

The birth of endovascular neurosurgery was through an intertwined history among groups of neurosurgeons, neuroradiologists, and neurologists.

see [Egas Moniz](#)

Endovascular neurosurgery at that stage was primitive and crude, with only large-caliber, nonflexible catheters available for access and a variety of nonspecialized materials for embolization, such as beads, pellets, muscle and fascia, Gelfoam sponge (Pharmacia & Upjohn, New York, New York), and silk.

Moreover, endovascular treatment initially relied upon open surgical approaches to the carotid system, and it was not until the 1970s that the field of endovascular neurosurgery became independent and self sustainable from open vascular neurosurgery.

This milestone further spurred the rapid development of microcatheter technology for vascular access and new, visualizable embolizate that would allow controlled polymerization and distal penetration.

An important figure in the history of endovascular neurosurgery is [Charles Kerber](#).

Many recent milestones and their impacts in this field, such as detachable coils, Onyx (Covidien, Irvine, California) embolization, and mechanical thrombectomy for acute stroke intervention, have been discussed extensively by several investigators.

Nevertheless, there were a few developments that also helped make endovascular neurosurgery a safer and better specialty, yet received little attention. One such event was the creation of a multidisciplinary morbidity and mortality conference at the national and international level (the Cerebrovascular Complications Conference), where the worst types of complications were brought together from around the world so that everyone could learn from them. In addition, surgeons have started to learn from the aviation industry about crisis management and safety improvement.

Approximately 70% of all aviation accidents can be attributed, at least in part, to human error, and similar safety concerns exist in medicine and in endovascular neurosurgery. Adapting what has been learned and tried in other industries, such as the preoperative checklist, could help take our specialty to another level.

From [1991](#), Guglielmi Detachable Coil system (Target/ Boston Scientific, Fremont, CA) rapidly substituted the detachable balloon system which had been widely used in the treatment of cerebral aneurysms since its first introduction by Serbinenko at the end of 1960's

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