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Retrospective analysis of stentgraft implantation in Department of Interventional Radiology and Neuroradiology of the 4th Independent Public Clinical Hospital in Lublin in 2016

Izabela Dąbrowska, Andrzej Wolski

Authors information and address for correspondence:

Izabela Dąbrowska MD, ORCID <https://orcid.org/0000-0003-1593-2284>, Department of Interventional Radiology and Neuroradiology, Medical University, Lublin, e-mail: nematoda@gmail.com

Andrzej Wolski MD PhD, ORCID <https://orcid.org/0000-0002-2968-0949>, Assistant Professor, Department of Interventional Radiology and Neuroradiology, Medical University, Lublin. e-mail: andrzej.s.wolski@gmail.com

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Abstract

Abdominal aortic aneurysm (AAA) is a localized enlargement of the abdominal aorta such that the diameter is greater than 3 cm or more than 50% larger than normal diameter. The abdominal aorta is the most common site of true arterial aneurysm affecting predominantly the segment of aorta below the renal arteries (intrarenal aorta). Well-defined risk factors are associated with the development of AAA and include older age, male gender, Caucasian race, a positive family history, smoking, the presence of other large vessel aneurysms and atherosclerosis.

A retrospective analysis of clinical data of the patients admitted to Department of Interventional Radiology and Neuroradiology of the 4th Independent Public Clinical Hospital in Lublin was made. 33,3% of the implantations were performed as an emergency and life-

saving procedures and also according to our results higher risks of developing AAA are in male population and that risk is higher in older patients.

Introduction

Abdominal aortic aneurysm (AAA) is defined as a localized enlargement of the aortic cross-section where the diameter is greater than 3 cm or more than 50% larger than the diameter in a normal segment. The abdominal aorta is the most common site of true arterial aneurysm affecting predominantly the segment of aorta below the renal arteries.

Well-defined risk factors are associated with the development of AAA and include older age (over 65), male gender, Caucasian race, a positive family history, smoking, hypertension, the presence of other large vessel aneurysms and atherosclerosis [1,2]

In men aneurysms occur in 4-8% and in 1-2% of women aged over 65 [3-5].

Usually the detection is incidental, and, in most patients, aneurysms are asymptomatic.

The most important complication of AAA is rupture, which, if untreated, results in mortality rates of up to 90% [2].

Open surgery was for over 50 years a gold standard. In 1987 Volodos [6] introduced an innovative method of endovascular aneurysm repair (EVAR) which was later promoted by Parodi [7]. Endovascular method is less invasive than open surgery and it's also related to lower early mortality rate and lower number of perioperative complications.

Like every method, EVAR has also its weak sides such as possible late complications. Those include endoleak, recurrent aneurysm formation, graft infection, migration, kinking and thrombosis. The total rate of complications after EVAR is estimated at approximately 30%, and the rate of complications that require intervention is 2–3% [8].

The aim of the current paper was the determination of how often the endovascular aneurysm repair was performed with special attention paid to the invasiveness of procedures in the Department of Vascular Surgery and Interventional Radiology of the 4th Independent Public Clinical Hospital in Lublin, Poland.

Material and methods

A retrospective analysis of clinical data of the patients admitted to Department of Interventional Radiology and Neuroradiology of the 4th Independent Public Clinical Hospital in Lublin was made. Patients with AAA and with endovascular stentgraft implantation during 2016 were chosen for the analysis. Age and sex of the patients as well as mode of the operation were extracted from the Department of Interventional Radiology and Neuroradiology database.

Results

In 2016, a total of 63 abdominal stentgrafts were implanted. The average age of the patient was $73 \pm 11,18$ years. From all the patients, only 14,23% (N=9) of the were females. 33,3% (N=21) of the implantations were performed as an emergency and life-saving procedures.

Conclusions

Due to developments such as extended life expectancy and increase in screening, annual incidences of abdominal aortic aneurysm (AAA) have been on the rise, and an annual mortality of over 10,000 deaths due to AAA has been reported from 2010 in the United States [9]. For these reasons, screening and early intervention are crucial to tackling AAA.

Surgery of any kind carries certain risks that vary from one person to the other, depending upon the patient's general state of health. The surgical risk for repair of AAA increases with age and the presence of other health conditions.

As examples, people who have other heart or lung diseases and people who smoke are more likely to develop complications such as pneumonia and irregularities in their heart rates after surgery. In addition, older adults are more prone to develop problems both during and after surgery.

A less invasive surgical procedure called an endovascular aneurysm repair (EVAR) has shown success in repairing AAA. It usually involves making an incision in the groin to expose the femoral artery, placing a wire in the vessel over which a variety of specialized catheters are used to pass a folded stent-graft to the area of the AAA.

We collected data from January 2015 till December 2015 from Our Departments Data base. The results showed that the emergency mode is less often performed comparing to the scheduled one. This may possibly be related to the higher awareness of the patients and a success of the screening tests campaign. Which is very important because among all the death-threatening diseases AAA are usually asymptomatic.

According to our results higher risks of developing AAA are in male population and that risk is higher in older patients. Among males aged between 65 and 80 years, the prevalence of AAA is 4 to 8 percent, though this may be decreasing [10].

Thus it's highly recommended to embrace male patients aged over 65 in screening tests such as abdominal ultrasound. Which could benefit in reducing overall death rates.

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