

TEVAR- Thoracic Endovascular Stent Graft

Snezana Medakovic

Specialist scrub nurse, Institute for cardiovascular diseases, Dedinje, Serbia

Corresponding author

Snezana Medakovic, Specialist scrub nurse, Institute for cardiovascular diseases, Dedinje, Serbia. E-mail: smedakovic@yahoo.com

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Surgical care, respectively health care started with the first step in hospital us patient and client. All people who working in hospital where is surgical dominant medical branch, it will tell you that it is the only exact part of medicine, for this opinion have the simple explanation, medical team see problem and try to find the best solution for patient.

Since many different levels surgical care:

- preparation patient for diagnostic procedure,
- preparation patient for surgical procedure,
- surgical care in intensive care units,
- surgical care in units of semi-intensive care,
- department of surgical care

Specific surgical care, it takes place in the operating room, or in specialized theater rooms where hybrid procedures are performed. Scrub nurses are elementary part of every surgical time, they must know everything about the surgical procedure, habits and needs of a surgeon, about equipment. Necessary surgical stich and prosthetic material.

The possibility of reconstruction also implies the application of the prosthesis as an imitation of the part of the organs and has a functional role. Hybrid procedures aren't a new in vascular surgery, the endovascular aneurysm repair to the western world and performed the first successful endovascular repair of an abdominal aortic aneurysm in 1990. Medical scientist every day evolves and progresses, medical workers must to educate and to lead every new step, because that is of life-importance for our patients and users.

Surgery is branch of medicine and the primary role is to help and to reconstruct the diseased part. Cardiovascular surgical every day, every month recording new procedures or techniques in the treatment of aortic diseases. The goal of these surgical procedures is helping the patient, reduce costs, and reduce stay in intensive care, allows the patient to continue a normal, successful life.

Surgery relying on medical science establishes reconstructive imitations of the function of organs that are not in the artificial. Reconstructive imitation of the function is achieved by using tissues and parts of organs and prosthetic material. The possibility of reconstruction also implies the application of the prosthesis as an imitation of the part of the organs and has a functional role.

TEVAR- thoracic endovascular stent graft

When we are talk about the pathology of the aorta, we need to know what are the basic pathological changes which require hybrid procedures.

- traumatic aortic dissection/transection
- acute/chronic aortic dissection
- degenerative aneurysms

Hybrid procedure-graft stenting treatment for descending thoracic aortic, the data indicate good results and has a high survival rate. It is essential for nurses who work in hospital for cardiovascular disease on all departments' settings to have knowledge of this procedure and potential complications associated with the procedure to enable postoperative assessment and immediate action if any deviation is observed.

The essence of this procedure is the placement of an endovascular stent graft by the preparation of the femoral artery in an aneurysmically thoracicaltered aorta, which then intraluminal expands and excludes aneurysm from the circulation. The significance of this hybrid procedure the patient is not exposed to long-range anesthesia and an extensive surgical procedure and improvement of health status is registered immediately after implantation of prosthetic material.

Thoracic aortic aneurysms are those that occur along the aorta above the diaphragm, the partition between the chest and abdomen, including the ascending aorta, the aortic arch, and the descending thoracic aorta. A thoracic aortic aneurysm is a bulge in the aorta which can cause the aorta's diameter to balloon to several times its normal size. Such a change in the arterial blood vessel, it can lead to rupture and to fatal bleeding, which naturally leads to the unwanted outcome for our patient.

After diagnostic procedures, made the choice of endovascular stent graft, because is very important adequate diameter, size and length of graft.

Diagnostic for this procedure have a few phases:

- Phase I:** is a physical and auscultatory examination of the patient
- Phase II:** ultrasonography, the method is non-invasive, fast, cheap, harmless and comfortable for the patient
- Phase III:** Computerized tomography -CT-gives a good overview of the situation in the state of the arteries, and in the eventual presence

of vascular anomalies

Phase IV: MS- CT angiography, MSCT angiography is the most accurate method in diagnostics, it is non-invasive, and it gives an excellent insight into morphology

This hybrid procedure is recommended for patients with comorbidity:

- Heart disease
- Hypertension
- Diseases of the lungs-chronic obstructive pulmonary disease-HOBP
- Renal insufficiency -HRI is a significant risk factor which can lead to complications after surgery
- Diabetes -DM
- Hematological disorders

Indications

- Thoracic aortic aneurysm,
- Traumatic aortic transection
- Aortic dissection,
- Ruptured thoracic aneurysm
- Mycotic aneurysm

Advantages

- Minimally invasive surgery
- Reduce major morbidity
- Reduce blood loss/transfusion
- Less time than open surgery
- Reduce hospitalization stay
- Quicker return to normal life

TEVAR is a hybrid procedure which means that a multidisciplinary approach is required.

The standard members of this team are

- vascular surgeons
- scrub nurse
- circularscrub nurse
- invasive radiologist
- scrub nurse for invasive radiologist procedure
- X-raytechnician

In hospital where I work, usually this procedure is conducted in the X-ray department in hybrid operating room.

Scrub nurses on the first place have responsibility in the preparation of stitch, instruments and accessories for this procedure such as thermocautery, aspirator.

After preparation materials, scrub nurse with other team members participate in preparing a patient, which means disinfection of the operating field and using a sterile surgical dress.

TEVAR-the essence of this procedure is the placement of an endovascular stent graft by the preparation of the femoral artery in an aneurysmal altered aorta. Vascular surgeons and scrub nurse must be good team, because is necessary fast and efficient cooperation.

After finishing the preparation of the femoral artery, the vascular surgery team gives way to the renegade team. Under the guidance of X-ray, water is guided through the femoral artery which then intraluminal expands and excludes aneurysm from the circulation.

After control X-ray and good positioning of stent graft, the vascular surgery team performs inspection of the operating field, checking hemostasis and surgical treatment of the femoral artery. In the end, the surgical wound closes in layers. The significance of this hybrid procedure is that the patient is not exposed to long-range anesthesia and an extensive surgical procedure. Improvement of the health status is registered immediately after implantation of prosthetic material.

Statistical data of the Institute of Cardiovascular Diseases "Dedinje" for three years indicate an increase in these hybrid procedures.*

Table 1: (*data provided by vascular surgeons and X-ray department)

Year	EVAR	TEVAR	Total
2015	14	6	20
2016	17	8	25
2017	21	9	30

It's very important to say that unlike traditional open surgery, when the descendent aorta was repair standard recovery it lasts for several days in the Intensive Care and the recovery itself is very long. After TEVAR procedure patients leave the hospital very quickly.

Patients are given advice slowly returning to normal life activities. There is no restriction in daily activities, but there gave is definitely a recommendation to control existing co-morbidities.

The Institute for Cardiovascular Diseases "Dedinje" and the Clinic for Vascular surgery is one of the two largest centers for vascular surgery in Serbia. Every year, we perform more than 3000 arterial surgical and endovascular procedures and this hybrid procedure works as a standard for patients who need it. We believe that constant education of nurses is necessary to improve their knowledge and to enable us to provide as much care to our patients as is required [1-5].

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