

Letter to the Editor

Superior Thyroid Artery of Mls-Preserved Cadavers a New Microsurgery Training Model

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Microsurgery is a specialized area of surgery which demands training and research for every step. As a useful material, experimental have been making great use for this purpose. However, ethical and economic considerations have forced scientists to find other possibilities for training materials. That is why we decided to use embalmed human cadaver tissue with close similarity to live structures in this study.

Superior thyroid artery of a Modified Larssen Solution-preserved cadaver (MLS) was laid on saline-soaked gauze. Canulas were fixed on both sides with silk sutures. One ml of saline was injected into the vessel lumen and left to drain on the other side. During this, it was observed that tissue caliber and pulse was enough to mimic pulse. Afterwards, artery was cut in the middle. Adventisectomy was performed, and it was observed that adventitia dissects and pierces just as the same as living tissues. (**Fig. 1**) Anastomose was done with routine microsurgical technique, with a 9/0 nylon suture. Patency checked with 1 ml of pulsatile methylene blue injections, and the evacuation of methylene blue from the other side was observed, while still mimicking pulsatile reactions of the vessel wall. (**Fig. 2**)

There is very limited information about use of cadaver embalming techniques in microsurgical education. One of the best representatives of this topic is the study of Wolff et al, which uses a technique called Thiel's method. Their study shows similar visual quality and tissue properties as mentioned. In this study they used lateral circumflex femoral artery that has similar diameter to superior thyroid artery. [1]

Larssen Solution was first introduced by Sarubaio and modified by Guimaraes Da Silva. [2] It was proposed as an alternative to formaldehyde embalming technique because of its toxic side effects. It consists of a very low amount of formaldehyde compared with Thiel's solution, another fixative solution with similar properties that is used widely. [3] Moreover, Thiel's technique is a disadvantaged technique, because its cost is markedly higher than our technique (\$70 to \$330). [2]

Modified Larssen solution has been reported as a feasible technique on laparoscopic and instrumentation trainings. [2] Also, another report questioning the usability of MLS in Plastic Surgery training has been published. [4] This pre-study of ours show that superior thyroid artery of MLSs can be a good example of reachable and cost-effective microsurgery training method.

Reference

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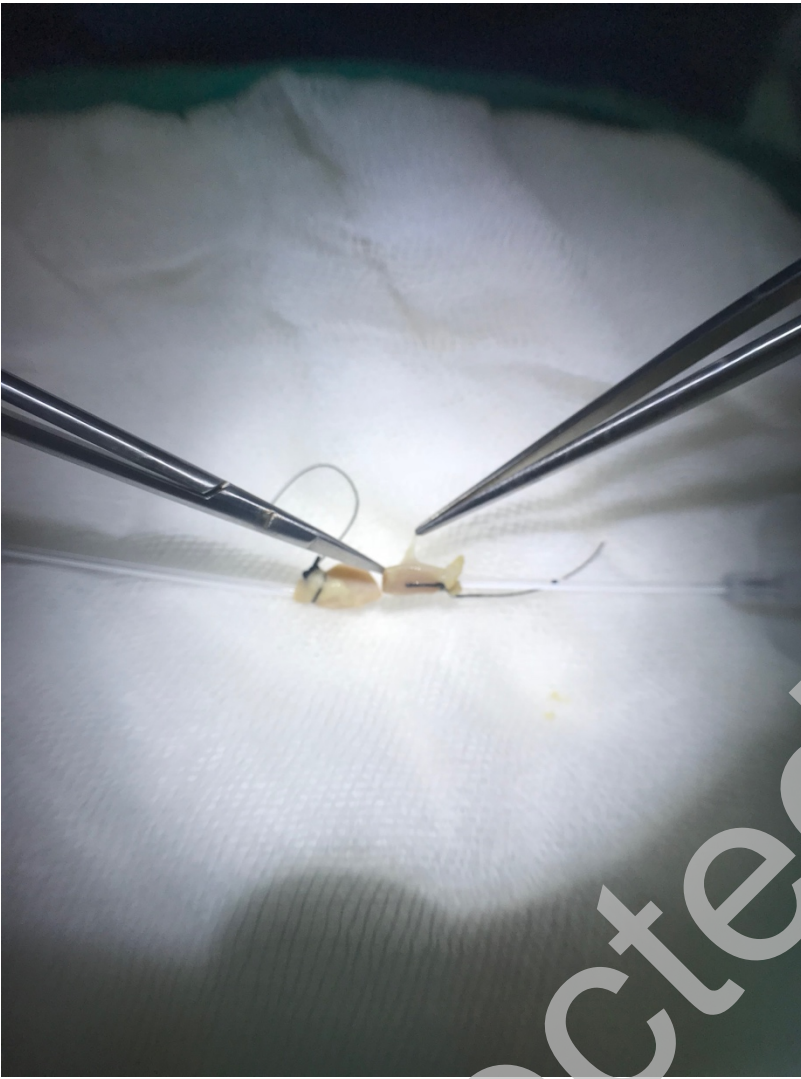


Figure 1. Adventisectomy of the vessel. Note the flexibility and fragility of the adventitial tissue is just enough to dissect and cut



Figure 2. Pulsatile methylene blue injection mimics the blood flow in anastomosed vessel