

Prof. Zhigang Li: combination of tradition with innovation leads to the diversification of esophageal surgery

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When we reached the room we had pre-arranged with Prof. Zhigang Li (*Figure 1*) in Shanghai Chest Hospital SCH, the headnurse told us Prof. Li was still consulting his patients in the outpatient office. A few moments later, Prof. Li hurried to come to the room and shared with us his insights on the past, present, and future of esophageal surgery, training of young talents, and cooperation with *Shanghai Chest*.

Development of esophageal surgery as a subspecialty

As the interview began, Prof. Li detailed the development and futures of the Department of Thoracic Surgery, especially the Department of Esophageal Surgery, in SCH. The Department of Thoracic Surgery is an old discipline all around China and its achievements in complex lung surgery, lung transplantation, esophageal surgery, and tracheal surgery have dramatically promoted the development of new technology of thoracic surgery in China.

As a subspecialty under the thoracic surgery, the Department of Esophageal Surgery has taken a lead in the introduction of many new procedures including three-incision esophagectomy for esophageal cancer, complex esophageal surgery, and staged esophagectomy. According to Prof. Li, the Department of Esophageal Surgery has done two major jobs in modern times: first, it has paid special attention to benign esophageal disease and was the first center in China to carry out the detection and evaluation of esophageal function; second, the department has accumulated rich experiences in three-field lymph node dissection (including selective three-field lymph node dissection) for esophageal cancer.

As the treatment of esophageal diseases is becoming more systematic, new technologies are being introduced at a faster pace, among which robots are gradually involved in esophageal surgery. SCH is one of the Chinese centers that have introduced robotic techniques in the treatment of esophageal cancer. Up to now more than 200 cases of

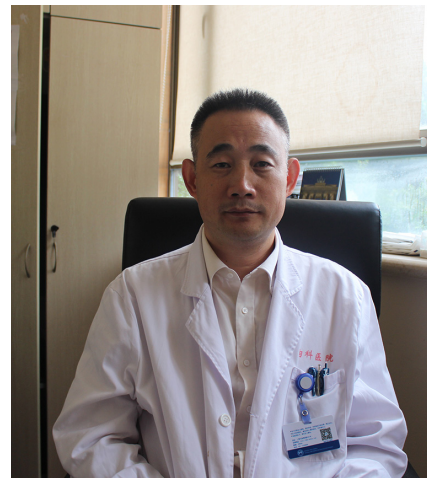


Figure 1 Prof. Zhigang Li.

esophageal diseases have been treated by robotic surgery in SCH and a biggest and most active robot esophageal surgery center has been set up here. Prof. Li pointed out that, compared with the traditional open surgery, robotic surgery had obvious advantages in lymph node dissection, let alone the shorter operative time and better inter-patient consistency. For other complex conditions such as complex digestive tract reconstruction or operation on some complicated tracheoesophageal fistula, robotic surgery also has some advantages.

The Department of Esophageal Surgery is specialized in the multidisciplinary treatment of esophageal cancer, with techniques and procedures including “Layer-to-Layer” treatment of esophageal cancer, endoscopy, traditional video-assisted thoracoscopic surgery, robotic surgery, preoperative induction radiochemotherapy, and postoperative adjuvant radiochemotherapy. Focusing on these priorities, the surgical teams in the Department of Esophageal Surgery has carried out a series of scientific research. For instance, a randomized controlled trial (RCT) comparing the roles of robotic surgery and traditional thoracoscopic esophagectomy is

under the way, which has been supported by the Shanghai Municipal Commission of Health and Family Planning. To promote the multidisciplinary management of esophageal cancer, an RCT that compares the effectiveness and safety of endoscopic treatment and surgical treatment for submucosal esophageal cancer has been designed. Many other studies have also explored the effect of preoperative induction radiotherapy on minimally invasive surgery and on the application of postoperative adjuvant therapy in patients with squamous carcinoma of the esophagus. The department also has cooperated with the Eye & ENT Hospital of Fudan University in research on the hypopharyngeal carcinoma. The Department of Esophageal Surgery has conducted some preclinical research projects such as PD-L1 immunotherapy for esophageal carcinoma and the role of circulating tumor DNA in peripheral blood in predicting esophageal cancer.

The future of esophageal surgery

“Currently there are many treatments for esophageal cancer,” said Prof. Li, *“However, we can not ignore the traditional techniques when promoting a new procedure.”* Some similar clinical studies have yielded completely different findings. Esophageal surgery has long been handicapped by the high incidences of postoperative complications. Therefore, the department should always consider the feasibility of limited or nonoperative treatment options for certain patients. He stressed that all these techniques must be harmless for patients and could improve the quality of life of the patients. The selection and optimization of these techniques need to be validated and screened in clinical trials. In the future, another major challenge is to select the appropriate indications of surgical treatment of esophageal cancer, thereby optimizing treatment and maximizing benefits for patients.

Along with our better understanding of the molecular mechanism of esophageal cancer, many new research and new techniques have emerged in the field of thoracic surgery. Advances in these research and technical innovations may ultimately change clinical practices; however, *“there is still a long way to go,”* said Prof. Li. For instance, a recent clinical trial has shown that PD-L1 had no significant efficacy in treating lung cancer. Today, TKI (tyrosine kinase inhibitor) has become a promising treatment option with satisfactory effectiveness; however, the roles of immunotherapies still need to be optimized and verified in future studies before they can ultimately be used

in clinical settings. Therefore, the application and future direction of the targeted therapy in thoracic surgery still warrant further investigations.

Prof. Li has a clear vision on the future of the Department of Esophageal Surgery of SCH. The department will focus on the robot esophagus surgery, with a target to further optimize the robot-based fine, controllable, and minimally invasive procedures, and the results will be compared with the traditional surgeries. In the treatment of difficult and complex cases, the number of cases and the technical standardization will be further increased, making the department one of the most reputable centers both in China and abroad. Management of benign esophageal diseases will also be a key developmental direction of the department. New methods including anti-reflux magnetic ring and a variety of endoscopic treatments have been developed for treating benign esophageal diseases. However, the minimally invasive technology should be better integrated with other treatment options to make the management more reliable and feasible.

Expectations for young doctors and the journal

“It is very hard to be esophageal surgeons,” Prof. Li said with deep motion, *“The duration of an esophageal surgery is often long, the perioperative complications are common, the postoperative management is difficult; compared with other patient populations, patients with esophageal diseases have relatively poorer socioeconomic conditions.”* He stressed that if young doctors would like to join the department of esophageal surgery, they must be psychologically prepared and be ready to endure hardships. *“However,”* smiled Prof. Li, *“Esophageal surgery has its own advantages.”* First, it involves many anatomic regions, which is helpful for the training of a young surgeon; second, there are fewer people who are interested in esophageal surgery, which in return provides more opportunities for young clinicians to do new jobs in this field. For example, the benign esophageal diseases may be a rich mine to be fully exploited by young doctors.

Prof. Li was happy for the launch of *Shanghai Chest* because he had been subject to some degree of discrimination when submitting articles to foreign journals. He hoped that *Shanghai Chest* would provide a fair platform for publishing research findings from his department. When asked about his cooperation with *Shanghai Chest*, Prof. Li expressed his strong support for the Case Report column. *“Although case presentation is highly involved and time consuming, and the*

requirements on the data are high,” said Prof. Li, “Case report is very meaningful and informative.” In the Case Report column, international experts could be invited to share their views and comments, which could also promote the exchange, learning, and cooperation among these experts.

Prof. Li has visited many top hospitals in the United States for many times. These experiences have brought new technology and new ideas into his clinical work. More importantly, he always treats patients with humanistic care and sympathy, with “patient-oriented” being his only pursuit. In the interview, we felt Prof. Li’s practical and clear vision about the future development of esophageal surgery and his firm determination to make the Department of Esophageal Surgery of SCH a terminal care center and clinical center for complex esophageal diseases and the most important surgical treatment center for benign esophageal diseases in southern China.

Expert introduction

Zhigang Li, associate professor, chief physician, MD. Currently he is the deputy director of the Department of Thoracic Surgery and director of the Department of Esophageal Surgery in Shanghai Chest hospital. He had been a visiting scholar in the Department of Thoracic Surgery at the Mayo Clinic and in the Department of Thoracic Surgery, Massachusetts General Hospital, Harvard University Medical School. Also, he had been the Everts A. Graham Fellow at the Cleveland Medical Center. He specializes in the minimally invasive surgical treatment of thoracic tumors, surgical management of benign esophageal lesions including hiatal hernia, esophageal reflux, esophageal diverticulum, and complex esophageal complications, surgical treatment of tracheal conditions, and resection

of chest wall tumors and reconstruction of chest walls.

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Footnote

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