

Transcatheter Valve Fellowship, Herzzentrum, Universität Leipzig, Leipzig, Germany

July 2007-January 2008.

Thank you very much for giving me this wonderful opportunity over this past year. This was a highly specialized and unique fellowship opportunity in transcatheter valve therapy from a world expert centre with a wealth of experience. This fellowship would not have been possible without the support of Professor Fontan and the EACTS Award Committee. The experience gained has been invaluable and will certainly have a long lasting impact for my patients and my career. I have summarized my experiences in Leipzig under the following three headings:

Clinical Goals & Accomplishments

The main goals of my fellowship were to learn about transcatheter valve therapy, including preoperative care, patient selection and screening, intraoperative techniques of transfemoral and transapical valve implantation and postoperative management. I was very fortunate in having the opportunity to participate in 30 clinical cases and 30 research laboratory cases of transcatheter valve implantation during my time in Leipzig. The experience was all encompassing, including both transfemoral and transapical techniques, with several different types of prostheses. As an active team member, my opinion was valued and I contributed to the refinement and optimization of the perioperative care for these patients. I learned invaluable lessons about the pitfalls and complications of these novel techniques from the excellent Leipzig transcatheter team, whom demonstrated exquisite wisdom and knowledge in this emerging field, but also showed exemplary interpersonal and team dynamics. This unique relationship between cardiac surgery and cardiology in Leipzig is quite remarkable and serves as a wonderful example that has clearly bolstered their early successes in this field. I had received excellent training in all the perioperative/periprocedural aspects to transcatheter valve therapy and with this training, am well poised to develop a new program in transcatheter valve interventions.

Academic Goals & Accomplishments

This was a very fruitful academic fellowship that allowed for the development of some research ideas and ultimately resulted in presentations, publications and future ongoing research endeavours. I was able to participate in the reporting of some very important landmark clinical case series from Leipzig, which are listed below, in addition to assisting with some of the early summative literature on transcatheter valve technology. I was also involved in many different research projects related to transcatheter valve therapy which included:

- Laboratory testing of new, experimental transcatheter devices
- Investigating short and intermediate term outcomes of transapical AVR
- Developing an endoscopic and robotic transapical approach
- Valve in Valve Concept
- Investigating transatrial approach for VinV

Utilizing my previous experiences with robotic and endoscopic cardiac surgery, I had taken the lead role over developing a percutaneous transapical approach to transcatheter valve implantation. I had successfully tested these techniques in an animal model which will soon be submitted for

publication. We are considering this concept for potential human application in the near future. In addition, I had played a major role in the development of the Valve in Ring technique which we will be demonstrating this year's Technocollege prior to the upcoming EACTS meeting in Lisbon, Portugal.

Publications:

- Walther T, Chu MWA, Mohr FW. Transcatheter Aortic Valve Implantation: Time to Expand? *Curr Opin Cardiol* 2008;23:111-116.
- Walther T, Falk V, Kempfert J, Borger MA, Fassel J, Chu MWA, Schuler G, Mohr FW. Transapical Minimally Invasive Aortic Valve Implantation – the initial 50 patients. *Eur J Cardiothorac Surg* 2008;33:983-8.
- Kempfert J, Blumenstein JM, Borger MA, Linke A, Lehmann S, Pritzwald-Stegmann P, Chu MWA, Schuler G, Falk V, Mohr FW, Walther T. Minimally Invasive Off-Pump Valve-in-a-Valve Implantation – the Atrial Transcatheter Approach for Re-operative Mitral Valve Replacement. *Eur Heart J*, e-published June 2008, in press.
- Chu MWA, Borger MA, Mohr FW, Walther T. Transcatheter Heart Valve Replacement: Current Update. Revisions submitted.
- Walther T, Borger MA, Kempfert J, Chu MWA, Fassel J, Rückert Y, Ender J, Linke A, Schuler G, Falk V, Mohr FW. Transapical Aortic Valve Implantation at One Year. Submitted to *Circulation*, Nov 2007.
- Chu MWA, Walther T, Kempfert J, Blumenstein J, Kobilke T, Pritzwald-Stegman P, Falk V, Mohr FW. Percutaneous Endoscopic Transapical Aortic Valve Implantation: An Experimental Transcatheter Model, Pending submission.

Presentations

- VÁLVULA PERCUTÁNEA AÓRTICA TRANS – CATÉTER: Trans-FEMORAL & Trans-APICAL. Presented at **Hospital General de Valencia, Grand Rounds, Valencia, Spain, November 29, 2007.**
- Transapical Aortic Valve Implantation: Current Update. Presented at the **Portuguese Society of Cardiovascular and Thoracic Surgery Annual Meeting, Albufiera, Algarve, Portugal, December 1, 2007.**
- Endoskopische Transapikal AKI. Presented at Morgenbesprechung, Herzzentrum Leipzig, Leipzig, Germany, Decemeber 14, 2007.

Personal Goals & Accomplishments

This has perhaps been the most rewarding and certainly some of the most valuable experiences gained from my Fontan Award Fellowship. In Leipzig, I had the opportunity to work with many very talented but friendly individuals including Professors Mohr, Walther, Falk, Borger and Battellini. I was welcomed with open arms and readily accepted by all at the world class Herzzentrum. Professor Mohr was an excellent role model, demonstrating superior operative skills, but also an amazing ability to balance and excel at all his patient care, academic and administrative responsibilities. My direct supervisor, Prof. Thomas Walther was an exceptional mentor, teacher,

colleague and friend. He was always conscientious of my educational experience, involving me in all aspects of transcatheter valve therapy. In addition, he was very encouraging and supportive of my research endeavours, including securing funding and equipment necessary to complete my projects. Thomas was an excellent role model and I am privileged to have had the opportunity to train with him. I will be forever grateful to the wonderful experiences that he provided for me. I also enjoyed the opportunity of learning the German language, both from a formal deutsch course and all the 'sprachenpartner' that I had in Leipzig as well. I have fond memories of many individuals and developed many long lasting friendships in Leipzig, that I will truly value as well.

I am forever grateful to Professor Fontan and the EACTS Awards Committee for selecting me as the recipient of this prestigious award. I am also very grateful to Professors Thomas Walther and Friedrich Mohr, for providing me with such a wonderful experience that has shaped my career and made me a better surgeon. I am proud and honoured to have trained in Leipzig.

Best regards,



Michael Chu, MD, MEd, FRCSC