

## I Activity Report of International Observership in HBP Surgery

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I studied at Johns Hopkins University in the United States for 10 months, from July 2019 to April 2020, as a 12th-generation researcher of the International Observership Program of the Japanese Society of Hepato-Biliary-Pancreatic Surgery. Along with the recently established strict rules for studying abroad, the observership program has changed since 2019: from being allowed to study at 3 facilities in a span of 2 years to selecting only 1 of 5 facilities designated by the Society and studying only during the time commensurate with the amount of money proposed by each facility as the standard cost. Although the maximum length of stay at Johns Hopkins, where I had hoped to study, was set at 6 months, I was admitted to study there for 1 year by submitting a certification of subsidy payment for extra stay at the discretion of Dr. Maeda at Tohoku University, an 11th-generation researcher staying at Johns Hopkins at that time, and Dr. Yu, his mentor. This unexpected prolonged stay was a great pleasure for me. If I had stayed for a short period of 6 months, I would not have achieved as much. I truly appreciate that Professor Wolfgang, my host doctor, readily allowed the prolonged stay.

Johns Hopkins is located in Baltimore, Maryland, 65 km northeast of Washington, D.C. Baltimore is known as one of the oldest cities in the U.S. It is a historic city that witnessed the beginning of the Civil War and the birth of the national anthem and the stars and stripes; it is also notorious as the second most dangerous city in the U.S. (after Chicago), with a high crime rate, reflecting historical and racial issues, including a high percentage of the city's African-American population (more than 50%). I learned how many crimes occurred and how dangerous the city was by receiving security alert emails almost every week, informing me of the details of robberies, violence, and shooting incidents occurring around the Johns Hopkins Hospital and the Johns Hopkins University.

Despite the apparently high crime rate in Baltimore, patients visit Johns Hopkins not only from throughout the U.S. but also from around the world. A Pancreatic Cancer Multidisciplinary Clinic Conference for pancreatic cancer treatment is held every week, and therapeutic decisions are made with surgeons, oncologists, gastroenterologists, endoscopists,

radiologists, radiation oncologists, pathologists, anesthesiologists (pain control), genetic counselors, registered dietitians, and other healthcare professionals, to provide the optimal treatment. Moreover, enrolment is performed in many ongoing clinical trials, which I have found to be highly efficient.

Only 4 doctors cover the hepatic, biliary, and pancreatic fields at Johns Hopkins, the greatest hospital in the world, and surgery is basically performed by 3 members comprising 1 doctor and 2 residents (or 1 resident and 1 student). Surgeries are performed every day, and it is not uncommon to simultaneously perform pancreatectomies in 3 patients. Furthermore, surgeries are frequently performed in patients with advanced disease, and I was surprised that aggressive surgeries with homograft revascularization were frequently performed for unresectable locally advanced pancreatic cancer with major vascular invasion, for which surgery had been refused at other well-known hospitals. Even when performing such surgeries, doctors always provided instructions to residents, which made me feel that they were always aware of their responsibilities as mentors. While doctors performed the surgeries, including resection of the mass, senior residents occasionally performed reconstructions such as pancreatojejunostomy and choledochojejunostomy, and junior residents played a role in performing procedures such as cholecystectomy, which motivate them. Many robot-assisted pancreatoduodenectomies (Robot PD), robot-assisted distal pancreatectomies (Robot DP), and robot-assisted hepatectomies were performed, and all doctors, as well as all residents, had been trained to perform robot-assisted procedures. Until the first observation of Robot PD, I never imagined that such a complex surgery could be performed with robotic assistance. However, when I observed how safe and precise the procedures were, I was impressed with how prominent a technology it was. I was also surprised that the U.S. had an obviously higher female-to-male ratio of surgical residents and surgeons than Japan. Because there are only a few female hepatic, biliary, and pancreatic surgeons in Japan, as well as in other Asian countries, Chinese students were quite surprised to know that I was one and showed much respect for me.

Not only patients but also researchers visit Johns Hopkins from all over the world. Postdoctoral fellows and trainees visit Johns Hopkins from European countries, including the Netherlands and Germany, as well as other countries such as Pakistan and China. Approximately 12 international researchers constantly participated in the Hepato-Biliary-Pancreatic (HPB) group doing research on hepatic, biliary, and pancreatic diseases. Basic research was performed mainly using specimens such as circulating tumor cells and organoids in pancreatic carcinoma. In addition to meetings with each mentor, laboratory meetings of the HPB group were held every week. One researcher had one hour to present scheduled projects and project progress during the meeting every week, and discussions were held to

conduct better research. I did not perform basic research but conducted clinical research using large amounts of data at Johns Hopkins, to follow the program of "observing surgeries and conducting clinical research" held by the Japanese Society. I was provided with opportunities to join basic research members in making presentations. Because I made a presentation every 3 months, I collected data thoroughly from electronic records and conducted analysis every day, except when observing surgeries and attending conferences, lectures, and meetings. I had the opportunity to present the data organized initially and associated with "Aggressive Surgery for selected patients with Pancreatic cancer and Isolated Liver Metastasis" in the Pancreas Club 2020, which has been postponed due to coronavirus disease (COVID-19).

COVID-19, which originated from China, began to rage in the U.S. several months after the outbreak in Japan. At Johns Hopkins, rooms used normally for lectures and other purposes have been changed to the COVID-19 Countermeasures Office. Given that information was collected here from around the world reminded me that I was at "Johns Hopkins, a world-famous hospital." In the middle of March 2020, Johns Hopkins promptly instructed me to stay at home, and the conferences and meetings were all cancelled. In early April 2020, a curfew was imposed in the state. Accordingly, I stayed home and collected data at home, when I was not in the weekly meeting with my mentor or out going shopping. However, Johns Hopkins gradually became prepared for online meetings using the Zoom platform, and the laboratory meetings and journal club were resumed. Unfortunately, I had to return to Japan 2 months ahead of schedule due to the worsening infection status in the U.S. Since then, I have resumed the suspended researches and have been working on writing a manuscript, while keeping in touch with my mentor.

I am so happy that I met doctors renowned around the world and shared time with the leading doctors, who instructed me, at the leading hospital; moreover, I am glad to have met smart and big-hearted colleagues there, who I will treasure for a lifetime. I hope to continue these relationships and conduct collaborative studies with them some day. I am truly grateful for being provided with the opportunity to have this irreplaceable and precious experience.

Finally, I extend my sincere appreciation to Professor Takada, Professor Hanyu, and Professor Kawarada, who have established this wonderful observership program; doctors of the International Exchange Committee of the Japanese Society of Hepato-Biliary-Pancreatic Surgery, including Professor Eguchi; and doctors who have participated in this program and all staff members of the Japanese Society of Hepato-Biliary-Pancreatic Surgery secretariat office, who helped me in the various preparations for the observership program. Moreover, I deeply thank Professor Wolfgang, who graciously accepted and instructed me; Dr. Burns, who is my mentor; Dr. Yu, who assisted me privately; Professor Sho and my coworkers, who provided me with various support for the observership program; and my family members.

Unfortunately, the year 2021 program was cancelled because of COVID-19. I sincerely hope that the pandemic will end and that the observership program will again resume and provide many doctors with this valuable experience.

Figure 1. Commemorative photograph with members of the laboratory at Johns Hopkins School of Medicine.

Figure 2. Scene at the Pancreatic Cancer Multidisciplinary Clinic Conference.

Figure 3. With Professor Wolfgang at the operation room.

Figure 4. Last meeting with Dr. Burns, my mentor.

Figure 5. With Dr. Cameron, a legendary doctor.

Figure 6. Watching an NFL game with members of the laboratory (Baltimore RAVENS vs. New York JETS).

Fig 1.



Fig 2.



Fig 3.



Fig 4 .

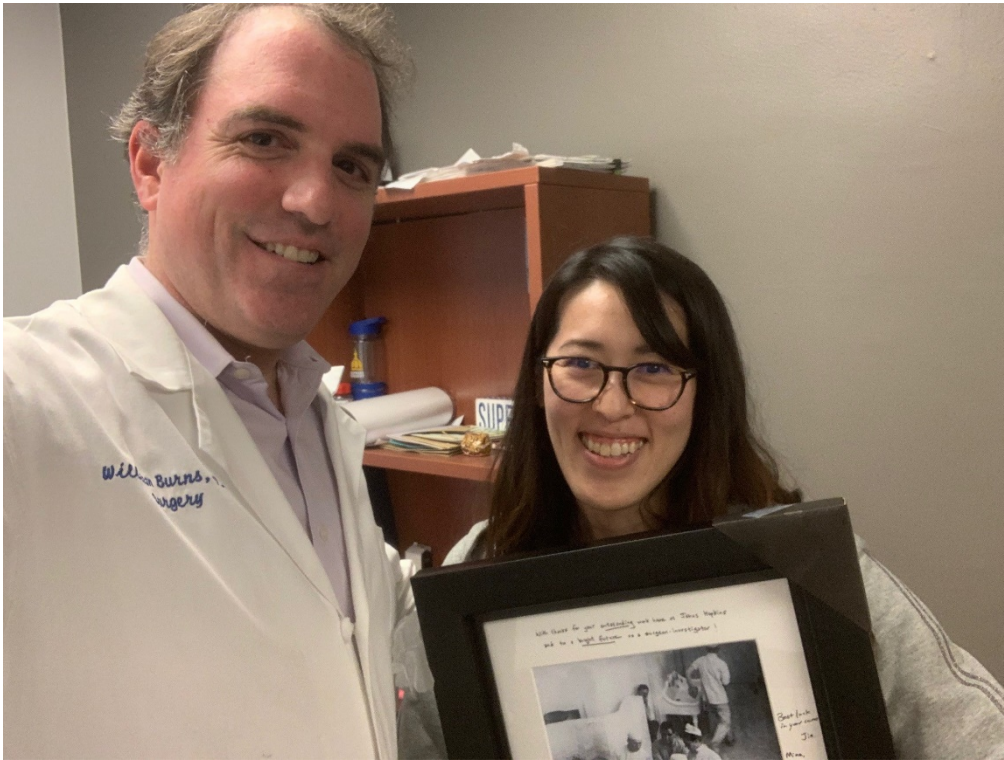


Fig 5 .



Fig 6.

