Professor Chang Moo Kang: "Patient-Oriented Pancreatectomy", a treatment concept of pancreatic disease

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Professor Chang Moo Kang (*Figure 1*) from Department of Hepatobiliary and Pancreatic Surgery, Yonsei University College of Medicine, Pancreaticobiliary Cancer Clinic, Yonsei Cancer Center, Severance Hospital, Seoul, Korea, is actively involved in minimally invasive (robotic and laparoscopic) pancreatectomy and pancreatic cancer surgery. Especially, on the basis of "Yonsei Criteria", he selectively applies minimally invasive radical pancreatectomy to left-side pancreatic cancer patients, proving potential feasibility the patients-oriented surgical approach in treating pancreatic cancer.

Prof. Kang made an excellent speech on the topic "Robotic Pancreatectomy" on the 12th Asia-Pacific Congress of Endoscopic and Laparoscopic Surgery (ELSA 2015) in Daegu, Korea. The *Translational Gastrointestinal Cancer* (*TGC*) editor is honored to meet and invite Prof. Kang to have an interview for sharing his experiences and future expectation on robotic pancreatectomy.

Figure 1 Professor Chang Moo Kang.

TGC: Can you share your presentation "Robotic Pancreatectomy" with us?

Prof. Kang: Robotic pancreatectomy is one of the tools to achieve the goal of the minimally invasive surgery. Nowadays, we are living in a far-advanced laparoscopic era, so we can do laparoscopic surgery according to a surgeon's technique, philosophy and belief, while sometimes we can take great advantage of robotic technology to fulfill the goal of the minimally invasive surgery.

TGC: How is the development of robotic pancreatectomy in Korea?

Prof. Kang: As it is known that the robotic surgery is very expensive in Korea, so it is very difficult for many patients who need minimally invasive surgery to have robotic surgery in routine practices. So if the selected patients can afford the robotic surgery system, then we apply the robotic pancreatectomy. The fact is that most patients can not afford the cost of the robotic surgery. Therefore, we need to keep it in mind that we have to do our best to provide safe laparoscopic pancreatectomy for those patients. Our goal will be achieving the goal of "minimally invasive" surgery, not doing "robotic" surgery.

TGC: Is the robotic pancreatectomy suitable to all kinds of patients. If not, what selection criteria will you follow to recommend the patients for this surgery?

Prof. Kang: Function-preserving minimally invasive pancreatectomy should be regarded as the best option to the patients who have benign and premalignant lesions. Unlike usual pancreatic cancer, these patients will expect for a very long-term survival. So this is why we need to consider the quality of life and the function preserving in minimally invasive surgery for them. Function-preserving minimally invasive pancreatectomy usually requires of fine and delicate surgical technique. Many surgeons and

patients may compensate this challenges by using robotic surgical system.

TGC: If a surgeon hopes to learn robotic pancreatectomy, does he need to go through the process from open surgery then the laparoscopic surgery and finally to robotic surgery?

Prof. Kang: Many people will say that we have to move from the open, the laparoscopic and finally to the robotic surgery. However, I think we should see in a different way because the laparoscopic surgery and the robotic surgery belong to the same catalogue of surgery, so called minimally invasive surgery. For example in my case, when it comes to the central pancreatectomy which usually demands for far-advanced laparoscopic technique in early period, I did not have any experience of that laparoscopic central pancreatectomy. I initially jumped to the robotic surgical system to do the central pancreatectomy. During the experience in robotic pancreatectomy, I could also increase my technique and experience in laparoscopic pancreatectomy. Now my surgical skill compensates the gap between the reality and my performance, so I started to convert robotic to laparoscopic surgery. Still many patients can not afford the robotic surgery. Therefore, in order to expand my role as a minimally invasive surgeon, I am not stick to robotic surgery. I need to convert my role even to laparoscopic surgery to fulfill my goal of minimally invasive surgery. Of course, extensive open pancreatectomy is willing to be provided for the patients with pancreatic cancer with advanced stage.

TGC: You have ever mentioned that your surgeries are on the basis of "Yonsei Criteria". Can you share with us what is "Yonsei Criteria"?

Prof. Kang: A few years ago, there was a large controversial issue on doing laparoscopic radical pancreatectomy. Some surgeons believed that the radical surgery could not be obtained by laparoscopic or robotic surgery while some surgeons believed that they could do exactly the same essence of oncologic surgery by laparoscopic pancreatectomy. So we thought that if we selected the right patient for minimally invasive radical pancreatectomy, the oncologic outcome will be the same because both laparoscopic and open radical pancreatectomy are based on the same concept of oncologic concept. The approach is different, but the concept is the same. So there is no reason to be different in terms of oncologic outcome. The Yonsei Criteria is our criteria to select the patients for minimally invasive radical distal pancreatectomy: (I) tumor relatively confined to the pancreas; (II) intact fascia layer between the pancreas and the left adrenal gland/ kidney; (III) tumor should be apart from the origin of splenic artery for safely controlling vascular structure. When tumors fulfill this criteria, we can know the laparoscopic radical pancreatectomy can be easily and effectively be done for the patients. The important thing is that many people ask us why we apply minimally invasive radical pancreatectomy even to the pancreas cancer patients. The reason is that the pancreas cancer can not be cured only by surgery. The pancreas cancer patients also need to have adjuvant chemotherapy. According to the advantage of minimally invasive surgery, if we apply minimally invasive surgery for the patients, they usually have a fast recovery. Finally, they can get early adjuvant chemotherapies. Therefore, theoretically, chemotherapies should start faster than conversional open surgery. This is our belief. In fact, currently available evidences also support this hypothesis.

Furthermore, please remember that this Yonsei Criteria is defined based on preoperative image study (CT scan). According to our experiences, patients with Yonsei Criteria was found to have superior oncologic outcome comparing with those without Yonsei Criteria. This means this criteria can be used as clinical staging system in treating left-sided pancreatic cancer. We need to study more about this issue.

TGC: What is your expectation on the future treatment of pancreatic disease?

Prof. Kang: We have a concept of the "patient-oriented" surgical approach. Many people may think that open surgery is a very primitive surgery; laparoscopic surgery is an intermediate one; and robotic surgery is a far-advanced surgery. However, in my opinion, I do not think so. When looking at our clinical practices, open surgery, laparoscopic surgery and robotic surgery are all intermingling together for proper management of the patients. According to the patients' condition and disease extent, sometimes, we need to provide open surgery, or, sometimes, minimally invasive like laparoscopic or robotic surgery. This will be one of the aspects of the patient-oriented surgical approach. Moreover, preoperative clinic-pathological information and even genetic information will enhance the chance to realize

our concept in future treatment of pancreatic disease.

TGC: That's all for today's interview. Thank you again for sharing your thoughts!

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Footnote

Conflicts of Interest: The author has no conflicts of interest to declare.

(Science Editor: Josie C. Huang, TGC, tgc@amepc.org)

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