
Report of the 2009 Japan Traveling Fellow

By Lorenzo Ferri, MD, PhD, FACS

As I planned for the three weeks I would spend in Japan in April 2009 as the American College of Surgeons Traveling Fellow, I reflected on my clinical practice and research interests to identify gaps that my Japanese colleagues could help fill. Ultimately, I came up with a general theme for my visit: “Stage-Directed Therapy for Malignancies of the Foregut.” As a thoracic surgeon specializing in esophageal and gastric cancer, I had significant exposure to this concept through my training under John Wong, MBBS, FACS, and Simon Law, MBBChir, FACS at the University of Hong Kong, China.

Nonetheless, I was intrigued by the remarkable success in treatment of gastric and esophageal cancer reported in manuscripts from Japan, be they technical achievements such as endoscopic submucosal dissection (ESD) for early tumors and extended lymphadenectomy for more advanced tumours, or the use of adjuvant chemotherapy. Could the improvements in survival rates in Japan compared with the survival rates of this disease in North America be due solely to a difference in histological disease or stage migration? As a fervent supporter of D2 celiac dissection, I could not believe that this was the case, and so I was compelled to investigate



Role reversal: My previous surgical oncology fellow, Dr. Nishimori (left), teaching me a thing or two about the culinary wonders of Fukuoka, Kyushu.

these improvements at the source.

Accordingly, I organized my trip to visit centers that have embraced the concept of stage-directed therapy and have distinguished themselves in the treatment of foregut malignancies. For early cancer treatment, I visited two endoscopy units in Tokyo—the National Cancer Centre Hospital and Toranomon Hospital—headed by Takuji Gotoda, MD, and Noahisa Yahagi, MD, respectively. For advanced disease, I visited

Mitsuru Sasako, MD, FACS, of Hyogo University Medical Centre; Harushi Osugi, MD, at Osaka City University Hospital; and Harushi Udagawa, MD, FACS, at Toranomon Hospital.

Fukuoka—Japanese Surgical Society annual meeting

During the first stop in my quest for stage-directed therapy of upper gastrointestinal (GI) malignancies, I attended the annual congress of the Japanese Surgical Society in Fukuoka—the capital of Kyushu. As I

traveled to my hotel from the airport, I was welcomed by my first sighting of the famed *sakura*, as I had fortunately timed my visit with the short-lived, but truly breathtaking, cherry blossom season. The following day I presented a talk during the international travel grant session, titled Exploring the Role of Systemic Inflammation in Thoracic Cancer Metastasis, an overview of my basic science laboratory investigation into the cancer cell–inflammation cross-talk in cancer progression. At that session, I discovered that my Teutonic equivalent, the German Surgical Society traveling fellow Jan-Hendrick Egberts, MD, PhD, from the University Hospital of Schleswig-Holstein in Kiel, has a similar central research theme. After our presentations, we discussed potential collaborative efforts between our respective laboratories.

During the meeting, I took advantage of this important date in the Japanese surgical calendar to catch up with old friends and to make many new ones, as well. One of my previous surgical oncology fellows, Hidefumi Nishimori, MD, had returned to Japan to work in one of the premier esophageal programs in northern Japan, Prof. Masao Hosokawa's center at Keiyukai Sapporo Hospital in Hokkaido. Not only did we discuss, at length, future collaborative efforts, including exchanging cancer cell lines and access to each other's tissue banks, Dr. Nishimori also introduced to me the famed Fukuoka ramen noodles, best experienced at a roadside food



Dr. Ferri (left), with Japanese Surgical Society conference president, Professor Tanaka, at the conference reception.

stall (see photo, page 44).

The conference was well attended and highly successful due the organization of conference president Prof. Masao Tanaka of the Kyushu University (see photo, this page), who hosted an excellent opening reception where I had the opportunity to meet many surgeons from across Japan.

Although most of the presentations at the annual congress were in Japanese, the posters and slides were often in English or presented in a manner that was comprehensible to all, irrespective of country of origin. Furthermore, the many video sessions at the conference ensured that non-Japanese speakers could participate and learn from our Japanese colleagues.

I was astounded by the sheer number of sessions, often of-

ferred simultaneously, dedicated to gastric and esophageal surgery. Clearly my decision to come to Japan was a good one. After four days in Fukuoka, I packed my bags to head northeast to Osaka where I would meet up with my wife, Alison Breen, at Kansai airport as she travelled from Montreal to join me in the middle week of my 21 days in the land of the rising sun.

Kansai Area— Osaka and Hyogo

We were greeted at the airport in Osaka by Dr. Osugi, head of gastroenterological surgery at the Osaka City University Graduate School of Medicine, and his wife Hideko, for what would become a week of incredible and unparalleled hospitality in a country that



Professor Sasako of Hyogo College of Medicine, performing a D2 lymphadenectomy for gastric cancer.



Professor Osugi of the Osaka City University Hospital, with Dr. Ferri, immediately after a thoracoscopic 3-field esophagectomy.

takes this virtue seriously. The Osugis brought us to a hotel that they had arranged for our stay in the Kansai area, one which proved to be a central starting point for the week that lay ahead.

The first day I visited Professor Sasako, previously of the National Cancer Center Hospital (NCCH) in Tokyo, but currently the chair of surgery at Hyogo College of Medicine Hospital. Professor Sasako is widely regarded as a pioneer in extended lymphadenectomy and is an integral part of the Japanese Clinical Oncology Group organizing committee for randomized controlled trials investigating all aspects of treatment for gastric cancer, be it surgical (for example, D2 versus D1 celiac lymphadenec-

tomy, transhiatal versus left thoraco-abdominal for cardia cancers) or chemotherapy (for example, adjuvant S1 for resected gastric cancer). He is a true leader in gastric surgery and I was fortunate to spend a day visiting his program and to witness him perform a trademark D2 dissection (see photo, this page). We discussed the role of neo-adjuvant chemotherapy in gastric cancer, as well as the differences in treatment paradigms of this disease between North America and Japan.

Although our group at McGill University has embraced routine neoadjuvant/adjuvant perioperative chemotherapy, followed by resection with extended D2 lymphadenectomy for gastric adenocar-

cinoma, the standard for much of North America consists of up-front resection and adjuvant chemoradiotherapy. It was refreshing to speak with one of the true promoters of extended lymphadenectomy and hear his viewpoint on the subject, particularly the reasons behind the failure of the Dutch trial to show a clear benefit of D2 dissection. I look forward to discussing these topics with Professor Sasako in further detail as I proceed with the design of clinical trials within our own group at McGill.

I returned to Osaka for the following two days to reside more proximally in the GI tract, namely in the esophageal surgery department at Osaka City University Hospital, led by

Professor Osugi (see photo, page 46). An internationally recognized leader in thoracoscopic extended lymphadenectomy for esophageal cancer, Professor Osugi had previously invited me to visit his impressive center, and the ACS traveling fellow program offered me the perfect opportunity to take him up on this offer.

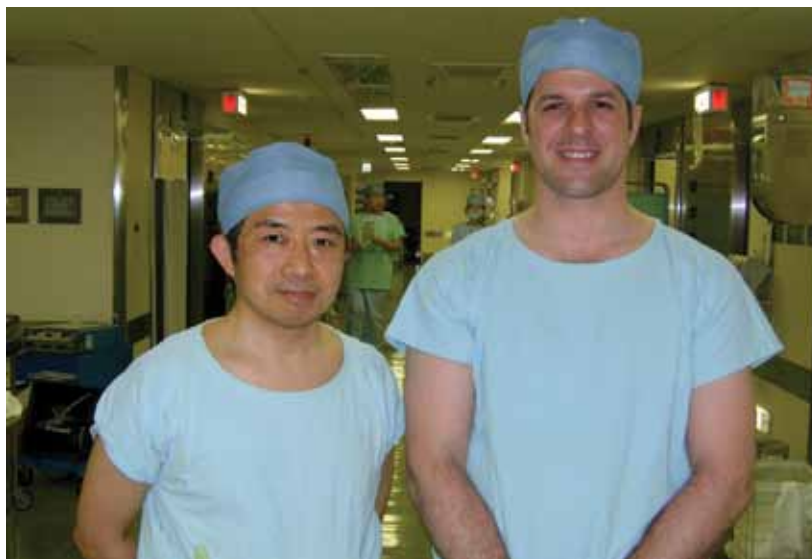
Professor Osugi has successfully applied minimally invasive techniques to a procedure few thought amenable to this approach, en-bloc three-field esophagectomy. Indeed, his technique was initially met with skepticism from the esophageal surgical establishment in Japan. However, after witnessing Professor Osugi's technical wizardry in skeletonizing both recurrent nerves within the chest, I can easily see how he has been able to convert many Japanese surgeons to the thoracoscopic approach, including Professor Udagawa, whom I would visit later in my trip.

Professor Osugi has a remarkable team that, during the procedure, works like a symphony in full swing, as if one head were controlling three sets of hands. I felt somewhat embarrassed showing him videos of some of my own minimally invasive esophagectomy cases, and promised him to show him a more refined technique when I invite him to Montreal. To aid me in this endeavor, he gave me as a gift (one of many from him and his wife) a patented "Osugi retractor" that he developed for this procedure, an instrument I have since used in Montreal.

During my visit, I gave a talk to the Osaka City University Department of Surgery on one



Hideko Osugi demonstrating to Dr. Ferri's wife the finer points of Ikebana, the ancient art of flower arranging.



The halls that Akiyama built: Professor Udagawa (left) of the Toranomon Hospital, immediately following a 3-field esophagectomy.

of my recently closed trials, titled Peri-operative Taxane-Based Chemotherapy for Adenocarcinoma of the Esophagus, Gastro-esophageal Junction, and Stomach: Early Results from a

Phase II Trial. After my talk, the surgical team including Dr. Lee, Professor Osugi's partner, hosted my wife and me at a Korean barbecue. We were treated to the "cardiothoracic

special,” a title that may conjure images of a two-pound cheese steak in North America, but in Osaka, a city with a large Korean population, this represents eating delicately grilled bovine heart, aorta, and trachea. I think I may still be trying to digest the trachea.

My wife and I spent the rest of the week in Kyoto, enjoying the cherry blossoms in full bloom. We were fortunate to have scheduled this portion of the trip at the height of this incredibly beautiful season, in the city that most Japanese believe to be synonymous with cherry blossoms. Although I did not visit a hospital in Kyoto, I couldn't resist the urge to buy a chef's knife as sharp as any scalpel I have ever used, at a store called Aritsugu—an establishment that has been the purveyor of fine knives to the discerning Japanese chef for over 400 years.

We returned to Nara to spend the weekend with Professor Osugi and his wife Hideko in their remarkable traditional Japanese home, complete with tatami mats. As we made a concerted effort not to discuss surgery, I learned as much about Japanese culture during this weekend with Harushi and Hideko as I have about medicine. (see photo, page 47). Alison and I are truly grateful for the incredible hospitality that the Osugis provided us, and we look forward to hosting them in Canada in the near future.

Tokyo–Toranomon Hospital and NCCH

I returned to Tokyo to visit the Toranomon Hospital, a center renowned across Japan for



Professor Udagawa and colleagues carefully dissecting the 3-field esophagectomy specimen and separating the lymph nodes into their designated stations, according to the Akiyama map.

the management of esophageal disease. Indeed, it is at this hospital that Drs. Hiroshi Akiyama and Masahiko Tsurumaru established and popularized extended lymphadenectomy for esophageal cancer, a technique used routinely throughout Japan but sparingly in North America. Although I currently perform three-field lymphadenectomy for mid and

upper esophageal cancers, I can think of no greater place than Dr. Akiyama's institution to witness this procedure performed to perfection. Indeed, Professor Udagawa (see photo, page 47), the present head of esophageal surgery at the Toranomon Hospital, has not only continued Akiyama and Tsurumaru's legacy, he has also improved upon it by

adding the minimally invasive approach. I witnessed Professor Udagawa perform two thoracoscopic esophagectomies during my time with him, and I can honestly state that I have never seen a finer lymph node dissection in the neck or chest anywhere in the world. He has truly perfected this technique, and I was impressed with the attention he and his team paid, not only to the dissection of lymph nodes within the patient, but also to the surgical specimen once it had left the body. Long after the patient had left the operating theatre, all members of the surgical team remain to dissect every lymph node from the specimen into discrete numbered packages according to the original map designed by Dr. Akiyama (see photo, page 48). Through the combination of thorough in-situ dissection, as well as careful examination of the specimen, retrieval of more than 80 lymph nodes is not uncommon at the Toranomon Hospital.

Professor Udagawa and his team treated me to an incredible Kaiseki-style meal in Ginza, where we continued our discussion on neoadjuvant treatment of esophageal cancer.

Moving from maximally to minimally invasive procedures, I moved on to the area of non-surgical treatment of foregut malignancies by visiting two of the pioneers of endoscopic resection. Professor Gotoda, of the NCCH, and Professor Yahagi, of Toranomon Hospital, were both instrumental in the development of ESD at the end of the last millen-



Professor Gotoda of the NCCH with Dr. Ferri.

nium. This technique involves a significantly greater degree of complexity than endoscopic mucosal resection (EMR), but, unlike EMR, this technique adheres to surgical oncology principles by providing a pathology specimen with a measurable deep and circumferential margin for any size lesion. Although EMR is widespread in North America, ESD is rarely performed here, despite these clear benefits.

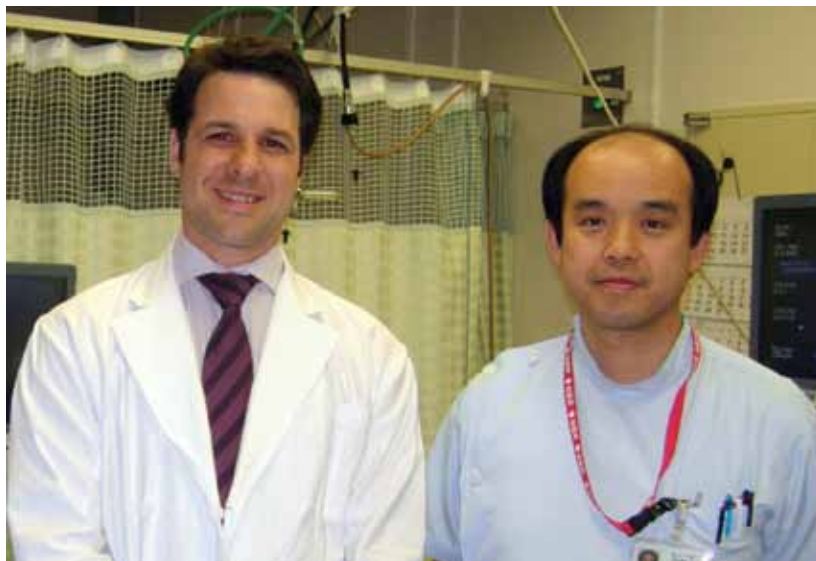
As I embarked from my hotel to the NCCH, I realized that

my tourist's map did not include the NCCH. However, my limited navigation skills were not required, as I had learned that the hospital is directly across the street from the famed Tsukiji fish market—the world's largest—and my olfactory senses proved as useful as any global positioning system device. I spent two days within Professor Gotoda's endoscopy unit at the impressive NCCH, and witnessed numerous ESD procedures. This technique requires specialized equipment

that is passed through the operating channel of a standard gastroscope. Professor Gotoda (see photo, page 49) has developed one of the most widely used tools for this procedure, a needle knife with an insulated tip (the IT knife) that enables a safe dissection of the submucosa from the muscularis propria.

Dr. Yutaka Saito, a technically gifted endoscopist in Dr. Gotoda's unit, performed a difficult ESD for a mid-esophageal squamous cell carcinoma during my visit. I met frequently with Dr. Gotoda and members of his team, including Dr. Saito, and we discussed at length the development of this technique, as well as the possibility of expanding the indications to cases highly pertinent to Western surgeons. Along those lines, Dr. Gotoda showed me images of a recent case of long segment Barrett's with high-grade dysplasia for which he had performed ESD in a patient from Britain.

For the final sojourn of my trip, I returned to the Toranomon Hospital to visit the endoscopy unit headed by Professor Yahagi (see photo, this page). This extremely busy unit performs over 800 ESD procedures annually and is widely considered, along with the NCCH, as one of the premier centers for this technique. During my two-day visit I witnessed more than 10 ESD procedures for early tumors of the esophagus, stomach, and colon. I was greatly impressed by the coordination of all members of Dr. Yahagi's team, which made these difficult procedures



Dr. Ferri and Professor Yahagi, at Toranomon Hospital.

appear effortless. As with Dr. Gotoda at the NCCH, Dr. Yahagi has been instrumental in the development of advanced endoscopic equipment for mucosal incision and submucosal dissection, including the flex knife and dual knife. It was interesting to compare and contrast the differences in technique between these two gifted pioneers of ESD. In developing the McGill Endoscopic Submucosal Dissection program, I have incorporated a portion of what I learned from both endoscopists.

Conclusion

Upon returning to Montreal, I reflected on my incredible trip to Japan and realized that I had completed a once-in-a-lifetime experience. I am deeply indebted to the many people I met, and am grateful to the International Relations

Committee for choosing me as the 2009 ACS Traveling Fellow to Japan. I look forward to continuing my friendship with the surgeons and endoscopists I met during the ACS traveling fellowship to this remarkable country, and am certain that the lines of scientific and clinical collaboration that we have already initiated will last for many years to come.

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