Salvage Technique for a Deformed Intrasaccular Flow Diversion (Web) Device After Deployment, a Technical Note

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Introduction
Wide-neck aneurysms are generally difficult to treat with stand-alone coiling technique. Thus, alternative techniques have been developed such as flow disruption/diversion, which involves the use of an intrasaccular cage that disrupts the blood flow at the level of the neck and induce aneurysmal thrombosis. This technology has been evaluated in multiple studies with good outcomes. The deployment success rate is about 96%, with failure mostly due to device protrusion due to aneurysm and device size mismatch. Anatomic outcomes showed an adequate occlusion (complete occlusion or neck remnant) in 79.1% of aneurysms.

Case Presentation
A 52-year-old female with history of systemic lupus erythematosus on coumadin for recurrent deep venous thrombosis. She has unruptured right middle cerebral artery bifurcation aneurysm with the following dimensions 8 x 7 x 5.4 mm. The aneurysm was treated with a WEB device (8 x 4 mm dimensions). Upon deployment we noticed deformation of the device along its long axis which left the aneurysm partially treated. The device lacks the ability to be re-sheathed. The available salvage options at that time were, use of balloon assisted coiling or stent assisted coiling to treat the residual aneurysm. Both techniques require the patient to be on dual antiplatelets, which would put the patient at increased risk for hemorrhage. Thus, we used a technique usually used to retrieve poorly deployed coils. This technique includes the use of Goose Neck Snare 4 mm, which has a 90° angled loop that allow for optimal wall apposition and ideal capture ability. We used the snare loop to catch the proximal end of the WEB and with gentle pulling we were able to restore the original shape of the device with complete filling of the aneurysm. The patient did well with no neurological sequelae.

Conclusion
Endovascular devices are susceptible for technical failures. The use of Goose Neck Snare can be a valuable salvage technique in the neurointerventionist armamentarium.

References