Editorial

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IVC Filter Retrieval: What Do We Know

하대정맥 필터의 제거: 알아야 할 것들

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See the article, "*Denali Inferior Vena Cava Filter Retrieval: Complications and Success Rates*", in volume 84 on page 879-888 (https://doi.org/10.3348/jksr.2022.0106).

Pulmonary embolism (PE) secondary to deep vein thrombosis (DVT) is a significant and preventable cause of mortality in hospitalized patients. It can also occur in patients with immobilization and hemodynamic instability. Typical patient complaints include leg pain and edema, although PE can sometimes be found incidentally (1). Prophylactic anticoagulation, which involves mechanical and pharmacological therapies, is recommended for high-risk patients. Pharmacological anticoagulation is the first-line treatment for newly diagnosed venous thromboembolisms (VTE) and PEs. However, in a select group of patients with VTE who have absolute contraindications to anticoagulation, failure of anticoagulation, complications resulting from anticoagulation, or progression of DVT despite adequate anticoagulation, the use of an inferior vena cava (IVC) filter is considered a treatment option to prevent PE (1-3).

The first permanent filter, the Greenfield IVC filter, was introduced to the market in 1973. However, since the FDA-approved retrievable filters in 2003 and 2004 (3), they have become the primary choice for IVC filters. Several retrievable filters are used to prevent PE and DVT in South Korea. A recent study conducted by Park et al. (4), published in the Journal of the Korean Society of Radiology, demonstrated positive clinical outcomes in preventing PE using various IVC filters available in Korea. Importantly, all the filters used in this study were generally easy to insert and retrieve, although a few challenging cases were encountered. The present study specifically evaluated the Denali filter and found successful retrievals regardless of indwelling time, suggesting its superior performance compared to previous studies involving other filters (5).

Sometimes, retrievable IVC filters are not removed, leading to the presence of unretrieved filters that can result in various well-known complications. These complications become

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more frequent as the filter dwell time increases. Some of these complications include caval wall penetration, filter fracture or migration, caval thrombosis, and an increased risk of lower-extremity DVT. Difficulties can arise during retrieval attempts primarily because of abnormal filter positioning or endothelialization of the filter components in contact with the IVC wall, causing the filter to become embedded. The duration for which the filter remains indwelling also affects the retrieval rate, with longer dwell times being associated with more challenging retrievals. The medical literature describes several techniques for handling difficult retrievals (6). Awareness of these techniques in specific situations is crucial.

In summary, IVC filters are used to prevent PE in patients in whom anticoagulation therapy is contraindicated. Clinical experience has shown that all retrieved filters, including the Denali filter, can be easily inserted and retrieved. However, it is essential to be aware of the several techniques for retrieving filters with prolonged indwelling times.

Conflicts of Interest

The author has no potential conflicts of interest to disclose.

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