The Improvement in Seminal Parameters After Varicocele Surgery Repair

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ABSTRACT

Background: varicocele is the main cause of male infertility. Occurs as a result of the presence of sperm dilated veins that determin``e a hostile environment for the process of spermatogenesis.

Objective: to evaluate the improvement of seminal parameters after surgery of varicocele.

Material and Methods: during a period of 10 years, were analyzed retrospectively, 232 patients aed 18 to 37 years old, diagnosed with varicocele and seminal changes varied. All patients underwent surgery with bilateral access.

Results: it was observed general improvement of the seminal parameters (concentration, motility and morphology) to 150 of patients operated (64.65%).

Conclusion: the procedure of varicocelectomy should be offered to patients with the clinical diagnosis of varicocele and seminal change.

INFORMAÇÕES

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INTRODUCTION

The varicocele is one of the main causes of male infertility. The presence of scrotal varicose veins can explain changes in patterns of semen. These pathology is found in about 15% of the male population and in 40% of infertile men. The varicocelectomy surgery is a safe procedure with reasonable success rates and should not be thrown in the treatment of male infertility.

OBJECTIVE

The aim of this study is to evaluate the improvement of seminal parameters after surgical procedure of correction of varicocele disease in these patients .

MATERIAL AND METHODS

We evaluated 232 patients aged between 18 and 37 years, between 2004 and 2014. These patients were undergone to surgery, presented the diagnosis of varicocele detected during physical examination and all underwent ultrasound examination with or without Doppler. The patients that presented 02 analysis spermogram tests changed, with minimum interval of 60 days. The changes found in the sperm count tests were related to low concentration, changes in morphology and motility of sperm. Was regarded as unusual: lower sperm concentration equal to 20 million/ml sperm motility, less than 40% and progression of less than 30%, of the total amount of sperm. About the morphology, the oval less than 30 percentage% of the total, was also factor of inclusion. The tests were

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standardized in accordance with local laboratory, where he was held for you to collect. The withdrawal period between 3 to 5 days ejaculatory. Was not assessed in this study changes of DNA fragmentation of sperm. (Table 1) All patients in the study underwent surgery for correction of varicocele, with bilateral access, even the clinical diagnosis or complement pointed only unilateral disease. The technique used was a micro surgery, with optical magnification, being the surgical access under bilateral inguinal and epidural anesthetic block. The patients were discharge 8 hours after the procedure. The professional activities return in 14 days. All patients signed the informed consent form. The ethical and legal principles were followed according Helsinki Declaration. Patients were instructed to return with new tests of spermogram, with 60, 90 and 180 days. Patients who did not return with the examinations were excluded from the final analysis.

TABLE 1 - Normal seminal patterns (WHO)

Concentration of sperm /ml	above 20 millions/ml
Motility (móbile/progressives)	above 40% e 30%
Morfology (oval forms)	above de 30%

RESULTS

From a total of 232 patients undergone in a surgery of varicocele, the general improvement of the seminal patterns (concentration, motility and morphology) was observed in 150 (64.65%) of the 232 patients. Among these patients, 188 232 (81.03%) improved only total concentration and per ml of sperm. In 148 patients (63.79%) only motility and improved progression. What about the morphology .122 (52.58%) patients showed improvement. In 119 patients (51.29%) presented both improves the concentration as motility concurrently. (Table: 2)

TABLE 2 - Improvement of seminal parameters after surgery (n=232)

	Pts.	%
Concentration of sperm	188	81,03%
Morfology of sperm	122	52,58%
Motility of sperm	148	63,79%
Concentration & Motility	119	51,29%
All parameters (C/M/M)	150	64,65%

Notes: The concentration and motility sperm are the patterns that better respond to varicocelectomy repair.

DISCUSSION

The varicocele disease is the leading cause of infertility in man.[1,2,3,4,10,12] is observed in healthy male population around 15%.[1,2,3,4] The diagnosis of varicocele is performed during physical exam with the patient examined in orthostatic position, in a room with regular ambient temperature. The ultra sound examination serves as a complementary diagnostic method; and when available, the Doppler presents better results in comparison to conventional ultrasound.[4, 5, 6, 7, 8, 9] The varicocele is a condition of the veins, which in valvular insufficiency sperm doesn't drain efficiently venous blood from the testicles. This venous blood, dammed in the scrotal region determines increase of testicular temperature, buildup of CO2 and free radicals. In this unfavorable environment develops cellular changes as: atrophy, thickening and fibrosis of the germ cells.

Histologically, changes are observed as: fibrosis of Sertoli cells and Leydig cells, which are responsible for the production of sperm and testosterone hormone, respectively. Over time, this situation causes testicular volume change ' shift ' in germination, structure with decrease or stop of the spermatogenesis process.[1, 2, 3, 4,10, 11,12] It is most commonly diagnosed varicocele in spermatic left veins. This is due to the difficulty of the venous flow between the left spermatic vein and the left renal vein, which drains the venous flow, forming an angle of 90 degrees. The varicocele right is found to a lesser proportion in relation to the left, is on the right side the spermatic vein makes your flow in 45 degree angle directly into the inferior vena cava. Some works report the presence of bilateral varicocele in greater frequency and postulate the initial surgical treatment, with bilateral access, as a result of communicating veins to improve of seminal parameters and relief of scrotal pain.[13,14] The surgical procedure, varicocelectomy, is based on improvement of testicular blood perfusion and improves venous blood drainage. In this study, the recovery of the seminal patterns was observed in approximately 64% of operated patients with bilateral access. (Table 2) In literature, the seminal improves patterns are around 70%. [1,2,3,4] It is important to discuss here the concept of therapeutic success. The surgical repair is indicated even in young people not worried to get pregnancy at this moment but to preserve or regain fertility. And it is to infertile men aims in achieving a pregnancy. We should keep in mind that varicocele is a progressive disease, not correction can lead to future infertility. [1,2,3,4] In this study, among patients operated there is patients who seek the pregnancy, patients who presented with increase scrotal volume or not, patients with testicular volume reduction, associated with alters seminal values.

Important report that until recently surgery to correct varicocele was indicated only to improve concentration, morphology and sperm motility. Nowadays we know that the correction of venous reflux, decreases the sperm DNA fragmentation, improving fertilization rates even assisted, by any artificial insemination techniques employed: IVF, ICSI. What can reduce the complexity of the methods employed, the number of attempts and the final cost of the artificial fertilization process.[4,10,11,12]

CONCLUSION

Therefore, surgery to correct varicocele disease is still of great importance to the preservation and restoration of male fertility. The procedure proved effective in about 65% of the patients in this group studied. The diagnosis of varicocele disease is not imperative for surgical treatment, if there is no seminal changing but these patients should be in watchful waiting situation. However, in patients with alter seminal patterns (concentration, morphology and motility), or testicular volume reduction, the procedure should always be offered.

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