



ISFAHAN UNIVERSITY OF MEDICAL SCIENCES
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Title:

**Semen Parameters and Chromatin Packaging in
Microsurgical Varicocele Patients**

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Abstract

Background: Varicocele is considered as standard treatment for male infertility for clinical varicocele. The aim of this study is to address the effects of varicocele on semen parameters, chromatin packaging, and pregnancy outcome.

Materials and Methods: This retrospective study was carried out between June 2006 and February 2011 on 145 infertile men with grade II or III varicocele. Microsurgical varicocele was performed as part of patient management. Sperm count, motility, morphology, and chromatin packaging were assessed with a Makler counting chamber, light microscopy, Papanicolaou and chromomycin A3 (CMA3) staining, respectively. In addition, we assessed spontaneous clinical pregnancy and miscarriage rates.

Results: The percentages of spontaneous cumulative pregnancies post-surgery were 33.1% (3 months), 42.06% (6 months), 46.2% (9 months), 48.9% (12 months), and 55.8% (after 12 months). Percentages of spontaneous cumulative miscarriage post-surgery were 2.46% (3 months), 4.93% (6 months), 4.93% (9 months), 6.17% (12 months), and 6.17% (after 12 months). Both sperm parameters improved and the percentage of sperm protamine deficiency decreased significantly after varicocele.

Conclusion: These results confirm that varicocele improves sperm parameters and chromatin packaging, thereby improving the chance of pregnancy. Positive aspects of this study include the large number of patients studied, duration of follow up, one surgeon who performed all of the surgeries, and type of surgery (microsurgery). The spontaneous pregnancy results also suggest that if pregnancy is not achieved within twelve months post-surgery, an alternative approach such as assisted reproductive technology (ART) treatment should be considered.

Keywords: Varicocele, Sperm Parameters, Protamine Deficiency, Pregnancy, Miscarriage

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