Mechanical Extraction of a Refluxed Onyx Piece from the Sigmoid Sinus Using a Solitaire AB Stent for Treating a Dural Arteriovenous Fistula: technical report

A 49-year-old woman presented with tinnitus since a long time. Magnetic resonance angiography revealed abnormal vessels located around the left sigmoid sinus. Digital subtraction angiography revealed a left sigmoid sinus dural arteriovenous fistula (DAVF) primarily supplied by the left tentorial marginal artery from the left internal carotid artery, posterior meningeal artery from the left vertebral artery, anterior and posterior branches of the left middle meningeal artery, and posterior auricular artery from the left external carotid artery. There was prominent stenosis in the left sigmoid sinus (Figure 1 a-d). The fistula was classified as type II a+b according to the Merland–Cognard classification. Onyx injection was performed through the posterior auricular artery using the combination of a Marathon microcatheter (ev3, Neurovascular, Inc.,

Figure 1. a-d. The left sigmoid sinus DAVF discovered in a 55-year-old woman who presented with headache and tinnitus. Selective the left external carotid artery anteroposterior (a) and lateral (b) injections demonstrates the DAVF fed primarily by anterior and posterior branches of the MMA (white arrows) and posterior auricular artery (black arrow). (c) Late arterial and venous phases of ECA shows retrograde contrast filling of the straight (black arrow) and superior sagittal sinuses (white arrow). (d) There is prominent stenosis in the left sigmoid sinus (arrow). This is a type II a+b, DAVF according to Merland-Cognard classification. 90x86mm (300x300 DPI)
Endovascular embolization is an important therapeutic option for treating cerebral vascular malformations such as aneurysms, arteriovenous malformations, and DAVFs [1]. Onyx is a non-adhesive polymer that uses as a liquid embolic agent for brain arteriovenous malformations (AVMs) and dural arteriovenous fistulas (DAVFs). One of the serious complications of Onyx embolization is the risk of reflux into parent vessels, and techniques to cope with this complication have not yet been established [2].