

RETRIEVABLE IVC FILTERS

–WHICH ONE IS MORE EFFECTIVE AND SAFE? –

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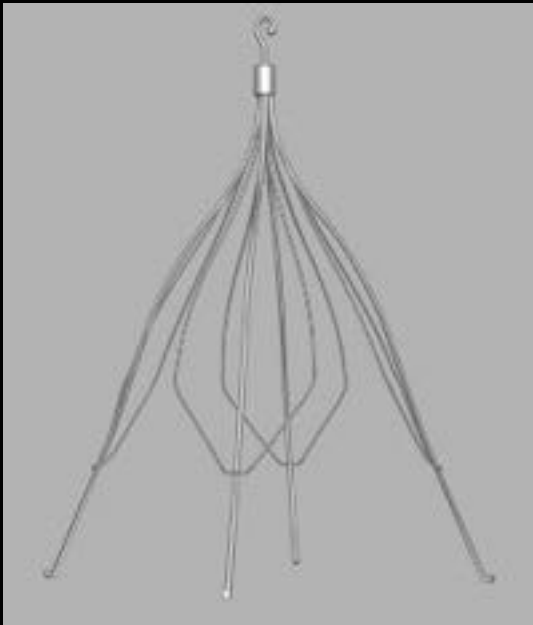
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BACKGROUND

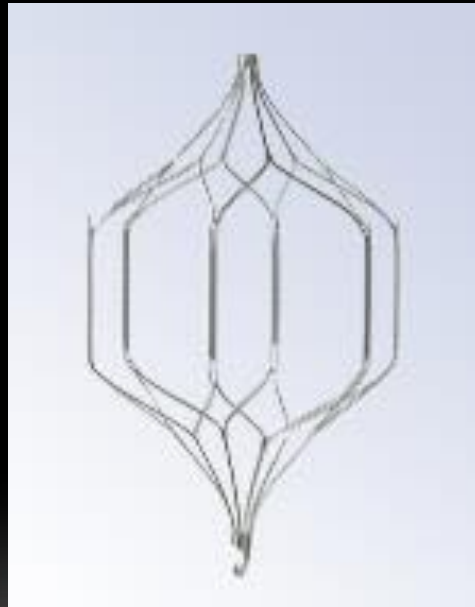
- Inferior vena cava (IVC) filters are associated with reduced mortality rate of patients with acute pulmonary embolism (aPE). However, IVC filters are associated with a long term risk of deep vein thrombosis (DVT).
 - We have been using ALN filters since 2009 because they may be left in place permanently or may be safely retrieved after a long period when they become unnecessary.
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PURPOSE OF STUDY

- To compare clinical outcomes of three different types of IVC filters



Günther Tulip



OptEase



ALN

MATERIALS AND METHODS

- Study period: 2003 – 2014
- 300 venous thromboembolism (VTE) patients
- 85 Retrievable IVC filter insertion
 - Günther Tulip
 - OptEase
 - ALN
- Clinical events during filter placement, filter retrieval rate, filter indwell time and extraction failure were retrospectively reviewed

PATIENTS CHARACTERISTICS

	Günther Tulip	OptEase	ALN
Number of patients	20	21	44
Sex (male : female)	8:12	8:13	22:22
Mean age	60.0	58.2	61.4

RISK FACTORS FOR VTE

	Günther Tulip (n=20)	OptEase (n=21)	ALN (n=44)
Orthopedic casts after trauma	4 (20.0%)	0	6 (13.6%)
Steroid intake	1 (5.0%)	2 (9.5%)	4 (9.1%)
Neurological disorder	3 (15.0%)	2 (9.5%)	7 (15.9%)
Malignancy	3 (15.0%)	10 (47.6%)	20 (45.4%)
Unknown	4 (20.0%)	5 (23.8%)	5 (11.4%)
Other factors	5 (25.0%)	1 (4.8%)	4 (9.1%)

INDICATION FOR FILTER PLACEMENT

- DVT or PE contraindication to anticoagulant therapy (including pregnancy)
- Proximal DVT and PE
- Prophylaxis before catheter-directed thrombolysis (CDT) in the treatment of lower extremity DVT
- Prophylaxis for high risk of DVT or PE

RESULTS

(CLINICAL EVENTS DURING FILTER IMPLANTATION)

	Günther Tulip (n=20)	OptEase (n=21)	ALN (n=44)
Immediate complications	0	0	0
puncture-site hematoma	0	0	0
insertion-site thrombosis	0	0	0
Venous thromboembolic events	1(5.0%)	3(14.2%)	3(6.8%)
PE	0	0	1(2.2%)
DVT	1(5.0%)	3(14.2%)	2(4.5%)
Filter thrombosis	1 (5.0%)	4 (19.0%)	7 (15.9%)
Death	0	1 (4.8%)	0

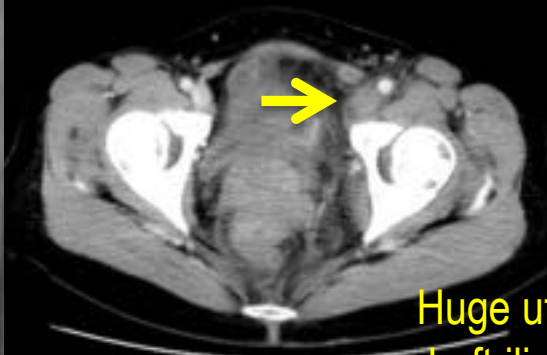
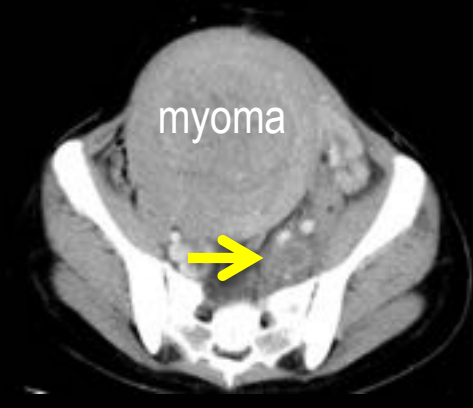
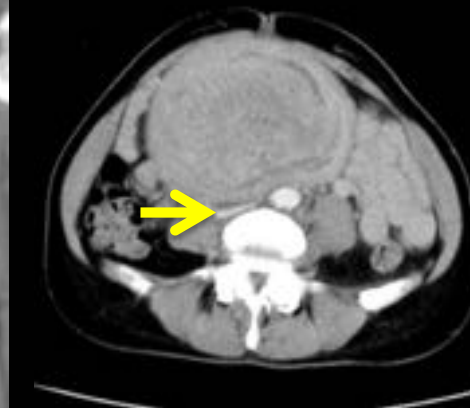
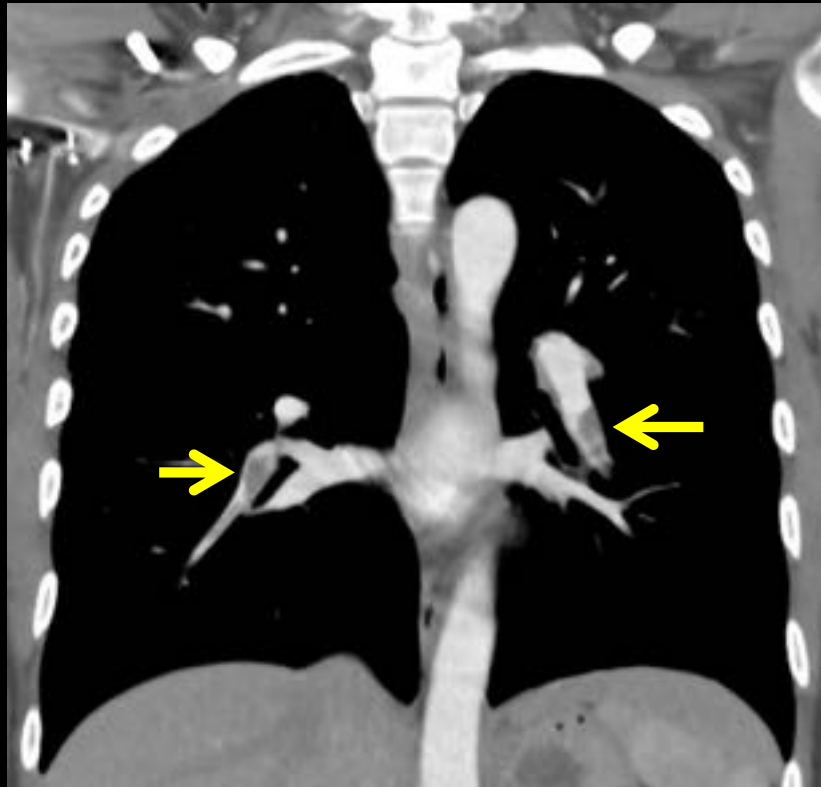
RESULTS

(FILTER RETRIEVAL)

	Günther Tulip (n=20)	OptEase (n=21)	ALN (n=44)
Filter retrieval	5 (25%)	4 (19%)	7 (15.9%)
Number of days between filter insertion and retrieval	122±3.6	15±2.6	318±166.4
Extraction failure	1 (20%)	0	0

CASE: 42 YEAR OLD WOMAN

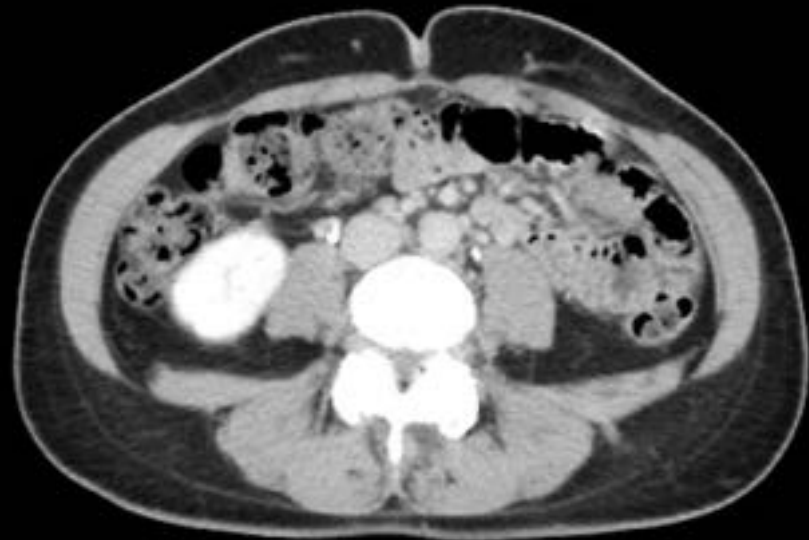
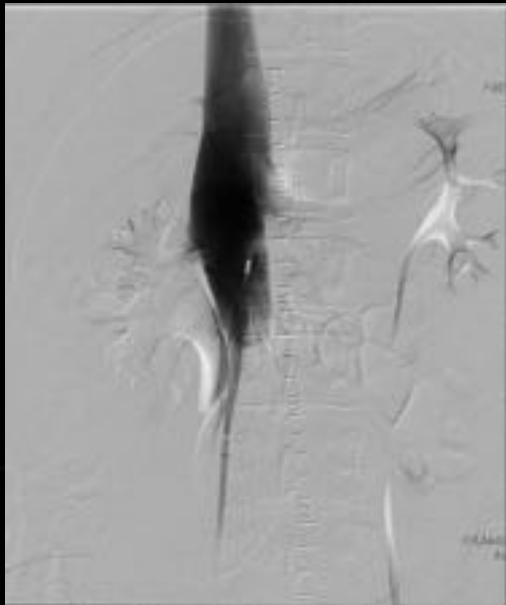
- Chief complain: left chest pain
- History of present illness: A 42 year old woman visited her primary care physician because of left chest pain. Her left lower extremity was swollen and the blood test showed positive d-dimer. DVT and PE were suspected and she was referred to our hospital.



Huge uterine myoma
Left iliac-femoral vein thrombosis

CASE: 42 YEAR OLD WOMAN

- Anticoagulant therapy was started
- ALN filter was inserted via right femoral vein
- Hysterectomy was performed by OB/GYN team
- Anticoagulant therapy was continued for 3 months
- ALN filter was removed after 454 days



After hysterectomy

DISCUSSION

- All the filters were effective in preventing venous thromboembolic event
- ALN filter showed the advantage to be removed after a long time
- Pellerin et al. confirmed the safety of ALN filter retrieval up to 722 days after implantation

Pellerin O, Barral FG, Lions C et al. Early and late retrieval of the ALN removable vena cava filter: results from a multicenter study. Cardiovasc Intervent Radiol 2008 (5):889-96

- It is recommended that the retrievable filter be removed when the risk of PE is low. In terms of filter indwell period, ALN filter can be left much longer time than the other two filters.

CONCLUSION

- ALN filters can be easily implanted and safely retrieved after long time. The retrieval failure rate was low and we did not observe any fatal complications.