

学 位 論 文 の 要 約

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<p>主論文の題名</p> <p>Lymphaticovenular anastomoses training model for multiple stages of lymphedema by using efferent lymphatic plexus of the mesenteric lymph node of rats (ラット腸間膜リンパ節における輸出リンパ管叢を用いたリンパ浮腫進行度に合わせた LVA トレーニングモデルの開発)</p> <p>Ryohei Ishiura MD Kohei Mitsui MD Chihena Hansini Banda MD Kanako Danno MD Mitsunaga Narushima MD,PhD</p> <p>Microsurgery. 2023 43(3):261-265. Published: 16 November 2022 doi: 10.1002/micr.30986</p> <p>主論文の要約</p> <p>Introduction</p> <p>Lymphaticovenular anastomosis (LVA) has transformed lymphedema treatment and has become an important part of the surgical therapy. LVA requires supermicrosurgical skills and unique nontraumatic techniques as the lymphatic vessel diameter of varies with the progression of lymphedema from 0.3 to 0.8 mm. However, even though several supermicrosurgical vessel anastomosis training models have been reported, only few focus on LVA including both various sizes of lymphatic vessels and lymphatic dissection. We report the establishment of a novel in-vivo LVA training model using the rat efferent lymphatic plexus of the mesenteric lymph node.</p> <p>Materials and Methods</p>			

10 male Wistar rats, 572–850 g, were used in this study. A 2 cm midline abdominal incision was made in spine position. The small intestine and mesentery were withdrawn outside through the incision site and placed on the abdomen. A large lymph node covered with mesenteric adipose tissue was then identified on the proximal end. After removing the adipose tissue on the surface of the node, 0.3 cc indigo carmine blue dye was injected into the exposed lymph node and the efferent lymphatic plexus was visualized. Dissection was performed under an operating microscope until the efferent lymphatic plexus ran into a collecting lymphatic vessel. Lymphatic plexus of the mesenteric lymph node and mesenteric veins were used for LVA in an intima-to-intima coaptation manner using 12-0 nylon suture with 4–6 stitches in an end-to-end fashion. Postoperative patency was evaluated with indigo carmine blue after completion of anastomosis. Diameters of lymphatic vessels in the plexus and recipient veins were measured.

Results

The diameters of lymphatic vessels in efferent lymphatic plexus of the mesenteric lymph nodes and mesenteric veins used as recipients were measured in all 10 male rats. The mean number of lymphatic vessels included in efferent lymphatic plexus of the mesenteric lymph nodes was 7.5 (range, 5–11) and the mean diameter of the lymphatic vessels was 0.34 mm (range, 0.1–1.2 mm). The mean diameter of lymphatic vessels used for LVA was 0.46 mm (range, 0.25–0.7 mm). The mean diameter of the recipient veins was 0.49 mm (range, 0.35–0.7 mm). The postoperative patency rate after LVA was 100% (10/10).

Conclusion

We reported the establishment of LVA model involving the use of the efferent lymphatic plexus of the mesenteric lymph node and mesenteric veins in rats.