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# A Prospective Long-term Study of 220 Patients With a Retrievable Vena Cava Filter for Secondary Prevention of Venous Thromboembolism\*

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## Abstract

**Background:** The immediate and long-term clinical events associated with the placement and removal of a retrievable filter (ALN filter; ALN Implants Chirurgicaux; Ghisonaccia, France) remain largely unknown.

**Methods:** This was a prospective cohort study with an 18-month follow-up. All consecutive patients scheduled for placement of an ALN filter between April 1999 and June 2005 in the Radiology Department of our hospital were included.

**Results:** During the study period, placement of an ALN filter was indicated in 220 patients (mean age, 70.8 years), who were followed up for a median duration of 338.5 days (range, 1 to 561 days); 148 patients (67.3%) completed the 18-month follow-up. No patients were unavailable for follow-up. All patients had an acute or past venous thromboembolism. Main indications were recurrent venous thromboembolism despite adequate anticoagulation therapy (10.9%), transient bleeding event (21.8%), definitive contraindication for anticoagulant therapy (26.8%), or obligation to stop anticoagulant therapy due to major surgery, major trauma, or invasive procedure (37.7%). Filter insertion was successful in 98.6% of patients and resulted in an immediate complication in 11.8%. The median duration of filter implantation was 166 days (first to third quartiles, 34 to 478 days). Meanwhile, 17.0% (37 of 217 patients) had at least one venous thromboembolic event. Filter retrieval was attempted in 25.3% of patients after a median of 51 days (range, 6 to 352 days); removal was successful at the first attempt in 92.7% of patients.

**Conclusions:** The filter could be easily inserted and successfully removed up to 1 year after insertion. Its safety and efficacy in preventing pulmonary embolism should be properly assessed in a randomized study.

**Key Words:** cohort study • deep vein thrombosis • optional filter • pulmonary embolism • retrievable filter • vena cava interruption • venous thromboembolism