0	3	2.9
Count $20 - 40 \times 10^6$ Motility $< 50\%$	—	0	1	0.9
Count $20 - 40 \times 10^6$ Motility $\geq 50\%$	—	0	5	4.9
Count $> 40 \times 10^6$ Motility $\geq 50\%$	—	0	0	0.0
Azoospermia	102	100	89	87.4
Total	102	100	102	100.0

TABLE IV

The Results of Testicular Biopsies of Azoospermic Patients who became Oligozoospermic After the Ligation of the Left Spermatic Vein

<u>Pathology</u>	<u>No. of patients</u>
Decrease in spermatogenesis	7
Spermatogenetic arrest (level of spermatocyte I)	4
Germinal cell aplasia (in a single testis)	2
Total	13

Discussion

It is accepted that left spermatic vein ligation in infertile males without a varicocele may cause improvement in sperm counts and motility. The diagnosis of varicocele was made by physical examination with Valsalva maneuver. In addition to this, thermographic methods or a Doppler stethoscope may be used to establish this diagnosis^{4,5}. An undetected varicocele may be a factor influencing fertility; but even so we believe that the ligation of the left spermatic vein can of itself play a role in the treatment.

Some authors believe in the necessity of selective left spermatic venography in combination with IVU for the detection of varicocele⁶.

The pregnancy rate after the surgical treatment of varicocele is reported to be 25% as opposed to 12% when there is no treatment⁷. In the present study, the pregnancy rate among infertile patients without varicocele was 11.5% after left spermatic vein ligation.

As a conclusion, we believe that left spermatic vein ligation in patients with normal hormonal levels and without varicocele, improves the semen quality.

Summary

One thousand infertile patients (625 azoospermic, 325 oligozoospermic) were seen in the Department between 1974 and 1984. Of these, one hundred and fifty-four (15.4%) who, on physical examination were found to have normal hormonal levels and no varicocele, were treated with left spermatic vein ligation. One hundred and two of these were azoospermic and 52 oligozoospermic.

An increase of 40.5% in sperm motility and count was determined in oligoasthenospermic patients after left spermatic vein ligation. Similarly, 13 patients (12%) in the azoospermic group showed increased semen quality.

A pregnancy rate of 11.5% was noted, after this procedure, in connection with patients with oligoasthenospermic counts.

In conclusion, it was found that left spermatic vein ligation in oligoasthenospermic patients with normal hormonal levels and without varicocele, increases the semen quality.

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QUESTION AND COMMENT

Hargreave: Are you continuing to do this?

Akdaş: Yes, but only for the oligoasthenospermic patients.

Hargreave: May I suggest that you randomize, between one group of patients that has this treatment and one group of patients that does not, using exactly the same criteria; if you had done this and come up with the same improvement in the treated group compared with the non-treated group, you could have made a tremendous contribution; unfortunately, I'm going to discount much of what you said because it wouldn't really stand up yet, although if you asked me to really sort of give my bottom line, I think varicocele of ligation does work sometimes but I don't think anybody's proved it yet; now I think the challenge that has been thrown by Professor Blandy and Doctor Wilson was that we've got to go back to the drawing board and really prove this. But if you were able to mount that study with a control group and randomize, then I think you've got a very important study.