

STANDPOINT

by

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Internal member of the science jury
according to order: 476/19.12.2019

In the field of higher education 7. "Health and sports", professional direction 7.1 "Medicine" and scientific specialty "Cardiovascular surgery"

on the dissertation:

APPLICATION OF THE METHOD CLOSED ENDARTERECTOMY WITH DISTAL FIXATION OF INTIMA FOR FEMORAL ARTERY THROMBOSIS

by

Dr. ALEXANDER TIHOMIROV DASKALOV

Regarding procedure:

All the regulations of the Law for the Development of the Academic Staff in the Republic of Bulgaria and the regulations for its implementation in Acibadem City Clinic "Tokuda" Hospital Sofia for the acquisition of a scientific degree "Doctor" have been met.

I. Structure of the dissertation

The dissertation contains 156 pages, including 51 figures and 54 tables. 175 literary sources are cited, 4 of which are from Bulgarian authors and 171 from foreign authors.

The work includes the following sections: introduction, literature review, purpose and objectives, material and methods, results and discussion, deductions and contributions, conclusion and bibliography.

Dr. Daskalov has formulated 6 tasks and studied a statistically significant contingent of 137 patients with operated 141 limbs, made 8 conclusions, on the basis of which he has made relevant recommendations and contributions.

II. Relevance of the dissertation

The incidence of peripheral arterial occlusive disease (PAD) is between 3-10% in the general population and increases with age, i.e. it is a socially significant disease with relevant risk factors for

atherosclerosis, such as hypertension, diabetes, smoking. The superficial femoral artery is most commonly affected - in about 70% of cases. The clinical course of the disease is progressive and can lead to severe injury and disability of the patient. The treatment of these cases is challenging and has been the subject of a number of studies and innovations in technology and tools. Endovascular technique has been increasingly adopted, and is already used as a method of choice for milder and moderate degrees of occlusive lesions of the lower extremities. Femoral-bypass grafting remains the most commonly used treatment method for severe ischemia cases, with insufficient comparative studies and statistics to objectify the advantages and disadvantages of bypass surgery versus endovascular surgery in severe lesions with PAD. It is in this under-researched field where Dr. Daskalov's current dissertation work is positioned.

Closed endarterectomy with distal fixation of the intima is a combination of open vascular surgery and endovascular procedure. Only one vascular access is required, which determines that it is minimally invasive and feasible in patients with increased operative risk. Main advantages are: shorter hospital stay, a lower risk of intra- and postoperative complications and no need of prosthetic material. The existing literature data so far do not show sufficiently convincing data on the results of the application of this technique.

Therefore, in this context, the benefits of such a scientific work are even more clearly outlined, especially when it is well-objectified, sufficiently detailed and evidence-based, as in this case.

III. Analysis of the dissertation

In his study Dr. Daskalov aims to objectify the indications, advantages and disadvantages of using the method: "closed endarterectomy of the superficial femoral artery with distal fixation of the intima" in patients with severe PAD. The survey is retrospective, for the period 2009-2017 and comprises a contingent of 137 patients divided into two groups. The main group underwent a hybrid closed endarterectomy technique, and the control group underwent a proximal femoro-popliteal bypass with polytetrafluoroethylene (PTFE) prosthesis graft. The two groups are approximately the same size. The author has participated as an operator and as an assistant in both groups. A comparative analysis was made of the application of the two operating techniques using the appropriate statistical methods. The study results show that there is no statistically significant difference between the two methods in terms of initial success, primary and secondary patency, operative time, type of anesthesia, and overall survival. There is a lower risk of retrombosis in the closed endarterectomy group, a shorter hospital stay, a lower percentage of postoperative complications, mainly related to the minimally invasive method. The occurrence of restenosis is a major problem in patients who have undergone closed endarterectomy, and the risk of this complication is directly dependent on the indicators: mean vessel diameter and length of the thrombosed area.

Based on these results, the author concludes that closed endarterectomy of the superficial femoral artery with distal fixation of the intima is an effective and safe, minimally invasive procedure for the treatment of patients with severe occlusive lesions of the femoral artery. In addition to the proposed algorithm for the application of this operating technique, the main contributions are the

objectified independent risk factors for the occurrence of retrombosis, related to the average vessel diameter and the length of the femoral artery thrombosis, respectively endarterectomysed area. These contributions will lead to better preoperative selection of patients indicated for femoral revascularisation.

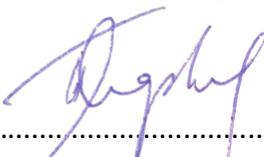
Dr. Daskalov has submitted three publications and has registered 5 participations in scientific forums related to the dissertation.

IV. Conclusion

The dissertation work of Dr. Alexander Daskalov represents an excellent completed research on a socially significant problem, related to the choice of an optimal therapeutic approach in patients with severe peripheral arterial occlusive disease. This work has the necessary qualities - significance, scope, originality and thoroughness. The conclusions and contributions of this dissertation should be presented and published in national and foreign scientific forums and journals, which would logically lead to their citation.

On the basis of the above, in accordance with our national and European criteria for quantity and quality, I recommend the honorable members of the scientific jury to approve the dissertation work of Dr. Alexander Tihomirov Daskalov, and to vote positively for its award with the scientific degree "Doctor" in the field of higher education 7. "Health and sports", professional direction 7.1 "Medicine" and scientific specialty "Cardiovascular surgery".

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/ Assoc. Dr. Peter Markov, MD /