Prof. Gwo-Chin Lee: exploring new techniques and approaches in hip and knee surgery

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Prof. Gwo-Chin Lee, associate professor of Orthopaedic Surgery at the Presbyterian Medical Center of Philadelphia, is a well-known surgeon who has contributed a lot in the research of THA (total hip arthroplasty) and TKA (total knee arthroplasty). We are honored to know more about his work via this interview conducted in the 12th International Congress of Chinese Orthopaedic Association held in November 2017.

Prof. Lee said, "*My research in total hip arthroplasty and total knee arthroplasty are quite variable. They range from techniques to the outcomes or even the medical economics associated with practices and efficiencies. I think we need to concentrate on finding out what actually makes a difference in terms of outcomes, successes and failures. For instance, the techniques or the most common ways to efficiently and cheaply deliver care in terms of hip knee replacement.*"

Prof. Lee keeps exploring and evaluating new techniques. He said, "*Honestly, I am a little bit conservative in my willingness to adopt brand new techniques unless it really fulfills a need in my practice. I particularly like to see that the techniques have been proven or safe for patients and implants have a good track record before adopting it. Yet, I always have the curiosity about what is being done in my field. I will always try something new and carefully look into it before I widely adopt it.*"

Nowadays, kinematic alignment in TKA is under the spotlight and controversial. Prof. Lee explained the differences between kinematic alignment and mechanical alignment during the interview.

Mechanical alignment knee replacement is the way we were taught how to do a knee replacement and the way we have been doing the knee replacement for 40 years. Unfortunately, although the technique is very good and effective in relieving pain for most patients, it does not reproduce normal knee functions for all. There is about 20% of patients who feel their knee is not natural and they are not satisfied with it after the surgery.

The theory behind kinematic alignment is a completely different story. It throws out some of the dogma of mechanical alignment, in terms of rotation alignment, ligament balance and tries to put a knee, a prosthesis in the soft tissue envelope of a particular patient without any significant ligament releases. The early data is that small deviations from mechanical alignment does not affect the long-term outcomes and it may actually be more tolerated by patients, which means that there is some merit to the kinematic alignment method. However, the precise target and the precise boundaries on which patients it can be done on safely remain to be defined.

As a surgeon, Prof. Lee shared his view on uncemented total knee arthroplasty with us.

Like many other devices on the market, it is no doubt that the improvements in materials and designs have made joint replacement become more reliable and durable than before. In the US, there is interest in uncemented TKA due to various factors including the fact that we like are attracted to the idea of biological fixation and we successfully made that transition in hip replacement. But I think that a hip is not a knee, and this difference is important to stress. Other factors like time and potential cost savings are peaking the interest of most surgeons in the US. This is fine, but it should not be the only driver of adoption of new technologies. At the end of the day, the patient's best interests should come first.

Prof. Lee made several presentations in the conference, including "Does the approach matter in THA—does it matter how you get there", "Fast track-is home the same day to fast", "Kinematic alignment—is it the new way to go" and "Cementless TKA—is it a game changer". We would like to know his opinion on the Chinese orthopedics. Are there any differences between the East and the West?

I think the level of certification for Chinese orthopedics continues to rise. China has invested a lot in education, which is a good way to bring up the standard in a very short time. I find that most people that I interact with are very interested in the literature. Personally, I am very impressed by the Chinese orthopedics surgeons.

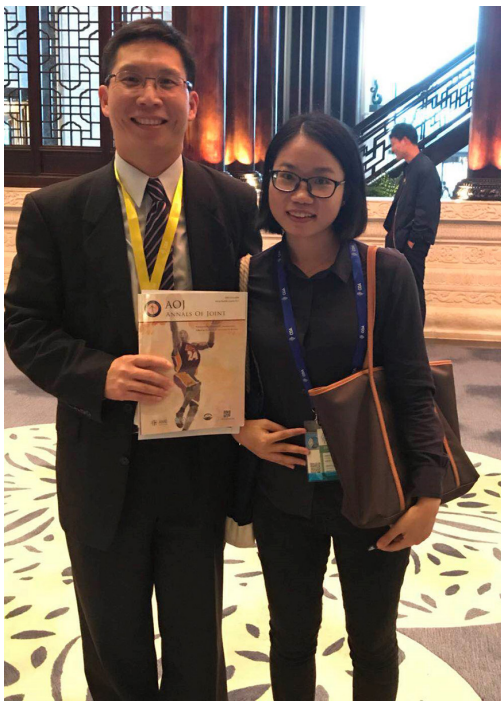

Figure 1 Picture with professor Gwo-Chin Lee.

In the US, the educational system and training-certification system are more standardized. As a result, the level of care is a bit more consistent among various orthopedic conditions. In China, there are different levels of hospitals and various training methods. Some combine traditional Chinese medicine with western allopathic medicine which is interesting. I do not see much disparity in terms of level of training and technology at the top hospitals in China compared to our medical centers in the US. China is becoming more prominent in the worldwide orthopedic world. It is a testament to their commitment to improving medical care.

Speaking of the countless achievements during his career, Prof. Lee stated, "*It is difficult to single out one particular achievement. Seeing the maturation of a young surgeon that you trained is a very special feeling. However, I think any recognition by your peers is a tremendous honor. For me, being elected into the membership of the American Hip and Knee Society was very meaningful because it was a recognition by my peers who specialized in THA/TKA. Many of the members have been my teachers and mentors who I looked up to and whom I tried to emulate. It was a great honor and extremely humbling. I am very thankful for many of the opportunities that I have received in my career.*"

As the saying goes, learning never stops. Prof. Lee had the following message to the young surgeons, "*I constantly learn new things. Everywhere I go even when I am invited to teach, I learn by interacting with the attendees. I sometimes gain new methods or ways of thinking about common problems that I encounter everyday that I never really thought about before. Often, those ideas can keep me stimulated and make me want to try new things. It is certainly a tremendous opportunity and honor to interact and learn from each other. Keeping an open mind, constantly asking questions and collaboration are really important to advancing orthopedic care*" (*Figure 1*).

Expert introduction

Prof. Gwo-Chin Lee is associate professor of Orthopaedic Surgery at the Presbyterian Medical Center of Philadelphia. He has special interest in TKA, THA, revision hip and knee arthroplasty, periprosthetic joint infections, surgery of the knee.

Interview questions

(I) We learned that you have made significant contributions in the research of THA & TKA. Could you briefly introduce the related research work you have done or you are doing now?

(II) Are there any new approaches or techniques are you approaching?

(III) What are the differences between Kinematic alignment and mechanical alignment?

(IV) Interest for uncemented TKA has greatly increased in recent years. What's your opinion on this technique?

(V) You participate a lot in this conference, and have several speeches. What's your opinion on the Chinese development in orthopedics? And what are the differences between China and the western countries?

(VI) You have won many grants and honorable titles in this field. Which one you are most proud of?

(VII) What would you like to say to the young surgeons?

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Footnote

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