Prof. Thorsten Walles: keep moving forward for the benefits of patients

Expert's introduction

Thorsten Walles (*Figure 1*) is a German general thoracic surgeon and professor at the University Hospital of Magdeburg. He is known for his works in the field of trachea surgery and his research for early diagnosis of lung cancer.

Prof. Walles works on regenerative medicine and tissue engineering research. Being a thoracic surgeon, he focused on the generation of bioartificial airway tissues for tracheo-bronchial replacement. His work resulted in the first clinical applications of bioartificial tissues for airway reconstruction. In their follow-up of these first transplanted patients, Prof. Walles and his coworkers demonstrated a post-transplant tissue-maturation process of the bioartificial tissues. Pioneering the translation of bioartificial human tissues into clinical applications, he dealt with the legal framework for tissue engineering and regenerative medicine in Germany and Europe. As a specialist in lung cancer treatment Prof. Walles could also demonstrate that lung cancer can be detected in the patients' breath. The objective of his ongoing research is the development of technical devices for lung cancer screening.

Editor's note

The 26th Annual Conference of European Society of Thoracic Surgeons (ESTS) was held in a beautiful small town, Ljubljana, Slovenia from 27th to 30th May 2018, celebrating the 25 years of constant presence, growth and strength in the Thoracic Surgical Fraternity. With its comprehensive and educational program, the conference attracted a great many renowned thoracic surgeons worldwide as usual. Among them was Prof. Thorsten Walles, from the Magdeburg University Hospital.

During the conference, the Editorial Office of *Shanghai Chest* had the great honor to interview Prof. Thorsten Walles, sharing with our readers his story about the

Figure 1 Thorsten Walles.

Figure 2 Photo with Prof. Thorsten Walles.

generation of bioartificial airway tissues for trachea-bronchial replacement and his perspective for the lung cancer screening. Moreover, Prof. Walles also told us his opinion for the artificial intelligence application in the medical field (*Figure 2*).

Looking back to the story of generation of bioartificial airway tissues for trachea-bronchial replacement, Prof. Walles shared with us his experience as a cardiac surgeon at the beginning and then changed to be a thoracic surgeon.

Figure 3 Interview with Prof. Thorsten Walles (1).
Available online: http://www.asvide.com/article/view/26078

The research of bioartificial airway tissues came from a problem in thoracic surgery when operating on patients with excessive tracheobronchial damage. After noticing the problem, Prof. Walles has spent a couple of years with a team of scientists studying tissues and materials for reconstruction of tracheal defects and finally came up with their own idea of what to use. During the interview, Prof. Walles also shared two important aspects of tissue for tracheal reconstruction: one is vascularization of the tissue and the other is the artificial epithelial lining.

Speaking of the challenge as a scientist as well as a surgeon, Prof. Walles shared his experience of a surgeon meeting patients with problems that could not be overcome with the established surgical techniques. On the other hand, what pushed him to overcome these problems was exactly the patients who came to him for treatment. In this context, Prof. Walles emphasized the importance of informing patients of what's going on with their disease and the available treatment choices, so as to let them know the reason of applying new technique into the treatment.

With the rapid development and wide application of artificial intelligence in the modern society, Prof. Walles shared his positive view for its application in medicine in the future. On the other hand, Prof. Walles also told that as intelligent it might be, artificial intelligence could not replace doctors considering the truth that empathy and trust between patients and doctors are important for the treatment and hard to be realized via technology.

As a specialist in lung cancer treatment, Prof. Walles also share with us his research on the lung cancer screening as well as its future development. For more details, please check the following interview video (*Figure 3*)!

Interview questions

(I) We know that you work on regenerative medicine and tissue engineering research and focus on the generation of bioartificial airway tissues for trachea-bronchial replacement, which resulted in the first clinical applications of bioartificial tissues for airway reconstruction. Here would you briefly introduce this research? How does it clinically applied to the airway reconstruction?

(II) What would be the challenge when you do this research and what keeps you to move forward all the time?

(III) We know that you also work on the development of for lung cancer screening. Here would you like to introduce what are the most commonly used technical devices for lung cancer screening nowadays? Which aspects you think should be improved?

(IV) Where do you see the lung cancer screening is going in the next five to ten years and how will that affect patient care?

(V) As a thoracic surgeon that is also working on the new devices and technology, here may I ask your opinion about the artificial intelligence? How do you feel its influence on the medical world in the future? Do you think it will replace doctors in the future?

Acknowledgments

Footnote

References

1. Gao S. Interview with Prof. Thorsten Walles. Asvide 2018;5:636. Available online: http://www.asvide.com/article/view/26078

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