Bilateral Microsurgical Varicocelectomy (BMV) and Assisted Reproductive Technologies (ART) in Infertile Men with Bilateral Varicocele

Introduction and Objectives: To evaluate the efficacy of microsurgical inguinal varicocelectomy (MIV) in patients with bilateral varicocele (BV). By means of bilateral testicular biopsy (BTB) we have investigated the spermatogenesis failure in several biological groups men and determined whether it can change patient candidacy for assisted reproductive technology procedures (ART).
Material and Methods: From 2003 until 2011, 223 patients with BV were consulted for primary or secondary sterility. Our study included 201 patients with clinical palpable and infraclinical -ultrasonic doppler scanning BV who underwent MBV with BTB. Mean patient age was 32,6 .On the basis of the total motile sperm count values 201 patients were divided into 5 biological groups: 1) Azoospermia - 70 patients (34,8%); 2) Oligospermia severe (0,1-5 x 10 6 / cc) 38 patients (18,9%); 3) Oligospermia moderate (5,1 - 10 x 10 6/cc) - 51 patients (25,3%); 4) Oligospermia relative (10,1 -20 x 10 6 / cc) - 25 patients (12,4%); 5) Normospermia (> 20 x 10 6 /cc) - 17 patients (8,5%). The sperm quality, the spermogram was studied 6, 12 and 18 month after the operation. On basis of BTB we defined the following spermatogenesis groups. Normal spermatogenesis (NS) - 7 cases, hypospermatogenesis (HS) -149 cases, maturation arrest (MA) early arrest - 8, late arrest - 17, Sertoli Cell Only syndrome (SCOS) - 16, Tubular and Per tubular sclerosis - 4. .
Results: Postoperative sperm concentration increased significantly compared to before the one varicocelectomy. Of 201 patients, in 104 (51,7%) the spermogram improved, in 42 (20%) the spermogram worsened. The spermogram was not changed in 55 (27,4%). ART for which they qualified - Intracytoplasmatic sperm injection – (ICSI) 71 patients, In vitro fertilization – (IVF) 42 patients, Intrauterine insemination – (IUI) 47 patients and spontaneous pregnancy are achieved in 39 patients. In the first biological group (azoospermia), of 70 patients, 34 (20,6%) improved the spermogram, which enables using several methods for this difficult group (ICSI, IVF) for - ART. In this group the BTB showed different variants of spermatogenesis disturbances correspondingly. As for the 3, 4 and 5 biological groups the observed spermogram improvements sharply increase the patients' liability to spontaneous pregnancy and make them IUI candidates.
Conclusions: MIV has minimal morbidity and recurrence and may be beneficial for certain patients. Making simultaneous BTB in the patients with azoospermia and severe oligospermia makes it possible to distinctly define the extent of spermatogenesis disturbances and to elaborate the adequate treatment tactics. The drastic improvement of the sperm quality after varicocelectomy increases the ART chances to spontaneous pregnancy.