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Abstract

Microsurgery, i.e. surgery on microscopic anatomical structures using a microscope and special instruments and sutures, has developed over the last 50 years and has proven to be an invaluable and indispensable technique in all surgical specialties. Many procedures, such as reattaching severed limbs, covering wounds with skin grafts, suturing peripheral nerves, etc., are based on microsurgery. Microsurgery is used in orthopedics, neurosurgery, plastic surgery, ophthalmology, ENT, urology, gynecology, transplants, etc. and, consequently, must be taught to medical students and form part of the basic training of surgical specialists. Since it is not a technique that can be learned through study, the use of interactive media and continuous practice is essential, as well as adherence to certain basic principles. Various models are used for practice: a. synthetic materials (gloves, gauze, tubes), b. cadaveric preparations (animal parts or human

tissues/limbs removed during surgical procedures), which enable the basic principles of microsurgery to be learned (familiarization with the microscope and acquisition of proficiency in the use of microinstruments) and c. experimental animals. In this textbook, after presenting the basic principles and applications of microsurgery, microsurgical techniques are presented using images and interactive media. The techniques are presented in order of increasing difficulty and concern the following: 1. Familiarization with the surgical microscope, microsurgical instruments, and sutures. 2. Practice in microsurgical knots on gloves. 3. Practice in anastomosis on tubes and animal specimens (chicken thigh). 4. Preparation of a neurovascular bundle and practice of anastomoses on arteries and veins and nerve sutures on experimental animals (mice), so that there is adequate preparation for the application of knowledge/skills in clinical situations.



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