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Introduction

The use of the medical leech (*Hirudo medicinalis*) is well recognised in the field of plastic surgery.^{1,2} Medical leeches can help to relieve venous congestion in flaps through the anticoagulant property of hirudin found in their saliva along with active blood drainage.³

Several methods for “leech confinement” have been advocated including gauze-based dressings, suturing the leech in place,⁴ using a plastic cup with a hole at its base⁵ or using a syringe to confine the leech.⁶ We attempted to devise an economical apparatus to contain the leech on a digit.

Procedure

Materials required to construct this apparatus include a 20 ml saline plastic ampoule and a roll of Elastoplast adhesive tape. Firstly, the saline plastic ampoule was trimmed to remove the large anterior and posterior walls as shown in [Figure 1](#). Following that the remaining frame was wrapped with Elastoplast. The leech was released into the space and a further strip of Elastoplast formed the roof of the apparatus to provide the leech with the dark and warm environment that it thrives in,⁶ as shown in [Figure 2](#). Once fully engorged, the leech spontaneously detaches itself and can be replaced with a fresh leech.

Discussion

The techniques described in the literature for leech confinement have their pros and cons but for digital flaps our device proved durable, reliable, cost-effective and acceptable to patients. The apparatus is lightweight and fits snugly onto the patient's finger. Once secured with Elastoplast, the apparatus did not fall off with hand movements. The cost of a saline ampoule is estimated at £0.20 while the Elastoplast tape costs only £1.00 for each metre used, making it economical and easy to reproduce in any ward setting. As many patients experience psychological distress due to the sight of leech, the opaque apparatus prevents the patient from having to look at the leech while providing the leech with an optimal environment.

Conflict of interest statement

None to declare.

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Figure 1. The frame cut out from a saline plastic ampoule with Elastoplast tape wrapped around it.



Figure 2. The leech contained within the apparatus.

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References

1. Abdulkader AM, Ghawi AM, Alaama M, Awang M, Merzouk A. Leech therapeutic applications. *Indian J Pharm Sci.* 2013;75:127–137. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3757849/>.
2. Golden M, Quinn J, Partington M. Leech therapy in digital replantation. *AORN J.* 1995;62:364–375.
3. Mumcuoglu K. *Recommendations for the Use of Leeches in Reconstructive Plastic Surgery.* 2014.

4. Granzow J, Armstrong M, Panthaki Z. A simple method for the control of medicinal leeches. *J Reconstr Microsurg.* 2004;20:461–462.
5. Conroy F, Whitaker I, Jivan S, Majumder S. The prevention of migration during leech therapy. *Plast Reconstr Surg.* 2006;117:2539.
6. Mumcuoglu KY. Recommendations for the use of leeches in reconstructive plastic surgery. *Evid Based Complement Alternat Med.* 2014;2014:Article ID 205929.

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