Lymphology 41 (2008) 126-130

ADVANCED IMAGING TECHNOLOGIES FOR MAPPING CADAVERIC LYMPHATIC ANATOMY: MAGNETIC RESONANCE AND COMPUTED TOMOGRAPHY LYMPHANGIOGRAPHY


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ABSTRACT

Lymphatic anatomy has become increasingly clinically important as surgical techniques evolve for investigating and treating cancer metastases. However, due to limited anatomical techniques available, research in this field has been insufficient. The techniques of computed tomography (CT) and magnetic resonance (MR) lymphangiography have not been described previously in the imaging of cadaveric lymphatic anatomy. This preliminary work describes the feasibility of these advanced imaging technologies for imaging lymphatic anatomy. A single, fresh cadaveric lower limb underwent lymphatic dissection and cannulation utilizing microsurgical techniques. Contrast materials for both CT and MR studies were chosen based on their suitability for subsequent clinical use, and imaging was undertaken with a view to mapping lymphatic anatomy. Microdissection studies were compared with imaging findings in each case. Both MR-based and CT-based contrast media in current clinical use were found to be suitable for demonstrating cadaveric lymphatic anatomy upon direct intralymphatic injection. MR lymphangiography and CT lymphangiography are feasible modalities for cadaveric anatomical research for lymphatic anatomy. Future studies including refinements in scanning techniques may offer these technologies to the clinical setting.