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 The Journal of Cardiovascular Surgery 2018 October;59(5):755-6
 DOI: 10.23736/S0021-9509.18.10334-X

Current treatment of superficial femoral artery disease: a national survey

Despite recent publishing of the relevant AHA/ACC Guidelines,¹ the management of superficial femoral artery (SFA) disease is still controversial. In order to evaluate the current treatment of different lesions and different situations involving SFA disease, we collected the experience of the most important units of vascular surgery in Italy.

Fifty-four vascular surgeons from 42 different units of vascular surgery and 20 different universities of medicine (Supplementary Digital Materials 1, 2, online content only) were involved in the debate on the indications and treatment of the SFA disease. A questionnaire with 33 questions and multiple answers (ranging from 2 to 5) was submitted to the participants (Supplementary Digital Material 3, online content only). Eight questions were focused on indications and 25 on treatments of SFA.

The indications currently available in literature on the management of the SFA lesions are few and contradictory, and they are based on a low level of scientific evidence not allowing to draw clear recommendations.^{1,2} However, there is a certain degree of agreement among Italian surgeons on many aspects of this issues, and a consensus based on the results of this survey could be reached over some capital matters. The survey also highlights some problems which remain open for discussion, and further studies will be needed to address them.

The results confirm that many issues regarding the management of SFA lesions are still object of discussion among very different standpoints, but on some of them there was wide agreement among the significant majority of the surveyed surgeons, especially on the ones discussed in the first section of the survey (indications). One of them is the treatment of SFA lesions when associated with iliac or tibial lesions in a patient with claudication: in fact, from this survey, the tendency to treat the most proximal lesion first and then follow-up the patient for possible further treatment has been clearly assessed. This orientation is consistent with the few data available in literature, albeit incomplete.³ If the patient suffers from critical ischemia, the indications emerging from this survey are less clear, although we can say that there is wide agreement on the need to treat SFA and tibial vessels simultaneously in case of multi-vessel lesions. This is also supported by some studies pointing out the importance of downstream run-off for the prognosis of patient with critical limb ischemia undergoing SFA revascularization.⁴

Concerning the second section, the survey shows quite widespread consensus over the first-choice treatment of the different kind of SFA lesions: uncoated balloon (UCB) or drug-coated balloon percutaneous transluminal angioplasty (DCB-PTA) for focal and moderate stenosis and focal occlusions, PTA or stenting for moderate occlusions and long stenosis and surgical treatment for long and total occlusion. About this aspect, the most difficult therapeutic choice is between PTA and stenting in moderate occlusions and long stenosis, a matter on which the participants were almost evenly divided.

Also on technical aspects, the results of the survey allow to provide some indications which were shared by a great majority of the sample: ballooning time during PTA should be at least three minutes, and the size of balloons and stents should match the nominal size of the vessel. No consensus has been reached, instead, on whether the stent should cover the whole length of the lesion or only the site of recoiling dissection.

The problem of how to manage post-PTA dissections turned out to be one of the most controversial of the entire survey: in case of micro-dissection, a further low-pressure PTA should be performed, but there is no agreement on how to proceed if the procedure is not effective (watch-and-wait or stenting). In case of a flow limiting dissection, the options of low-pressure PTA followed by stenting if unsuccessful and bailout stenting are almost equally chosen.

We report high level of consensus on the matter of atherectomy, which should be associated with PTA or stenting and should be performed using proper devices of distal protection, and methods of pre-operative planning, which mostly relies on ultrasound and intraoperative angiography.

Concerning postoperative therapy, we recommend statins, regardless of the cholesterol levels, and double anti-platelet therapy, even if no consensus based on this survey could be established on its duration (one or three months). The disagreement over this issue could be due to the question itself, which made no difference between post-PTA and post-stenting therapy: many surgeons, in fact, treat them with different protocols.

About the management of complications, some clear-cut indications could be drawn from this survey, namely:

- to treat post-PTA and in-stent restenosis with DCB;
- to treat distal embolization with endovascular thrombectomy and thromboaspiration (or only thromboaspiration as the most reliable alternative option);
- to treat hematoma due to vessel rupture or perforation by endovascular balloon inflation (with or without external manual compression);
- to treat hematoma causing compartment syndrome by surgical drain

As for the correct choice of the access, the results of the survey point to an overwhelming prevalence of percutaneous over surgical access. Antegrade percutaneous approach is preferred, with or without echography guidance, though retrograde access is also widely used. Percutaneous closure devices are used only in selected cases, considering that many procedures are performed through antegrade access, for which most closure devices are out of instructions for use.

Overall, these results are extremely valuable in representing the current national situation in the management of the SFA disease, even if two main drawbacks should be taken into account: first, the number of the surveyed population and secondly the overlooking of DES and stent grafts which are being used with increasing frequency in treating long SFA lesions. However, almost all the answerers occupy chief position in each Vascular Unit, so their view can be considered as representative of a much larger number of surgeons. Moreover, most of the major Italian centers were represented, so that the survey provides a complete overview of everyday surgical practice across Italy.

Despite the limits mentioned above, this survey depicts many aspects of the current approach which is usually undertaken in managing peripheral arterial disease caused by SFA lesions. In fact, it has allowed to establish some widely shared indications and to point out some other aspects which are still matter of debate.

Among the latter, the topics which most deserve further investigations are the management of patient affected by critical limb ischemia and carriers of combined lesions of the iliac artery and the SFA, the management of post-PTA dissections and the duration of double anti-platelet therapy

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Conflicts of interest.—The study was supported by Medtronic Inc.

Article first published online: February 8, 2018. - Manuscript accepted: February 6, 2018. - Manuscript revised: February 5, 2018. - Manuscript received: November 26, 2017.

For supplementary materials, please see the online version of this article at www.minervamedica.it

(*Cite this article as:* Marone EM, Rinaldi LF, Argentero A, Chiesa R. Current treatment of superficial femoral artery disease: a national survey. *J Cardiovasc Surg* 2018;59:755-6. DOI: 10.23736/S0021-9509.18.10334-X)

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