

Report on the OESO Training Course in Tokyo Regenerative Medicine using Cell Sheet Technology

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The OESO training course in Regenerative Medicine was held by the Department of Surgery, Institute of Gastroenterology, Tokyo Women's Medical University and TWIns (Tokyo Women's Medical University – Waseda University Joint Institution for Advanced Biomedical Sciences)

on Thursday, October 3, and Friday, October 4, 2019.

The Tokyo Women's Medical University Hospital is an advanced secondary and tertiary hospital with 1,379 beds. The university is active in Regenerative Medicine research using cell sheet technology.

In the gastrointestinal field, clinical research using oral mucosal epithelial cell sheets for esophageal ESD has already been carried out, and various studies are underway.

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In this training course, a total of 8 people (5 Taiwan Medical Doctors and researchers, and 3 Japanese researchers) participated. On the first day, we performed an extended Esophageal ESD live demonstration in the operating room (Fig. 1).

In the afternoon, each participant practiced the harvesting of cultured cell sheets and endoscopically transplanted them by membrane method and balloon device method at the animal laboratory of TWIns (Fig. 2).

On the second day, Prof. Yamato, Prof. Yamaguchi, and Prof. Kanaka gave lectures on cell sheet treatment and had a very active discussion with the participants (Fig.3).

Although it was a short day and a half, the participants were able to receive extensive training in Regenerative Medicine.



Figure 1. Live demonstration of Esophageal ESD



Figure 2. Practice training:
Endoscopic Transplantation



Figure 3. Lecture

Since the esophageal regenerative medicine field is a narrow field with limited number of researchers, it may be difficult to recruit enough experts to conduct this training course twice a year. Also, it may be a good idea to include endoscopic treatment and surgical treatment in the course.

The following is an excerpt of the schedule.

October 3, 2019

8:30 Orientation

- Opening remarks: SHIMIZU, Tatsuya M.D. Ph.D.

(Institute of Advanced Biomedical Engineering and Science, Tokyo Women's Medical University)

- Case presentation: OHKI, Takeshi M.D. Ph.D.

(Department of Surgery, Institution of Gastroenterology, Tokyo Women's Medical University)

9:30-12:00 Live demonstration: Esophageal ESD at the operation theater

12:00-13:30 Lunchtime

13:30-14:30 Orientation of practical training and short lecture

- TAKAGI, Ryo Ph.D.

(Institute of Advanced Biomedical Engineering and Science, Tokyo Women's Medical University)

14:30~16:30 Practice training: Transplant cell sheet in an animal model

October 4, 2019

9:00-9:45 Lecture ①

-“Cell Sheet engineering for Regenerative Medicine”

YAMATO, Masayuki Prof. Ph.D.

(Institute of Advanced Biomedical Engineering and Science, Tokyo Women's Medical University)

9:55-10:40 Lecture ②

-“The Endoscopic treatment strategy for superficial esophageal cancer”

(Department of Endoscopy, Gastroenterology and Hepatology, Nagasaki University Hospital)

YAMAGUCHI, Naoyuki Prof. M.D., Ph.D.

10:40-11:00 Break

11:00-11:45 Lecture ③

-“Efficacy of myoblast sheet for prevention of perforation after duodenal ESD”

KANETAKA, Kengo Prof., M.D., Ph.D.

(Tissue Engineering and Regenerative therapeutics in Gastrointestinal Surgery, Nagasaki University)

12:00~Closing remarks
