Virtual Reality Simulation of Cell Needle Insertion

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In vitro fertilization (IVF) is a solution to overcome the problem of infertility of couples .Lately with the development of technology and using robotic systems, telesurgery systems are used in order to increase the accuracy, better control of needle movement and preventing injury to the ovum cell while injection in IVF. To provide better control of injection, haptic systems are used. In this study, a haptic system is designed with virtual reality environment in order to perform In vitro fertilization. For modeling of injection force, point-load model is utilized. A mass-spring model is used to simulate cell deformation during insertion. Simulation results have a good conformity with related researches.