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Supermicrosurgery simulation using prosthetic lymphatic channels



Dear Sir,

Supermicrosurgery refers to that subset of operative microsurgery which involves the dissection and repair of structures less than 0.8 mm. Although practiced for many years in countries such as Japan, its use has not been as widespread worldwide, mainly because of a lack of training opportunities for surgeons' in units where supermicrosurgery procedures are not normally featured or when opportunities to train both inside and outside the operating room setting are not available. In this short communication, we advocate the use of prosthetic lymphatic-like channels to simulate supermicrosurgery training for surgeons' and allow them to hone their skills at their own pace.

Using hydrogel-based gels developed by Crownjun (Kono Seisakusyo Ltd, Japan) and SUNARROW Ltd, Japan, synthetic lymphatic channels have been fabricated, having very similar texture and appearance to lymphatic channels. These channels being delicate, require very meticulous handling, essential in handling tissues of these sizes. Aspiring supermicrosurgeons' initially start training on 0.8 to 1.1 mm microvessels with 10/0 Nylon sutures to get accustomed, before moving onto realm of supermicrosurgery with 0.6–0.8 mm diameter channels using 11/0 Nylon (65 micron) needles sutures. Once competent, they can then start suturing microvessels with diameters between 0.4 and 0.6 mm (Crownjun Ltd, Japan) using 12/0 Nylon, 50 micron needles (Figure 1).

This experience simulates the real life experience of handling lymphatic tissue as when performing lymphaticovenous anastomoses (LVA) and can be performed with on-table microscopes in an office setting. It also allows surgeons' to appreciate and develop the finer motor skills necessary to handle lymphatic tissues at magnifications of up to 25× as well as gain confidence with supermicrosurgical equipment and the ultrafine 50 to 65 micron needles.

Depending on previous microsurgical experience, supermicrosurgery skills can be developed in a relatively short period. An additional advantage is that it is a cost-

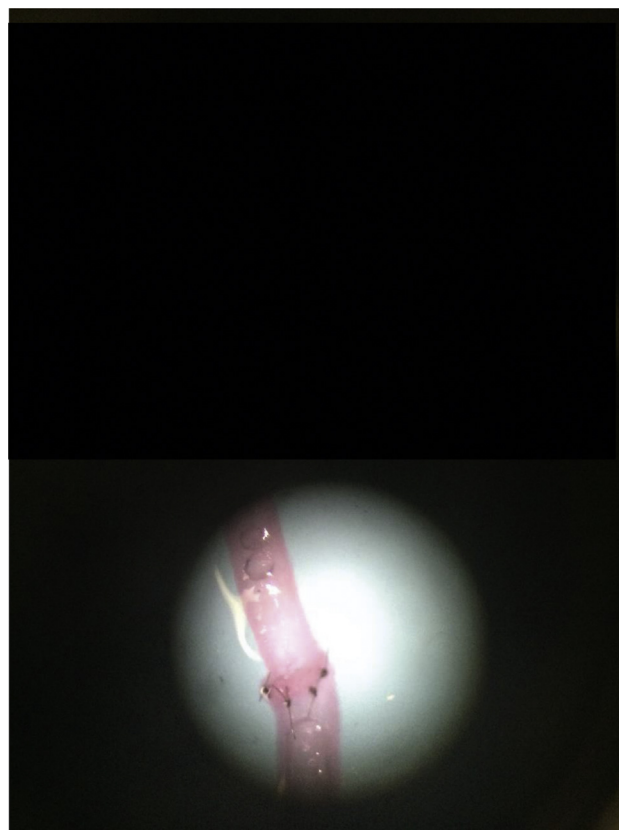


Figure 1 Supermicrosurgical anastomoses of a 0.5 mm diameter prosthetic lymphatic channel with 12/0 Nylon interrupted sutures, shown at 25× magnification.

effective method of acquiring super-microsurgical skills, wherever one is in the world. This simulator model is a suitable non-animal based alternative to the rat training model for supermicrosurgery, with significantly reduced ethical issues.^{1,2} It is the hope of the senior author (IK) that this will help the current supermicrosurgery revolution go further in advancing reconstructive surgery. Thank you.

Declaration of interest

The authors report no conflicts of interest.

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Botulinum toxin in the treatment of orofacial pain



Dear Sir,

I read with interest the article “Cutaneous cooling to manage botulinum toxin injection-associated pain in patients with facial palsy: A randomised controlled trial” by Pucks N et al. (*J Plast Reconstr Aesthet Surg*. 2015 Dec; **68**(12):1701–5).¹

Chronic facial pain can be difficult to manage. Facial pain associated with temporomandibular joint disorders has been a challenge to dentist as far as diagnosis and management is concerned. Facial pain syndromes need individual diagnosis and treatment. Botulinum toxin has been shown to be effective in the treatment of orofacial pain due to muscular disorders.²

It is difficult to explain the mechanisms leading to the analgesic effect of botulinum toxin used in the treatment of chronic facial pain or painful muscle disorders.³

Botulinum toxin has been used to treat various neurological disorders associated with pathologically increased muscle tone or impaired autonomic nerve regulation. In addition to the reduction in muscle innervation, botulinum

toxin tends to reduce pain in focal dystonia and other pain syndromes associated with muscle spasm.⁴

The administration of botulinum toxin for chronic facial pain should be reserved for those cases where conventional therapy proves ineffective and symptoms are severe.⁵

Conflicts of interest

None.

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