



The Hybrid Cardiac Surgeon: Way to go or waste of time?

Hibrid Kalp Cerrahi: Gidilecek yol mu, vakit kaybı mı?

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Transcatheter therapies in structural heart disease are on a rise, since the first transcatheter aortic valve implantation (TAVI) in 2006. Numbers of TAVI have overtaken the number of conventional aortic valve replacements in certain countries in Europe, for example in Germany, where it was performed for the first time in 2014.^[1] This trend will keep going, particularly as recent prospective, randomized trials conducted by large-scale pharmaceutical industries showed non-inferiority for TAVI even in patients with a low calculated perioperative risk profile.^[2,3] Similar developments can be observed in the field of mitral valve disease, *albeit* with less impact on cardiac surgery. However, the results of the latest prospective, randomized trials are contradictory.^[4,5] These developments changed the field of cardiac interventions tremendously within a very short period of time. The cardiac surgical society has to react on this. Cardiac surgeons must involve themselves in transcatheter techniques, as they are partner in the heart team at all. It may even be the time to develop a new professional profile: The hybrid surgeon. Indeed, this mainly means to be a strong and competent partner in the heart-team, discussing and treating patients on a level playing field. Few basic skills are of utmost importance to succeed:

- Profound surgical training

The participating surgeon must have the skill set to competently react on typical severe complications during TAVI procedures, for example aortic annulus ruptures. It is not helpful to place a youngster in the

hybrid operating room who would call a senior surgeon to react on such complications. This undermines the acceptance of the surgical unit in total.

- Knowledge of the literature

This mainly necessitates to have knowledge of the latest literature. Although it is difficult as there is a huge amount of published papers available, at least the landmark trials have to be a common knowledge.

- Basic skills in procedure planning

Imaging is key in transcatheter procedures, particularly for planning purposes. Therefore, it is useful to dive a little deeper into computed tomography planning tools to be able to discuss the findings in the heart team. This needs a little effort, but the time consumption is reasonable and worth to be invested.

- Knowledge of the material

Several prostheses are available to perform TAVI procedures. A surgeon participating in transcatheter procedures must have the knowledge of the main advantages and disadvantages of each prosthesis.

- Basic wiring skills

Some basic wiring skills are very helpful to be able to perform transcatheter valve procedures. In particular, different closure devices should be familiar. To learn how to use them, it is very helpful to have a good connection with the cardiologists in the team.

With this armamentarium, a surgeon is a competent partner in the heart team and able to perform TAVI procedure himself/herself, overcoming the situation to be just a bystander. It is not impossible to acquire the

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aforementioned skills, if there is a good cooperation within the team and if the participating surgeon has some interests in transcatheter procedures, which should be the case in the rapidly changing field of treatment options in valvular heart diseases.

There is a growing number of literature which can be found in publicly available databases and platforms such as MEDLINE. A lot of video tutorials can be found to prepare for the participation in TAVI procedures. Of note, professional societies and industry also provide offers for education. Participation in dedicated conferences such as the Transcatheter Cardiovascular Therapeutics (TCT) or transcatheter valve therapies-the Structural Heart Summit meeting are good opportunities to get an overview of ongoing developments and also for networking.

Furthermore, it is necessary that basic catheter skills are implemented in the surgical education for trainees in the field of cardiovascular surgery. For instance, performing a pacemaker implantation may be a necessary skill which can be easily grasped. Additionally, there should be agreements between the surgery and cardiology departments to exchange trainees. A rotation to the cath lab is a part of the surgical curriculum. On the opposite site, a rotation to the conventional operating room is very helpful for cardiological trainees. This also leads to a better understanding of the content of daily work of the partner subspecialty and to a growth of expertise and knowledge within the team.

In conclusion, cardiovascular surgeons should actively participate in the field of transcatheter

treatments for valvular heart disease, as they are traditionally the experts in the field. Only if all members in the heart team are on an equal footing, decisions are unprejudiced. This is a necessary prerequisite to decide for the most optimal treatment option for every individual patient.

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