

## LETTER TO THE EDITOR

**Subintimal Angioplasty in the Superficial Femoral Artery: A Real Long Term Option Demonstrated by Histology**

Lund *et al.* presented an interesting case of the histological analysis of superficial femoral artery (SFA) subintimal angioplasty (SIA), with an assisted patency of 10 years, explanted at autopsy. They provided the histological proof of neo-endothelialisation of the SIA track that was located in the medial wall.<sup>1</sup> Interestingly, a previous report described a histological analysis of a thrombosed SIA after two months. In their case the SIA track was located between the internal elastica lamina and the atherosclerotic plaque.<sup>2</sup>

The main finding in this report is the evidence of arterial wall remodelling and neo-cellularisation in a SIA track a decade after it was created; the authors showed different staining proving the neointimal endothelialisation, but also the remodelling leading to neo-atherosclerosis. Those results have been achieved by following the histological processing, meaning, cutting the sample, as shown in the report. Even if a larger number of specimens are needed to give a valid and robust conclusion, Lund *et al.* proved that the presence of hallmarks of early and late stage atherosclerotic disease were evident throughout the SIA track.

For us, this report also highlights the absolute necessity to know more about what we do in clinical practice in an era where so many technologies are proposed by industry to treat the SFA; stenting, debulking, drug eluting technologies, etc. For us, it is also the only way to move to patient centred treatments in place of trials evaluating results on selected populations, on midterm follow up, and using the length of the lesion as almost the only factor of stratification. We strongly believe we need to know more about the lesion we actually treat.

We showed that combined artificial intelligence and micro-computed tomography might be a useful tool to evaluate histological lesions in atherosclerotic arteries<sup>3</sup> and is a valuable step to allow characterisation results without destroying the specimen but leading at the same time to a precise histological result.

In this report, patency was achieved without stenting, showing that SIA of long femoropopliteal lesions is a viable option, combined with assistance. SIA assisted patency gets better after 15 months, highlighting the importance of careful surveillance in order to re-intervene on a progressive stenosis.<sup>4</sup> SIA stenting in long femoropopliteal lesions might help to decrease the high re-intervention rate within

the first year after SIA. However, there are still very few histological data on SIA associated with stenting. We reported an early occlusion of a popliteal artery stenting in the setting of acute limb ischaemia.<sup>5</sup> SIA recanalisation might be a factor in the early occlusion; however, in the setting of acute limb ischaemia, presence of thrombus might be a confounding factor.

The SFA remains a challenging vessel to treat for peripheral obstructive arterial disease, despite the different techniques available. We conclude we need more data, as presented in this paper, to improve endovascular treatment results by using the right tool to treat a specific atherosclerotic lesion.

## REFERENCES

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