

Concurrent temporary inflation of a non detachable balloon in the parent artery has been reported to be useful during endovascular coiling of complex, wide-neck aneurysms, facilitating truer coil reconstruction of the native vessel. Nevertheless, the true parent artery of an aneurysm may not be selectable with a guidewire and remodeling balloon due to unfavourable angulation or a difference in diameter. Hypercompliant balloons can adapt to complex geometry by volumetric increase with only moderate pressure change. With appropriate caution, this technique may thus be used to remodel inaccessible vessels.

#### CASE DESCRIPTIONS:

- 1) Recurrence of a left sided previously ruptured IC-PC aneurysm secondary to coil compaction. After unsuccessful attempts to probe the p-com origin with various guidewire/catheter combinations the aneurysm was selected with an Echelon 10 while a Hyperform balloon (both ev3, Irvine, CA) was placed in the terminal ICA across the origin of p-com. Careful overinflation of the Hyperform sufficiently protected the origin of this dominant p-com from coil protrusion and also allowed for dense packing of the aneurysm.
- 2) Unruptured paraophthalmic aneurysm leading to visual impairment due to CN2-compression. Staged treatment aiming first at protection against hemorrhage followed by finishing of the neck 10 weeks later. During this treatment it was possible to protect the origin of the ophthalmic artery from inadvertent occlusion by means of controlled overinflation (\*) of an Eclipse 12 balloon (Balt, Montmorency).
- 3) Three months after simultaneous coil occlusion of an acutely ruptured acom-ant. aneurysm and a right sided mca aneurysm this patient underwent endovascular treatment of the recurrence of the acom-ant. aneurysm. The origin of the right a2 that was incorporated into the aneurysm neck could not be selected individually. However, it was possible to protect the neck by means of cautiously overinflating an Eclipse 8 balloon in the left a1-a2 junction. An unsubtracted screenshot after the initial placement of coils displays the ability of the balloon to adapt to the vascular geometry beyond the confounds of the selected vessel (\*).

**DISCUSSION:** From our limited experience we have learned to value the potential that lies within the technique described here. Overinflation of hypercompliant balloons can facilitate endovascular coil occlusion with remodeling of inaccessible arteries beyond the reach of stenting and other techniques. However, despite recent publications that did not find that the adjunctive use of balloon assistance leads to increased adverse events during aneurysm coiling we recommend overinflation to be applied only by experienced interventionists and with utmost care.

Ref: M. Shapiro, J. Babb, T. Becske, P.K. Nelson: Safety and Efficacy of Adjunctive Balloon Remodeling during Endovascular Treatment of Intracranial Aneurysms: A Literature Review. AJNR Am J Neuroradiol 29:1777- 81 Oct 2008

