

Next-Generation Supermicrosurgery Consortium

15th Virtual Conference

The Future of Surgery: "Intuitively Visualizing Adjacent Lymphatics and Veins in 3D: Easing Bypass Site Selection for Advanced Lymphedema Diagnosis"

TUE, Jun 18, 2024, 18:00 - 20:00 (JST)

Dr. Yushi Suzuki and his research team at the Keio University School of Medicine are studying a testing method that uses photoacoustic imaging for lymphatic imaging. This technique visualizes lymphatic vessels in 3D along with veins, which were obscured by conventional imaging, and helps to select functioning lymphatic vessels adjacent to veins. Although this test is not currently covered by insurance, this minimally invasive treatment is expected to improve the quality of life of patients and reduce the burden on surgeons by facilitating the identification of veins and lymphatic vessels for bypass and is therefore required to be covered by insurance as soon as possible. By comparing MRI and photoacoustic imaging, we will highlight the usefulness and challenges of this latest technology for evaluating lymphatic vessels in 3D.

In Professor Isao Koshima's opening lecture, the focus will be on topics such as lymphatic vessel transplantation, photoacoustic imaging lymphatic perforator mapping, lymphedema, and objective evaluation using bioimpedance. The latest research findings and clinical applications in these areas will be presented.



Opening speech

The latest insights on super microsurgery

Isao Koshima, MD, PhD

Professor and Center Chief,
Department of Plastic and Reconstructive Surgery,
International Center for Lymphedema,
Hiroshima University Hospital

The Latest Imaging Diagnosis in the Field of Lymphatic Surgery Using MRI and Photoacoustic Imaging

Yushi Suzuki, MD, PhD

Project Assistant Professor
Department of Plastic and Reconstructive Surgery,
Keio University School of Medicine



■ Registration and Fees : <https://cpk.jp/reg/2>

Participation fees for organizations such as companies and public institutions are as follows:
15,000 yen per person, 28,000 yen for two people, and 40,000 yen for three people.

*Special discount tickets for 6 or 12 sessions are also available.

*Free for healthcare professionals, academia, and students (excluding adult students).

Seminar venue URL: <https://cpk.jp/s/2100>

Registration



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Outline

During cancer treatment, lymphedema, which occurs due to procedures like lymph node dissection, affects over 100,000 patients in Japan. The number of patients whose daily quality of life is restricted by this condition is increasing annually. Lymphedema is a condition where swelling occurs in the limbs due to the stagnation of lymphatic fluid flow. While the lymphatic vessels form a network throughout the body, they are transparent and extremely narrow, making observation by surgeons very challenging. In lymphedema surgery, surgeons create bypasses by sewing lymphatic vessels, some with diameters smaller than 0.5mm, to veins under a microscope. This aims to improve swelling by redirecting stagnant lymphatic fluid into veins for smoother flow.

The photoacoustic imaging lymphatic imaging examination being undertaken by Dr. Yushi Suzuki and his team at the Department of Plastic Surgery, Keio University School of Medicine, allows for the visualization of lymphatic vessels that were unclear with previous examination equipment. Both the intricate network of veins and lymphatic vessels are color-coded and can be viewed in 3D from all directions.

This advancement facilitates the easy selection of properly functioning lymphatic vessels that run adjacent to veins and allow smooth lymphatic fluid flow. Although currently not covered by insurance, considering the patients' quality of life, this minimally invasive treatment not only reduces the burden on patients but also alleviates the burden on surgeons by simplifying the identification of veins and lymphatic vessels to be bypassed. Hence, there is a demand for early insurance coverage and expansion of this examination method, considering both the reduction of patient and surgeon burdens.

Similarly, by comparing MRI, which can evaluate lymphatic vessels over a wide area in three dimensions, with photoacoustic imaging, we will introduce the usefulness and challenges of this latest technology.

From Professor Isao Koshima, we will hear about the latest research findings and clinical applications in areas such as lymphatic vessel transplantation, photoacoustic imaging lymphatic perforator mapping, lymphedema, and objective evaluation using bioimpedance, all of which are being conducted in the forefront of the medical field.

Supplementary Information [Career & Achievements]



Yushi Suzuki, MD, PhD

Project Assistant Professor
Department of Plastic and Reconstructive Surgery,
Keio University School of Medicine

Mar 2014 Graduated from Keio University School of Medicine
Apr 2014 Initial Clinical Resident, Fujieda Municipal General Hospital
Apr 2016 Full-time Resident, Department of Plastic Surgery, Keio University School of Medicine
Oct 2016 Full-time Resident, Plastic Surgery, Yokohama City Municipal Hospital
Apr 2017 Full-time resident, Ichiikawa General Hospital, Tokyo Dental College
Apr 2018 Late-stage resident, Department of Plastic Reconstructive Surgery, University of the Ryukyus Hospital
Apr 2019 Full-time resident, Plastic Surgery, Mita Hospital, International University of Health and Welfare
Oct 2019 Keio University School of Medicine, Full-time resident in Plastic Surgery
Apr 2020 Project Assistant Professor, Department of Plastic Surgery, Keio University School of Medicine

Member : World Society for Reconstructive Surgery Active member

Award History :

Academic Encouragement Award of Japan Society of Plastic and Reconstructive Surgery Scholarship 2020
Academic Encouragement Award of Japanese Society of Anti-Aging Medicine in 2021
Academic Encouragement Award for Clinical Excellence Japan Society of Plastic and Reconstructive Surgery Scholarship in Clinical Sections 2022
Best Paper Award 2022 Archives of Plastic Surgery (APS)
12th congress of the world society for reconstructive microsurgery Microsurgery Face-off 1st prize

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