Efficacy of microsurgical varicocelectomy on seminal oxidative stress, semen parameters and sperm ultrastructure


Abstract:

Background Varicocele is the most common cause of male infertility. Varicocele affects spermatogenesis negatively by increasing the levels of reactive oxygen species. Varicocelectomy may improve spermatogenesis and semen parameters. Aim To detect the efficacy of microsurgical varicocelectomy in decreasing seminal oxidative stress and improving sperm parameters and sperm ultrastructure in infertile male patients. Methods Twenty-five infertile patients with third-degree varicocele were included in this study. Assessment of the levels of lipid peroxidation in seminal plasma, semen analysis and transmission electron microscopy examination were carried out before and 4 months after microsurgical varicocelectomy. Results A significant decrease in the malondialdehyde level was found after varicocelectomy (P<0.01). All sperm parameters except abnormal tail and ultrastructural sperm abnormalities improved significantly after varicocelectomy. Limitations The small sample and the lack of a control group are the main limitations of this study. Conclusion Although there is no conclusive evidence that varicocele repair improves spontaneous pregnancy rates, it was found that microsurgical varicocelectomy improved sperm parameters and sperm ultrastructure.

Keywords:

Infertility, oxidative stress, semen analysis, varicocele

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