

# **Magneto eRetrieve and eFlex PE System A Novel Therapeutic Concept for Endovascular Thrombectomy**

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## **Objective:**

The Magneto eRetrieve with eFlex PE System brings a novel therapeutic concept to the field of endovascular thrombectomy. It comprises the eRetrieve catheter, which uses electric forces to bond with the clot, and the eFlex catheter, a large-bore aspiration system.

## **Methods:**

The first documented case for observing electro-thrombosis was reported in 1824, when it was observed that blood thrombosed at a positive electrode. This concept was further investigated for the treatment of aneurysms. In the 1950s and 60s, it was demonstrated that use of direct current may also aid in cases of uncontrolled bleeding.

The eRetrieve Catheter is an over-the-wire thrombectomy device. It has a positively charged electrode at its distal end, intended to be in direct contact with the target clot, which has an inherent negative surface charge. Previously reported initial FIH experience has demonstrated promising results.

While aspiration with large-bore catheters is usually the first approach for these patients, their structure offers challenges, particularly limited flexibility and navigation. These catheters tend to collapse and kink during procedures. Furthermore, they exert stress on heart structures, often leading to hemodynamic embarrassment.

## **Results:**

The novel eFlex technology consists of a large-bore thrombectomy catheter with an ultra-flexible distal section. The thin-walled 26F catheter offers a 40% greater calculated flow rate compared with the largest commercially available systems. The unique catheter structure is kink and collapse resistant, with improved distal reach and excellent radial compliance, allowing it to be positioned without interfering with RV function.

## **Conclusion:**

This unique combination of a specialized aspiration system and an electrical retriever provides a comprehensive solution for optimal clot retrieval in a broad spectrum of PE patients. A US clinical investigation combining the eRetrieve with eFlex PE System is planned for early 2025.