

The importance of microsurgery in plastics

The field of plastic surgery was significantly enhanced by Tagliacozzi's development of the brachial flap and by Gillies' pedicle tubes, which allowed facial reconstruction. However, the long operative times required and the transient deformities caused by these procedures led surgeons to seek other alternatives.

Modern vascular surgery, as developed by Alexis Carrel, allowed the anastomosis of small arteries and veins. In the early 1960s, Jacobson and Juarez became famous by performing the anastomosis of vessels with a diameter of approximately 1 mm – the first microsurgery.

The revolutionary possibility of the transfer of free flaps opened up. This technique allowed, within a single operation, the transfer of large amounts of tissue in reconstructions never before possible, and without additional and transitory deformities, because the pedicle vessels were anastomosed to those of the recipient tissue.

In addition to free flaps, this technique permits the replantation of body parts such as fingers, hands, ears, and the penis.

The cross-leg and inguino-crural flaps, which use the fist as a vector in facial reconstructions, are now only employed in exceptional situations; that is, when other options fail. This is a major improvement in terms of patient comfort, and also eliminates the possibility of joint ankylosis. It is easy to imagine the psychological trauma of a child subjected to a procedure necessitating the use of a cross-leg flap, who must be immobilized on a hospital bed for a period of 3 weeks.

Another area in which microsurgical technique seems essential is in the treatment of peripheral nerve lesions. It is impossible to efficiently treat facial paralysis, brachial plexus damage, or other peripheral nerve injuries without using delicate instruments and magnification.

Training in microsurgery will give any plastic surgeon engaged in other branches of plastic surgery such as cosmetic surgery and knowledge and training greater confidence and security. A good example is the facelift, with the associated risk of injury to facial nerve branches. A surgeon with training in microsurgery performs this procedure whilst also focusing on the nerves, using magnification and ensuring that these structures are not damaged. If injury does occur, this surgeon will be able to immediately repair the injured nerve by executing appropriate treatment.

However, there is a reduction in the number of plastic surgeons in this area, and, on the other hand, there is an increase in the number of orthopedists performing free flaps and nerve repair using microsurgical techniques.

It is necessary to map, in our country, the training centers that have adequate infrastructure, including animal facilities, technicians, microscopes, and microsurgical equipment, to offer training in microsurgery to both residents and practicing plastic surgeons. It would also be important to list the centers without animal facilities that could provide more limited training. In this case, the training could be carried out using silicone tubes or even pieces of chicken bought from the supermarket. Interested surgeons may also perform this training at home using a magnifying glass because, although a surgical microscope is standard equipment, many surgeons have managed to perform microsurgery with only magnifying glasses, especially when working with free flaps and nerves.

I am sure that an increase in the number of plastic surgeons adept in microsurgery will improve the overall quality of the well-established field of Brazilian plastic surgery.

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