

Prof. Isao Koshima: start lymphovenous bypass surgery as soon as possible to benefit more patients!

Received: 30 October 2018; Accepted: 14 November 2018; Published: 05 December 2018.

doi: 10.21037/abs.2018.11.03

View this article at: <http://dx.doi.org/10.21037/abs.2018.11.03>

Editor's note

2018 Shanghai Breast Reconstruction Symposium was held during Oct. 17–18 with a great success. More than 800 attendees across the country came to join the meeting, together witnessing the 10th event of the symposium. Focused on the surgical techniques of breast reconstruction and the related treatments, renowned experts from the USA, Sweden, the UK, Egypt, Japan and China have presented a splendid meeting showcasing up-to-date research advance and experience-based techniques. With an honor, the editorial office of *Annals of Breast Surgery (ABS)* got a chance to interview Prof. Isao Koshima to talk about the treatment of lymphedema after breast cancer surgery and the importance of lymphovenous bypass surgery. View the video to learn more information (Figures 1,2).

Expert introduction

Isao Koshima currently serves as the Professor and Chief of the International Center for Lymphedema, Hiroshima University Hospital and the Emeritus Professor, The University of Tokyo. He is affiliated with various professional academic societies: President of World Society for Reconstructive Microsurgery, Founding Member of “International Course of Perforator Flaps”, Executive Director of the Japanese Society of Lymphology, Honorary President of International Society of Lymphology, Honorary Executive Member of Japan Society of Reconstructive Microsurgery, Honorary Executive Member of Japan Society of Plastic and Reconstructive Surgery and Founder of International Course on Supermicrosurgery.

Prof. Koshima developed ultra microsurgery, which involves linking blood vessels, nerves and lymph nodes of 0.3 mm in diameter with microscopic guidance. He has held lectures on and live relays of actual ultra microsurgery in over 20 countries worldwide, and has been involved in the



Figure 1 Prof. Isao Koshima: start lymphovenous bypass surgery as soon as possible to benefit more patients (1)!

Available online: <http://www.asvide.com/article/view/28641>



Figure 2 Prof. Isao Koshima and ABS editor.

surgery of over 5,000 patients and his surgical techniques are spreading globally. He received several recognitions and honors, such as the 10th Harry J. Buncke Lecturer from American Society for Reconstructive Microsurgery in 2014, and the Maliniac Lecturer from American Society of Plastic

Surgeons in 2014.

Interview

ABS: *As a specialist in lymphedema after breast cancer surgery, would you tell us why lymphedema occur after breast cancer surgery? And what's its incidence rate?*

Prof. Koshima: Lymphedema occurs due to the resection of lymph node. It happens when a blockage or another problem changes the flow of lymph fluid, from distal to proximal, through the body's network of lymph vessels and nodes. That's how lymphedema occurs.

The incidence rate of lymphedema is around 30–50% depending on the time after the breast cancer resection, irradiation received, and the size of the edema. If deflation of the edema is 10 cm over normal circumferential rings, its incidence in less than 1 year after the cancer resection would be ~50%. If the tumor is irradiated, the rate would be ~30%. In short, its incidence depends on the size of the edema, whether irradiation is involved, time course, as well as different civil practices.

ABS: *What are some common approaches to deal with lymphedema after breast cancer surgery?*

Prof. Koshima: Currently physiotherapy and compression therapy are the major approaches used to manage lymphedema. Thirty years ago, I started to do lymphovenous bypass with super-microsurgical technique. Thirty years later, many plastic surgeons all over the world now started to perform this special technique now.

ABS: *What is the best way to treat lymphedema? How do you see the future of the management of lymphedema?*

Prof. Koshima: In the 90s, I initially tried lymphovenous bypass only for very severe patients, but I found that lymphedema comes from degeneration of smooth muscle cell within the lymphatic channel under electron microscopic examination (2). To prevent degeneration of smooth muscle cell, early stage lymphovenous bypass is necessary. In late 90s, I proposed that prophylactic lymphovenous bypass could prevent the occurrence of lymphedema. Early stage lymphovenous bypass or prophylactic lymphovenous bypass combined with tumor resection is the key to the prevention of lymphedema. In the coming 20 to 30 years, early stage or prophylactic lymphovenous

anastomosis will be essential to control the incidence of lymphedema, since almost all patients could simultaneously receive lymphovenous bypass and tumor resection.

ABS: *What are the complications of lymphedema?*

Prof. Koshima: If the lymphedema becomes progressive, some serious problems occur, such as immunodeficiency, damaged immune function and anti-cancer immunity. Frequent infections may occur and patients may have to be admitted many times. The most serious disease these patients may get is angiosarcoma due to anti-cancer deficiency. Mortality rate is high—almost all patients die within 6 months. However, I recently found that, with lymphovenous bypass, many angiosarcomas completely disappear with a single surgery without chemotherapy or radiation, and infection as well as some other serious complications are completely stopped. The advantages of the use of lymphovenous bypass include small incision, being able to apply local anesthesia, and without the need of admission, so it has become a popular choice among patients nowadays.

ABS: *How do you see the prospects of lymphovenous bypass surgery?*

Prof. Koshima: Nowadays, young plastic microsurgeons are receiving trainings on lymphovenous bypass surgery. The standard bypass for lymphatic channel over 1 mm is easy to handle, but for 0.3 mm ones more training would be necessary. I recommend not only plastic surgeons, but also oncologists, especially those who specialize in breast reconstruction in China, to start doing this surgery. Good news is—microsurgical instruments and microscopes are getting more advanced, and the techniques as well. It might be difficult to apply a new technique at the beginning stage, but it gets easier year after year. Just like 30 years ago, no one could do deep inferior epigastric perforator (DIEP) flap which I first invented, but now, many surgeons are able to do it. The same will happen for lymphovenous bypass surgery. Start this technique as soon as possible so that more patients can be benefitted from it. And lastly, prevention of lymphedema after breast cancer resection will be the next focused area in the coming future.

Acknowledgments

We would like to express our sincerest gratitude to Prof.

Isao Koshima for sharing his insights and opinions with us.
Funding: None.

Footnote

Provenance and Peer Review: This article was commissioned by the editorial office, *Annals of Breast Surgery*. This article did not undergo external peer review.

Conflicts of Interest: Both authors have completed the ICMJE uniform disclosure form (available at <http://dx.doi.org/10.21037/abs.2018.11.03>). MW and BL report that they are full-time employees of AME Publishing Company (publisher of the journal).

Ethical Statement: The authors are accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

Open Access Statement: This is an Open Access article

doi: 10.21037/abs.2018.11.03

Cite this article as: Wang M, Li B. Prof. Isao Koshima: start lymphovenous bypass surgery as soon as possible to benefit more patients! *Ann Breast Surg* 2018;2:22.

distributed in accordance with the Creative Commons Attribution-NonCommercial-NoDerivs 4.0 International License (CC BY-NC-ND 4.0), which permits the non-commercial replication and distribution of the article with the strict proviso that no changes or edits are made and the original work is properly cited (including links to both the formal publication through the relevant DOI and the license). See: <https://creativecommons.org/licenses/by-nc-nd/4.0/>.

References

1. Wang M, Li B. Prof. Isao Koshima: start lymphovenous bypass surgery as soon as possible to benefit more patients! *Asvide* 2018;5:878. Available online: <http://www.asvide.com/article/view/28641>
2. Koshima I, Kawada S, Moriguchi T, et al. Ultrastructural observation of lymphatic vessels in lymphedema in human extremities. *Plast Reconstr Surg* 1996;97:397-405.

(Science Editors: Molly Wang, Brad Li, *Ann Breast Surg*, abs@amegroups.com)