

Jianxing He: natural power without decoration, stable force advance side by side

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Introduction

“A daunting sword does not need a blade point, and awe-inspiring artwork shows no trace of craft.” This is the martial philosophy upheld in *The Return of the Condor Heroes* (martial art novel by Jin Yong), where the protagonist Guo Yang, once broke the sky and the earth by brandishing a heavy sword without blade point. This reveals that a heavy sword is powerful by itself much more than the tricks it contains; and one’s strength depends more on its nature than decoration. The iron-cast sword, created by Jin Yong, the author of the novel, represents a subtle strength that appears mild while acts toughly, and depends on its genuine nature rather than attachment. Though the sword is fictitious, the sense holds that natural power without decoration and stable force advance side by side.

When it comes to health care professionals, the sword, not necessarily breaks the sky or earth, will nevertheless take them where they want to go and make them what they want to be in the arena of health care. It is amazing how the physician featured in this interview greatly impacts the field of thoracic surgery as if he trembled the earth and heaven with a heavy sword—his own power.

Interview

JTD (starting the discussion with a joke): *“Hello, Professor He. Anecdote has it that you never sleep. Is that true?”*

Prof. He: *“Are you kidding me? There is never a moment when I don’t want to just lie down and sleep. Now I can barely keep my head up.”*

Prof. Jianxing He, an admirable expert in clinical care, teaching, research and administration, serves the Department of Thoracic Surgery of the First Affiliated Hospital of Guangzhou Medical University (hereinafter referred to as FAHGMU). In countless exclusive interviews and reports on the Internet, Prof. He has been hailed as a gentle, talented, gifted, kind and vigorous physician who has made significant contributions to the field. People do

not hesitate to describe this high-achieving professional in this way.

As the interviewer, I attempted to unveil the secret of how the esteemed Prof. He established himself, but I failed to satisfy the audience for their mundane pursuit. As for his life experiences, he had a small talk with me in a rather calm manner. When taking questions of the clinical specialty, he explicitly imparted the most relevant knowledge. For the rest of the time, he is open-minded to different opinion and generous in appreciating others’ merits. What’s more, he is good at sharing his profound insights into things in metaphor as an encouragement to people around him.

Seeing through his glory, we can feel the innermost essence of Prof. He, where an iron-cast heavy sword stays, the sword that generates subtle, firm and pure strength (“Sword” has the same pronunciation of “Jian” in Chinese, the first name of Prof. He).

A lonely pioneer

Back in the days of being a novice, far from any of the honors mentioned above, and new to the field of general surgery, Prof. He did not have many opportunities to perform surgeries. As such, he asked his family to buy pork liver and heart from the grocery for him to practice suturing and knot-tying at home, so that he had extra training. During the time of less wealth, he invested much of his effort and income in perfecting his professional skills. That was how he lived and worked day in and day out.

“Before doing thoracoscopy in 1994, I had done over 2,000 traditional open chest surgeries.” says Prof. He. Expecting to live by what they had learned from their mentors’ experiences, his peers were reluctant to switch technique after mastering a surgical skill. Such transformation meant that they had to change their muscle memory, face increased risk and abandon their mastered skill. Fully understanding this concern, however, Prof. He believed that his great surgical skills and sound knowledge

of anatomy were advantages for him to embark on thoracoscopy.

“At first, thoracoscopy was not readily accepted by thoracic surgeons in China. Chinese Journal of Thoracic Surgery was the only journal that published papers related to thoracoscopy.” says Prof. Kaijun Wu, former President of the FAHGMU. In April 1994, Prof. He and his mentor Prof. Yunyou Yang performed China’s first video-assisted thoracoscopic surgery (VATS) of bullectomy. They published a case series of 41 VATS cases in *Chinese Journal of Thoracic Surgery* in October. The number of VATS grew to 230 by the next May. In the first article, Prof. He wrote with vision, *“VATS has smaller incisions and causes less pain and hemorrhage intraoperatively and postoperatively. It brings less disruption to the cardio-pulmonary function and therefore reduces duration of anesthesia and surgery.”* In the end, he clearly stated the value of VATS in central lung cancer, *“it may reduce unnecessary exploratory thoracotomy.”*

This statement is beyond doubt if put in the 21st century. However, it took a full decade’s effort for Prof. He to convince people. *“In those days, people just believed that big incisions gave you a wider field of view, but was slow to recognize the convenience and enhanced capabilities that technology gives us. Technology reaches beyond limits of human bodies.”* He pointed out the fundamental difference between open chest surgery and VATS with a metaphor: *“If we want to find something under the bed when no light is available, the most straightforward and effective way is to remove the bed board. But with illumination and a clamp, we can pick out what we want precisely without touching the board even a little bit.”*

In the 1990s when traditional mindset still prevailed in China, Prof. He’s insight was far beyond his time. Not only did he have to fight against various controversies, but also pays for the animal experiment and raises funding out of his own pocket, as well as collect experimental animals by himself while looking for grant. And all of these were done in the 1990s when China’s economy was less prosperous than today. Surgical equipment and devices were available in meager variety and quality. *“In those days you had to carry the oxygen cylinder all by yourself. And there was only one option for each device. You didn’t have a choice, unlike now, everything is well developed.”*

With all his efforts, Prof. He performed China’s first video-assisted thoracoscopic lobectomy as early as 1994, only 2 years after the world’s first VATS in 1992. Starting almost at the same time as global pioneers did, the Department of Thoracic Surgery of the FAHGMU has never lagged behind the world ever since and has even taken

the lead.

The year of 1996 is a meaningful divide, when VATS lobectomy was finally accepted by the *Chinese Journal of Surgery*. Prof. He and his colleagues published an article on *“lobectomy by video-assisted thoracoscopic surgery”* featuring the outcome of 21 cases of lobectomy and lymph node dissection, 2 years later than they had planned when they started using VATS. Another interesting article was published in the same year from a thoracic surgery team from Beijing entitled *“The role of thoracoscopy in the diagnosis and treatment of lung cancer”*. The authors questioned if complete tumor removal could be achieved via thoracoscopy. And they believed that VATS required rigorous patient criteria and could only serve as an effective supplement in lung cancer surgery, rather than a substitute for routine open chest surgery.

The few thoracic surgeons who supported VATS only accepted thoracoscopic bullectomy and other simple techniques back then. They had different opinions towards complicated VATS. Therefore, Prof. He’s articles on thoracoscopic radical resection of lung cancer, esophageal cancer, as well as thymectomy were only published in Chinese journals, mostly *Chinese Journal of Surgery*.

In 2002, Prof. He’s article *Video-assisted small incision thoracic operation for the treatment of lung cancer and 5-year follow-up* was finally accepted and published in the *Chinese Journal of Clinical Thoracic and Cardiovascular Surgery*. He had completed 2,200 cases of VATS for lung cancer patients with 8 years’ industrious effort. The 130 patients undergoing VATS in 1995 had been followed up for 5 years with decent outcomes.

“We had been doing VATS for exactly 10 years by 2004. As National Comprehensive Cancer Network (NCCN) Guidelines approved VATS, people finally began to embrace it. However, we also had a lot of harsh lessons in those years.” Prof. Kaijun Wu and Prof. Yunyou Yang, two prominent senior surgeons, both used *“crossing the river by feeling the stones”* to describe the most difficult decade of the developing of minimally invasive technique in China.

A stable force

Prof. He gradually got used to the pioneering spirit of *“crossing the river by feeling the stones”*, and his modifications and innovations grew over time, including new surgical procedures, new auxiliary techniques and new surgical skills. The number of patents grew from one, two to ten, twenty.

The number of his articles published in SCI-indexed journals climbed from 1, 2, to 10, 100, and 200. The total impact factor (IF) increased from 10 to 100 and finally over 1,000. He has been marching forward step by step, and these numbers kept increasing along with his advancing strides.

No longer satisfied with simple modifications, he even moved on to the path of invention and guided innovation of his peers. In 2015, he proposed a paradigm-shifting, completely innovative procedure—tubeless VATS. Accelerated recovery gains new explanations from this new mindset, which in turn provides readily available hints for tubeless anesthesia, precision anesthesia, tubeless minimally invasive surgery, intraoperative highly selective anesthetic blocks and other innovative surgical techniques.

In Feb 2018, Dr. Wenlin Wang from the Department of Thoracic Surgery, Guangdong Second Provincial General Hospital participated in a pediatric tumor resection with thoracic wall reconstruction on a girl, led by Prof. He. After the operation, Dr. Wang said with admiration, *“Prof. He always practices with the original intention of a doctor and thinks beyond the limit of a thoracic surgeon. Only with this mindset can a doctor care for his or her patients both comprehensively and considerately. In this operation, he risked losing his reputation and insisted on minimally invasive surgery instead of the routine open chest surgery, which is most widely accepted. He eventually decided to do the resection and reconstruction through a smaller incision using minimally invasive techniques.”*

Until now, Prof. He has been performing lung transplantation for 15 years. Even 5 years ago, the 1-year survival rate of lung transplantation at FAHGMU was as high as 90%. Many lung recipients gained a new life thanks to Prof. He. According to a recent report, Prof. He’s team did an all-night operation, racing against time to save Uncle Liao, a critically ill patient. After surgery, Jie Liao, Uncle Liao’s son, often sang his father’s favorite military songs in ICU to encourage him. This patient was discharged fully recovered and lived for almost a year.

Prof. He has cared little about his fame but much about how to bring more benefit to patients. *“We not only cure the patient’s disease, but also help him get well.”* With new age comes new demands. He advances along with the trend while at the same time keeping himself well-prepared. He has been actively engaged in clinical care up till today. He maintains his most real and powerful role in the society—a doctor.

“I’ve done two lung transplantations today and I’m a little bit tired. I’ve got to go home. You shouldn’t go home too late, either.”

said Prof. He who dropped by and saw his colleagues working overtime at the editorial department of *Journal of Thoracic Disease*. The editors heard him, looked up and saw him smile with fulfillment.

“This scrub cap is reserved for him and he orders to have it washed every time after he uses it. I always joke and complain to him ‘Can I live one day without having to wash it?’” said Li Wang, Charge Nurse of the Operating Rooms.

“I respected him very much. Many clinicians would gradually reduce their clinical work as they age or assume an administrative position. But he is an exception. You see, he really loves his job.” said Dr. Xin Xu from the Department of Thoracic Surgery, FAHGMU.

“What I appreciate most is his commitment to patients. If something happens in the ward and the doctor on duty can’t handle it, he’ll be back in an hour as long as they need him there.” said Run Li, staff nurse of the Department of Thoracic Surgery, FAHGMU.

One might say that Prof. He has a “heavy sword” in his mind. But we’d rather say he is the heavy sword himself with a stable force. Powerful but unaggressive, firm and gentle, it revives with time.

A natural power

Prof. He holds countless titles, including current President of FAHGMU, FACS, FRCS, member of the American Association for Thoracic Surgery, STS and European Society of Thoracic Surgeons, as well as Chairman of the Guangdong Academy of Thoracic Diseases. He is no longer a novice surgeon, but a key figure in the field of thoracic surgery. When he began to promote tubeless VATS, it was a bumpy start, but he proceeded and gave a good example of *“simplicity brings superiority”*.

“Roadshow on Tubeless & ERAS” featuring “complete minimally invasive, 24-hour recovery”, went on vigorously in China, a big country of the oriental world. In the Occident, *Journal of Cardiothoracic and Vascular Anesthesia* published the major events of 2016 in the field of anesthesia in thoracic surgery, among which Tubeless VATS ranked the first.

In spite of the optimism around tubeless VATS, a scenario at a seminar on thoracic surgery at the end of 2017 redirected attention to the problem of tubeless VATS. An expert of thoracic surgery took a glance of *Techniques of Tubeless Thoracoscopy*, edited by Prof. He, and said with a sigh, *“Only Jianxing He’s team have the guts to do tubeless VATS”*, and then laid back the book.

A book is lonely when it has no reader, and Prof. He might be just as lonely when his idea was still not widely supported and adopted. He was well familiar with this loneliness, as VATS was strongly opposed in the early years. He became a highly steeled “heavy sword” after living through this desperate loneliness. Nowadays, he is better able to appreciate the inevitable disputes in the early phase of innovation, and to prove himself. *“It’s normal to have disputes. We don’t have to give too much explanation. Seeing is believing.”*

The most effective way to resolve disputes is through facts. Prof. He performed 12 live surgeries at the 1st International Workshop of Tubeless VATS. Ten of them were non-intubated VATS while the other two were intubated surgery, serving as control. The workshop received enthusiastic feedback, and Prof. He was highly recognized by the attendees of the workshop. *“People reject tubeless VATS only because they haven’t seen it, used it or even imagined it. Therefore, to earn their recognition, we just have to do a good job and demonstrate excellent results.”* he said with a delicate grin.

In 2017, Prof. Maathisen, Director of Department of Thoracic Surgery, Massachusetts General Hospital, visited FAHGMU when he thought highly of the teamwork and surgical skills of Prof. He’s team in spontaneous-ventilation video-assisted thoracoscopic surgery (SV-VATS). In the same year, Prof. He’s team published *Thoracoscopic surgery for tracheal and carinal resection and reconstruction under spontaneous ventilation* in the *Journal of Thoracic and Cardiovascular Surgery*, a top journal in the field of thoracic and cardiovascular surgery.

It is often best to keep down to the earth and let things take their course with natural power. Prof. He’s actions speak for himself. Excellence is not achieved by words or exaggeration, but simply by perseverance. This is his asset endowed from the *“Decade of Initial Development of Minimally Invasive Surgery”*. In the martial philosophy of Yong Jin, it means *“simplicity brings superiority”*.

A subtle power on Confucianism

Li Wang, Charge Nurse of the Operating Rooms, who has long been working in Prof. He’s surgical team, said with pity: *“He’s fantastic in every way except that he’s too Confucian. He is never hard on those around him.”* As his old comrade, Ms. WANG really hopes that he would be just a little harder on those around him and let them share his responsibilities, so that he won’t burn out.

Part 1: on Confucianism—altruism (“ren”) is essential

In 2015, Prof. He shared his “secret” of innovation with the audience after he was elected member of the AATS. He said, *“The needs and outcomes of patients are my momentum and ultimate goals, which are also constantly changing and upgrading. Every part of the process deserves deliberation and improvement, from patients’ needs to clinical outcomes, recovery after surgery, pain attenuation and duration. This is also the source of innovation and the ultimate goal of doctors.”*

Prof. He emphasizes the importance of patients in every one of his lectures. When introducing SV-VATS, he underlined that we should try to not only reduce the patient’s suffering, but to also relieve their fundamental fear of surgery. *“In the beginning, medicine was all about techniques. But how to turn techniques into art depends on the morality of the doctor. We should always practice medicine based on the patient’s interest. With every operation, we try to achieve the smallest incision, fewest tubes, most simple procedure, shortest duration of surgery and fastest recovery, so as to completely relieve the patient’s fear of the word ‘surgery’”*.

As is known to all, fear is a human instinct. But Prof. He hopes to destroy the stereotype of surgery being frightening and to extricate patients from the fear of surgery. When shared during one lecture, his words immediately filled the doctors present with tremendous confidence towards the future of surgery, as well as admiration of him, the proposer of this uniquely innovative idea.

Prof. He is a multitasking surgeon as he is also involved in administration, academic research, publishing and editing, technological development, etc. Seemingly irrelevant though, all these peripheral tasks revolve around his clinical practice.

As the saying goes, faith in your heart fills your footsteps with strength. The patient is the most important guide inside Prof. He’s mind, and also the source of his warm power.

Part 2: on Confucianism—being an educator

The knowledge and skills of medicine is incredibly vast. Every health-care professional will face mentoring of disciples.

Daoyuan Wang, founder and CEO of AME publishing company, said *“How far a medical student or a doctor can achieve largely depends on his or her first mentor. If the mentor smokes, the student has to smoke, too. And if the mentor likes to drink in business banquet, the student has to follow suit.”*

We randomly interviewed some of the graduate students of Prof. He about their impression of this mentor (or “boss”, more often used in China). Some of their comments are

shared as follows on condition of anonymity.

“Our boss doesn’t smoke or drink alcohol. He works out a lot in the hospital. Look how fit he is. When we go out for dinner, he doesn’t gorge himself, which is very rare for surgeons. He usually talks over dinner, asking about the progress of our papers and our lives. He’s very kind.”

“The most impressive thing I remember is how he gathered what has learned on his way back from a conference held in the US. He wrote down more than 50 ideas about the conference, let us discuss first and said he would go to the upcoming seminar for graduate students in the unit. On the day of the seminar, he went straight to the meeting room to join us right after he got off the plane.”

“He is our role model both in the field of research and clinical practice. I’m lucky to have him as my boss. He’s my goal which I try to achieve.”

Part 3: on Confucianism—practicing it in everyday life

On a Women’s Day, Prof. He presented a rose for every woman editor in AME out of his own pocket. The aromatic greetings left an unforgettable mark on all their minds. Prof. He has already been known for his high EQ (emotional quotient). The title “He Shuai” (“Shuai” means both general and handsome in Chinese) seems more of a compliment of this gentleman’s gentleness, rather than his outstanding appearance.

That’s the interpretation A: Do unto others as you would have them do unto you.

Prof’s He has practiced medicine for 32 years. His excellent discipline and outstanding accomplishment is the best example of “*Maintain your own integrity before doing good to the whole world*”. In November 2017, he published a study in the *Journal of Thoracic Disease*, demonstrating that myasthenia gravis (MG) patients benefited more from spontaneous ventilation in thymectomy, which effectively reduced occurrence of myasthenic crisis. The study expands the indication of SV-VATS, provides extra evidence and suggests better care for MG patients.

The bigger your dream is, the stronger you will be. To lead a meaningful life, practicing Confucianism is a good way. One should achieve his/her value by bringing benefits to others and meeting others’ needs. Prof. He always attaches great importance to promoting innovated technologies and champions the idea that “*a technology is good only when it benefits as many patients as possible*”. His tenderness that we all feel originates from Confucianism, grows from his kind heart and is nurtured by his aspiration for a better world.

That’s the interpretation B: In times of success, do good to the whole world.

A subtle power as the source of philosophical wisdom

“*Think philosophically.*” is the methodology that Prof. He keeps emphasizing. “*Think before you act.*” is his favorite catch phrase.

Part 1: on philosophy—analogy

On 2017/12/14, Prof. He compared thoracoscopy to driving in the advanced workshop of “glass-less” three-dimensional minimally invasive thoracic surgery. Using glass-less three-dimensional display is like looking directly ahead, while using traditional two-dimensional display is like looking through the rear mirror. A clear view is an important guarantee of safe surgery. Although two-dimensional thoracoscopy is also clear, it is not as precise as glass-less three-dimensional thoracoscopy. He ended with an exact metaphor: “*A novice driver’s most important job is to see the road clearly and figure out the route. Likewise, a novice surgeon must know how to dissect tissue. One must know the map before he can travel thousands of miles.*” The audience couldn’t help nodding at hearing what he said.

Prof. He is quite fond of using cars as a metaphor. He shared with an AME reporter the nuances of “*good care is 30% treatment and 70% nursing*” during a break of the Founding Congress of Thoracic Surgery Committee, Chinese Medical Education Association in 2017. “*Treatment and nursing care are two completely different concepts just like repair and maintenance of automobile. Repair happens when a car breaks down. That is when people see a doctor when they feel sick. But one should know that it is good maintenance that makes a durable car. If we just wait until the car goes wrong and then repair, it may be too late.*”

In his “lecturer mode”, Prof. He is good at using analogy to explain complicated things. Analogy enables the audience to recognize, in some aspects, the common traits of seemingly unrelated things or phenomena. It is a good way for one to recognize his or her limitations from comparison and learn from other people. It is also easier to get the key message through the receivers with his straightforward explanation and reach consensus with people. This of course facilitates cooperation and joint effort in problem solving.

Part 2: on philosophy—adapting to each specific situation

According to the Charge Nurse Li Wang, Prof. He

demands extremely coordinated teamwork during his surgery. An operating room nurse has to complete rotation in other surgical specialties before he or she is capable of participating in his surgery. Although every surgeon has a relatively stable style and special habits, Prof. He's surgical style and habits are always elusive. That's because his brain runs fast and he keeps in mind patient's general conditions and particularities. He would adjust his maneuvers based on the patient's changing situation during surgery. Therefore, it is difficult for his staff to predict what instrument he needs, which poses a great challenge to the surgical nurse's adaptivity.

But it is exactly his ability to play by ear during surgery that makes "sing, dance and drink coffee 4 hours after surgery" a reality, rather than a stunt, for his patients receiving tubeless VATS. In his "clinician mode", Prof. He has exceptional surgical skills and adaptive capability, so that he can choose a surgical plan that has minimized risk of bleeding based on the patient's specific conditions, as well as a precision-medicine guided nursing strategy, for each patient. All of these eventually give him the courage and skills to perform day thoracic surgery even without any intubation on certain cases.

There are countless examples where Prof. He's adaptability is shown. The elusive behavioral pattern, swift action and innovation of the observant surgeon give rise to his working style of "adapting to each specific situation".

Part 3: on philosophy—tackling the principal contradiction

The 19th National Congress of the Communist Party of China held in October 2017 highlighted new principal contradiction facing Chinese society. Social problems including adverse events of violence in medicine and the shortage of medical workforce are frequently seen, while the Chinese people have growing demands for better health care.

Prof. He, who thinks ahead of his time, came to realize years ago that a hardworking doctor alone is not able to make things better under the current situation of health care. Thus, he started the *Journal of Thoracic Disease* in 2009, committed to bringing the Chinese academia on the global stage. He is a proponent of new media platforms in the hope that doctors' efforts will be more easily recognized and honored by the public. It is beyond his reach to overcome the staff shortage challenge in a short term, so he keeps thinking how to improve efficiency and how to better use the existing resources. He never ceases innovation. His

original "3Hs" pattern of administration and tubeless theory optimizes work flow and administrative procedure, so as to expedite clinical and academic work.

In his "administrator mode", Prof. He usually does not give direct orders. *"His mind is very active. If he has a sentence of ten words to say, he would only utter five of them. You have to figure out the rest by yourself."* He'd rather point a direction and let his man think proactively to grasp the "principal contradiction" before he acts. He cares more about the final outcome than the process, that is, *"whether the principal contradiction is effectively solved."*

For example, the glass-less three-dimensional system was developed due to the various inconveniences of three-dimensional glasses. Holding the glasses to their correct place is a basic task for almost all circulating nurses. It not only interferes with surgical process but also causes conflicts between surgeons and nurses due to the nurse's improper placing of glasses. Seeing all of this, Prof. He blamed the mess on glasses. *"When he hears a complaint, he'll keep it in mind and try to figure out a solution to the problem. No matter how trivial it is, he'll notice and fix it. He never hunts down who complains or punishes him or her. That is his magnanimity."* These words are the unanimous comments of his close colleagues.

Part 4: work with philosophical thinking

"Do you know the 80/20 rule?" Prof. He asked the meeting staff during the 1st Chinese Multidisciplinary Summit on ERAS & Tubeless.

Between the end of the 19th century and the beginning of the 20th century, the Italian economist Vilfredo Pareto noted the 80/20 rule. He believed that, for many events, roughly 80% of the effects come from 20% of the causes. The rest 80% of the causes are unimportant despite their larger proportion. This rule is widely applied in sociology and business management.

Prof. He could not agree more with the rule. He said at the summit, *"A good doctor can do most of his clinical work. An excellent doctor is able to complete more demanding missions in addition to his clinical work. But to be a doctor that deserves to be addressed as a scholar, you must have your own goal and bottom line, prospective vision, aspiration for innovation, determination to benefit patients and courage to become one of the few outstanding surgeons. Only then can your academic energy glow in the 80% objection."*

"You have to know how to think philosophically." Prof. He always emphasizes this mindset with his team sincerely and earnestly. His vision reaches far beyond where



Figure 1 Prof. Jianxing He.

ordinary people can see, because he always thinks and acts philosophically.

The real Jianxing He

When asked about her everyday impression of Prof. He, Run Li, a nurse in the Department of Thoracic Surgery, frowned slightly, looked straight and said with in a firm voice, “I think he’s like a spinning top. He’s always spinning and spinning every day and never stops. I recommend a song to him once, *Spinning Top* by Jian Li, performed on the show ‘I’m a singer’. I’m not sure if he’s ever actually listened to it.”

On weekdays, Prof. He works as a spinning gyroscope that never stops. To quote from the lyrics of *Gyroscope*, “it spins on the cultivated fields, dances with the wind and the fragrance of flowers, skates on the frozen lake and enjoys its life no matter how lonely, cheerful and tearful it is. That is its burning life...”

Before a major surgery, e.g., his first cardiopulmonary transplantation, he would go for a walk in the park for one or two hours. He would go over the surgical procedure in his mind and calm down, before going to the operating room in FAHG MU. This is a habit unique to surgeons, or in other words, a ritual.

On weekends, Prof. He is busy with various meetings. He had to set off early in the morning for Zhuhai to address the Founding Congress of Thoracic Surgery Committee, Chinese Medical Education Association, which invited him as the Honorary President (Figure 1). He managed to spare an hour for an interview with AME after the speech. After that hour, he frankly said that he was too tired and took a nap in his seat. We knew that he had to go to Macau to mentor surgeries after lunch. It was Saturday, a day when

people don’t have to work. And he just performed a major surgery the day before and went to bed late at midnight.

Perhaps this is the real Jianxing He. He has to work around the clock like other clinicians. He is not omnipotent and he gets nervous before major surgeries. He doesn’t have limitless energy. He gets tired too and needs to rest.

In spite of his busy schedule, Prof. He answers all our questions and presents a wonderful interpretation of nursing care in the setting of early recovery after surgery (ERAS) during in the interview.

Conversation with Jianxing He

The new demand of ERAS

JTD: ERAS has been growing for a while. Would you like to share your latest comment on this topic?

Prof. He: In the past, our goal of minimally invasive surgery was to bring about faster recovery of patients. But we only focus on the intraoperative process. In fact, preoperative and postoperative interventions are also very important. The patient’s recovery is a comprehensive process, while surgery is just part of it. So now we are talking about “Minimal invasion + enhanced recovery throughout your care”, which is another version of ERAS. With our new concept, we hope that the patient’s pulmonary function will be better than that before treatment and even better than before the onset of disease.

JTD: You said that your goal is to restore the patient’s pulmonary function to better than that before treatment and even better than before the onset of disease. Do you think this goal is hard to achieve?

Prof. He: It is hard, of course. For patients with irreversible pulmonary diseases or whose lung tissues are partly removed, the idea of getting their pulmonary function even better than before the disease is theoretically impossible to many clinicians.

From the view of internal medicine, Academician Zhong (Nanshan Zhong) conducted a study of early intervention of chronic obstructive pulmonary diseases (COPDs) and found that after 2 years of intervention on COPD patients, their pulmonary functions did not improve at all, because physical changes had occurred to their airway, featuring thickened bronchial walls or airway collapse resulting from sustained inflammation. At the end of the day, these are structural changes, and symptom can only be relieved by long-term medication. Back to surgery, when we say we want to improve these patients’ pulmonary functions, people also think we’re crazy. The patient’s lung has been

removed, how can his pulmonary function be better than before? That is why some people question the possibility.

JTD: Why do you choose this impossible topic? Would you please explain how you can make it possible?

Prof. He: First we have to know that there's a natural disease course going on before the patients seek medical help due to difficulty breathing. They don't know where the problem is. When they come to us, we may find out that they have airway diseases, interstitial diseases or they just get fat. And we know that pulmonary function and cardiac function are both relative values, not absolute values, which are affected by a number of factors. For example, if I reduce a patient's weight by 10%, his pulmonary burden will decrease by 10%. If I remove 10% of a patient's lung tissues but the patient loses 10% weight and gains additional 10% pulmonary function through rehabilitative exercise, he or she will still have an extra 10% pulmonary function. If we take into account the perioperative nursing care of airway, use bronchodilators and expectorants, we can have 20% improvement. That way we'll have a better pulmonary function.

Therefore, considering the current patient needs, we hope to not only cure the disease, but also provide patients with a comprehensive recover under maintenance treatment. Thus, they are able to enjoy a longer life.

Nursing care of airway in the setting of enhanced recovery after pulmonary transplantation

JTD: What's the influence of ERAS on lung transplantation?

Prof. He: Allow me to quote Academician Chen Wang. The indications for lung transplantation in China are in desperate need of change. In many cases, lung transplantation shouldn't be reserved as a last resort when nothing else will work to save the patient's life. He believed that when medication fails and the patient's quality of life shows no improvement, lung transplantation should be considered. The success rate of the surgery can be greatly increased only in this way.

JTD: And what's your opinion?

Prof. He: I totally agree. We've done it on more than 40 such cases. And we're going to further expand the indications. However, there are several major barriers in the development of lung transplantation in China.

One issue is the conventional belief strongly held among Chinese people. For example, it will still take a long time for ordinary Chinese people to accept organ donation. That's the problem on the donor side. And we also have a

problem on the side of recipient. In the past, the Chinese thought a suffering life is better than a peaceful death. But as time moves on and we are out of poverty, we have been striving for better quality of life. At this very moment, Academician WANG made the appeal from a high level that indications for lung transplantation in China should be changed. We should not wait until the patient is terminally ill to propose lung transplantation. For example, we may as well suggest lung transplantation when the patient has difficulty breathing when he goes to the bathroom, instead of letting him suffer every day.

My second patient to receive lung transplantation really impressed me. After his tubes were removed and he was able to eat, he had a bowl of soup and told me, "*The soup is sweet and delicious.*" I was confused. As a patient, he must have had a lot of chicken soup before surgery. Why did he feel the soup was especially sweet after surgery? He answered, "*Before surgery, I had to stop to catch my breath at every take of soup. I could barely taste whether the soup is delicious.*" Because his difficulty breathing has obscured his sense of taste.

I then realized that difficulty breathing is very intimidating to human. Our fear of swimming comes exactly from the fear of suffocation the ensuing distress. It is the fear for impending death. That is when I started to wonder why can't we choose lung transplantation when the patient's other organs are still fine?

JTD: I believe that's still a long way before the indications of lung transplantation can be changed. Can you tell us what we can do before surgery at present?

Prof. He: The current indications of lung transplantation are end-stage pulmonary diseases, in general. Pulmonary fibrosis is a common type of such diseases that features a sudden rapid progress. Towards the end of compensatory stage, the disease knocks down the patient immediately. It is so quick that we do not have much time to do anything. After all, you can't just do lung transplantation right away without adequate preoperative preparation of patient management and waiting for a matched donor.

To make things worse, we have fewer donor lungs than other donated organs. First and foremost, the lungs are vulnerable to infection due to direct communication with the external environment. Secondly, being semi-parenchymatous organs and sensitive to disturbed fluid balance, lungs are susceptible to edema. Therefore, we recommend that when lung transplantation is clearly indicated, it should be done as soon as possible. The longer you wait, the more dangerous it is for the patient.

One more thing, when lung transplantation is clearly

indicated, nursing care of the airway should be done for not only the recipient but also the donor. Only by proper donor airway management can we improve the success rate of surgery. This should have been done in many facilities that advocate donors.

JTD: A follow-up question on your emphasis on the nursing care of the donor's airway: what are other important aspects in the perioperative airway nursing care?

Prof. He: The first thing to do is to change our mindset. People should regard nursing care of airway as an important step. Here's an example. After transplantation, the patient's lungs are just like those of a newborn baby and need meticulous care. A child has to be at least 5 years old to go to school, and it takes 5 years' meticulous care after lung transplantation. Why did so many newborn babies die at an early age before 1960s in China? Because we had limited resources, including nutrition, protection and so on. And now we have a much higher survival rate of the newborn, thanks to neonatal nursing.

Similarly, when the patient has a completely new respiratory tract and a completely new lung, there is always a long period of rehabilitation and nurturing. It is a protracted war that takes the collaborative efforts of doctors, nurses and family care givers.

Secondly, when it comes to the nursing care of airway, everything is important. Doctors must see the greater picture and try to optimize airway through physical or chemical interventions. Physical interventions include percussion and postural drainage, while chemical interventions include antibiotics, corticosteroids, bronchodilators and mucous solvents, which are common medications for airway management.

Thirdly, nursing should be provided in a comprehensive way, both locally and systemically. Whether a patient receives unilateral or bilateral grafts, other organs of this patient might have been affected or even injured from compensating for the impaired pulmonary function. Therefore, we should not look at the surgical site only, whether it is unilateral or bilateral transplantation. Always remember to provide both local and systemic nursing care.

An outlook on precision medicine

JTD: A follow-up question on the comprehensive nursing care, involving both local and systemic, does this idea come from precision medicine?

Prof. He: Precision medicine mostly comes from the idea of targeted therapy. Since the emergence of targeted

therapy, we have noticed improved treatment outcomes and fewer adverse effects. So we gradually go from practicing targeted therapy to expecting the era of precision medicine. However, we are speaking of it too much. If you think of it as "thinking differently in each specific situation" before you actually do something, then everything is precision medicine. That is why people are confused about the real definition of precision medicine. But the good thing is, when precision medicine is brought up, health care professionals are coming up with such advancements. The idea of combined local and systemic treatment is one of them.

JTD: Can you give us an example?

Prof. He: For example, in the field of lung cancer surgery, targeted therapy now has "precision medication", originated from sequencing. Now we have next-generation sequencing with better precision. However, the rate of positive EGFR gene is about 30%, which cover only a small population. But targeted therapy is only part of our treatment choices. Alternatives include surgery, immunotherapy and so on.

As a result, many experts suggest a combination of precision surgery and precision medication, taking the advantage of both local and systemic treatment. According to them, the current ideal strategy of lung cancer is minimally invasive surgery and targeted therapy, or minimally invasive surgery and immunotherapy. This is a result of combining the two ideas.

Specifically, if there's only a single tumor, surgeons should try to remove the tumor as completely as possible, to reduce tumor burden and heterogeneity. The residual tumor cells can be treated by long-term and systemic therapy, such as immunotherapy or chemotherapy, to extend the patient's life.

On the other hand, when there are multiple tumors, we can use targeted therapy first to eliminate the responsive tumor. For those that don't respond or become drug-resistant, local approaches are applied, such as surgery, or radiotherapy, or RFA.

This is my idea of combination of precision medication and precision surgery. How to better combine and promote them to give our patients more benefits has yet to be discussed.

Epilogue

A heavy sword without blade point, with the most profound power.

Artwork having no trace of craft, where simplicity brings superiority.

Guided by both Confucianism and philosophy, clinical practice is both scientific and benevolent.

Above all, he is the best example of subtle strength.

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Footnote

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