Coil compaction

Recurrence following endovascular treatment of intracranial aneurysm is attributed to either coil compaction or aneurysm growth but these processes have not been studied as distinct processes.

The pixel size of the coil mass and aneurysm sac, and the adjacent parent artery were measured and expressed as a ratio to the pixel size of the parent vessel diameter on immediate post-procedure and follow-up angiograms. Increase of aneurysm area or decrease in coil mass of 30% or greater on follow-up angiogram was used to define “significant” aneurysm growth and coil compaction, respectively.

Eleven patients had coil compaction, 14 patients had significant aneurysm growth and 4 patients had small aneurysm regrowth. Retreatment was performed in the 14 patients with “significant” aneurysm regrowth and 8 of the 11 patients with coil compaction at mean follow of 11 months (range 5-20 months) following the initial procedure. There were no events of new aneurysmal rupture in either 11 patients with coil compaction or 14 patients with significant aneurysm regrowth over a mean follow-up period of 22 months (range of 9-42 months).

This is one of the first studies to differentiate coil compaction and aneurysm growth as distinct etiologies for aneurysm recurrence [1)]

1)
Abdihalim M, Watanabe M, Chaudhry SA, Jagadeesan B, Suri MF, Qureshi AI. Are coil compaction and aneurysmal growth two distinct etiologies leading to recurrence following endovascular treatment of intracranial aneurysm? J Neuroimaging. 2014 Mar-Apr;24(2):171-5. doi: 10.1111/j.1552-6569.2012.00786.x. Epub 2013 Jan 14. PubMed PMID: 23317437.