

# Coil History

The [Guglielmi Detachable Coil](#) is a block of platinum [coil](#) commonly used in intracranial non-invasive surgery for the occlusion of [intracranial aneurysms](#). It was invented by Italian interventional neuroradiologist Dr. Guido Guglielmi in [1990](#) and was gradually introduced in the later 1990s as an alternative to surgical [clipping](#), which requires invasive surgery. In September [1995](#), the Guglielmi Detachable Coil (GDC) system received formal approval from the Food and Drug Administration (FDA) for the treatment of surgically high-risk intracranial aneurysms.

Since then, continuous research and development have led to the generation of more innovative coil designs with improved results, such as those seen with hydrophilic coils. Adjunctive to this was the increased use of balloon and stent-assisted coiling, enabling higher packing densities while reducing coil herniation into the parent artery. Nevertheless, these innovations left room for improvement in the management of certain aneurysms subgroups, such as nonsaccular aneurysms, as well as saccular aneurysms with wide necks, and dome-to-neck ratios under 2, all of which tend to recanalize more often, with rates up to 18.2% in some series <sup>1) 2)</sup>

In an attempt to address this challenge, the neurovascular community has developed a number of flow diverting stents, most of which are endoluminal <sup>3)</sup>

<sup>1)</sup>

Crobeddu E, Lanzino G, Kallmes DF, Cloft HJ. Review of 2 decades of aneurysm-recurrence literature, part 1: reducing recurrence after endovascular coiling. *AJNR Am J Neuroradiol*. 2013;34(2):266-270.

<sup>2)</sup>

Crobeddu E, Lanzino G, Kallmes DF, Cloft HJ. Review of 2 decades of aneurysm-recurrence literature, part 2: managing recurrence after endovascular coiling. *AJNR Am J Neuroradiol*. 2013;34(3):481-485.

<sup>3)</sup>

Dmytriw AA, Salem MM, Yang VXD, Krings T, Pereira VM, Moore JM, Thomas AJ. Endosaccular Flow Disruption: A New Frontier in Endovascular Aneurysm Management. *Neurosurgery*. 2020 Feb 1;86(2):170-181. doi: 10.1093/neuros/nyz017. PubMed PMID: 30834934.

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