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Experience with the *AndraTec Lokum Amplatz Guidewire*; CASE REPORT Antwerp University Hospital, BELGIUM

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Case report:

A 49-year old female patient was referred to our hospital with the presence of a non-ruptured intracranial aneurysm with a broad neck located at the left internal carotid artery (ICA). The aneurysm measured 10mm in maximal diameter size. The aneurysm was found because of a familial predisposition for intracranial aneurysms.

The diagnostic angiogram and 3D angiography was performed with a 4 French catheter (Terumo) and showed the left ICA aneurysm. For treatment of the aneurysm the 4 French diagnostic catheter was exchanged for a 6 French IVA long sheath (Balt Corporation) placed in the common carotid artery and then a 6 French Fargo Max guiding catheter (Balt Corp.) was introduced in the left ICA.

In both cases the **AndraTec Lokum Amplatz Guidewire** (260cm straight tip) was used for the exchange of the diagnostic sheath and guiding catheter. The straight tip can be manually bend with a shaper device into a curved tip in order to have the tip placed along the curves of the arteries with less risk of vessel wall dissection. Stability and visibility of the **AndraTec Lokum Amplatz Wire** were excellent. We experienced low friction during exchange of catheters. On the control angiogram we observed minimal to no vasospasm after introduction of the **AndraTec Lokum Amplatz Guidewire**.

Discussion:

The left common carotid artery is usually the most difficult to catheterize of the various head and neck arteries. Catheterisation may be extra difficult in case of a sharp angle of the origin of the left common carotid artery on the aortic arch and because of vessel tortuosity along the way. Next to introduction difficulties, this may also lead to instability of catheters and guidewires in the artery. Stability of the guidewire during an exchange manoeuvre is very important to prevent downfall of the wire in the aortic arch.

For exchange of catheters, several guidewires are available on the market. In peripheral vascular interventions, for instance an endovascular abdominal aorta aneurysm treatment by endoprosthesis, a stiff exchange wire, such as a Lunderquist guidewire, can help overcome tortuous iliac vascular anatomy. In case of intracranial endovascular treatments, there are several differences from peripheral endovascular procedures. First of all, the distance from the groin to the neck is much longer and more curves have to be overcome. Second, due to the smaller diameter of the head and neck arteries, vasospasm happens much more frequently compared to the wider iliac arteries and aorta. Vasospasm is caused either by the guidewire or the catheter. In the head and neck region, vasospasm is an important issue because it can lead to cerebral hypo-perfusion and ultimately to an infarct. Finally, atherosclerotic plaques need to be taken into account at the level of the iliac arteries, aortic arch and head and neck arteries. If the guidewire is too stiff this may result in too much vessel straightening and disruption of a plaque. Therefore, the long exchange guidewire to be used in endovascular head and neck arteries should provide enough stiffness for stability, but should not be too rigid to diminish the risk of vasospasm and plaque disruption.

As mentioned before, the tip of the guidewire is of importance in head and neck angiography. The distal 5 cm tip of the **Lokum Amplatz Guidewire** is flexible. Next to the straight tip guidewire that we have used, there are the 3 and 6mm J-tip guidewires available. We appreciate the possibility to curve the straight tip manually. The shaped tip remained in the produced shape during the exchange procedure.

The **Lokum Amplatz Guidewire** possesses extra steerability for increased control. This may be important for placing and maintaining the guidewire tip in the right place. The **AndraTec Lokum Amplatz Guidewire** exists in various shaft lengths: 180cm / 260 cm / 320 cm / 360 cm. For endovascular head and neck procedures, the 260 cm is the most optimal length for the exchange of catheters.

We noted that the **Lokum Amplatz Guidewire** has a good compromise between stiffness for exchange and support at one hand, with respect for vascular anatomy and atraumatic capacities at the other hand. Also, the guidewire has an excellent radiopaque visibility and a low friction for exchange. The **AndraTec Lokum Amplatz exchange Guidewire** has the proper characteristics for safe use in endovascular head and neck procedures.

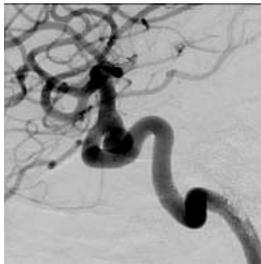


Fig 1. Left internal carotid artery angiography, $\frac{3}{4}$ view, showing the intracranial aneurysm on the posterior wall of the C6 segment.



Fig 2.: X-ray image, anteroposterior view of the head and neck, after placement of the **AndraTec Lokum Amplatz Guidewire** in the left internal carotid artery. Note the excellent visibility of the guidewire.



Fig 3.: Left internal carotid artery angiography, anteroposterior view, after exchange of catheters over the **AndraTec Lokum Amplatz Guidewire**. The tip of the guidewire remained stable positioned at the C3 segment of the left internal carotid artery.