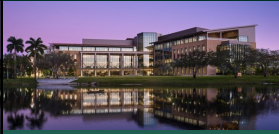





# IVC Filter Retrieval: Basic & Advanced

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 Miami Cancer Institute  
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## Disclosures

- Medtronic
- BD
- Cordis
- Argon
- Cook Medical
- Penumbra
- Inari







## COMPLICATIONS OF IVC FILTERS



- Procedural Complications
  - Access site (bleeding, arterial injury, infection)
  - Malposition, Tilting
  - Defective deployment
- Thrombotic Complications
  - DVT
  - PE
  - Caval Thrombosis
- Device Related Complications
  - Migration
  - Embolization
  - Perforation
  - Fracture

U.S. Food and Drug Administration  
Protecting and Promoting Your Health

Medical Devices

**Removing Retrievable Inferior Vena Cava Filters: FDA Safety Communication**

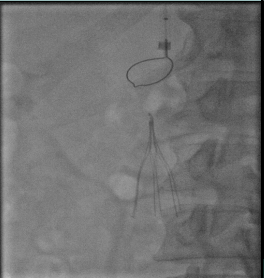
The FDA encourages all physicians involved in the treatment and follow-up of patients receiving IVC filters to consider the risks and benefits of filter removal for each patient. A patient should be referred for IVC filter removal when the risk/benefit profile favors removal and the procedure is feasible given the patient's health status.






## BASIC SNARE RETRIEVAL

### Procedural Steps


1. IVC gram performed to make sure no thrombosis of IVC and/or filter
2. Typically use internal jugular approach
3. Snare the filter hook
4. Advance the sheath over the IVC filter









## BASIC RETRIEVAL TECHNIQUES

Loop Snare

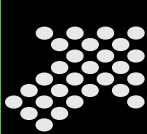



Recovery Cone

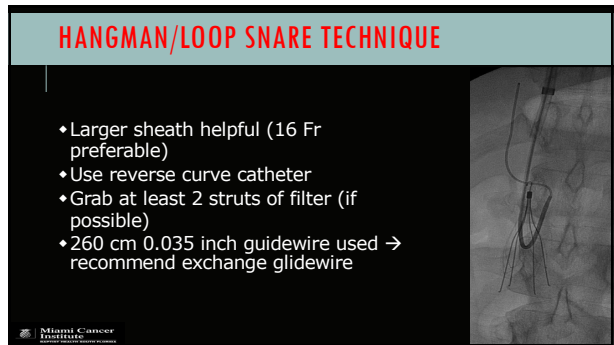
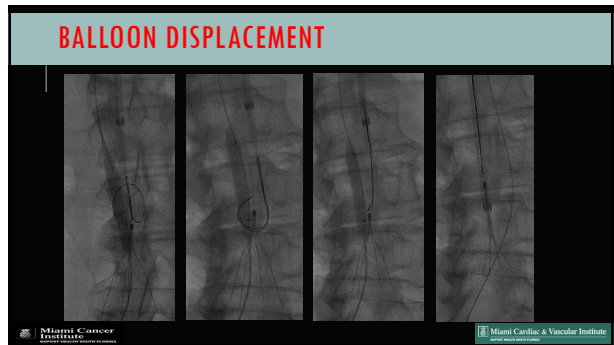
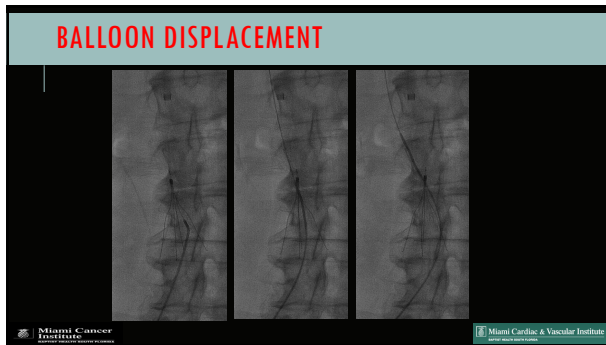
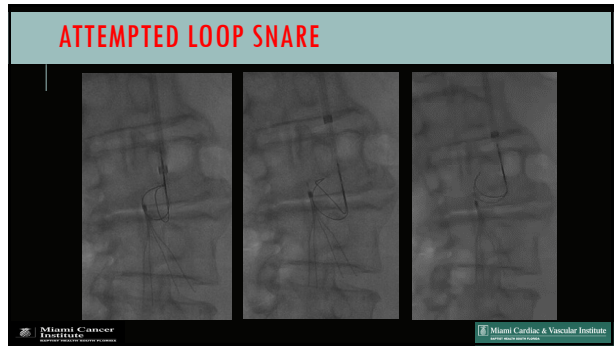
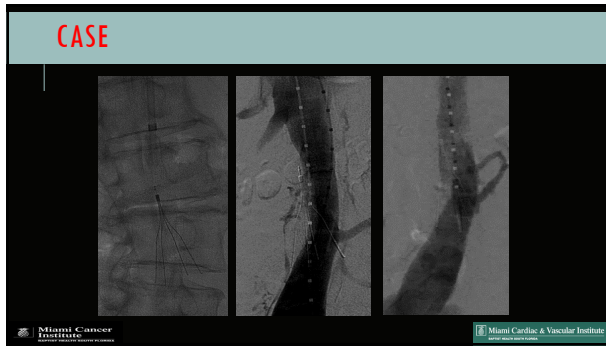


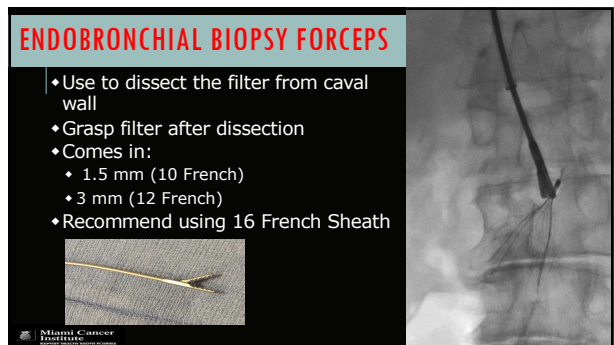
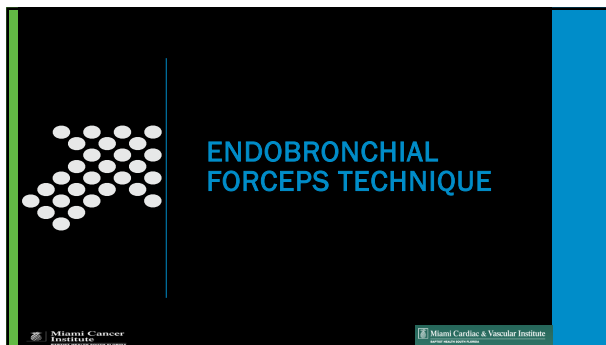
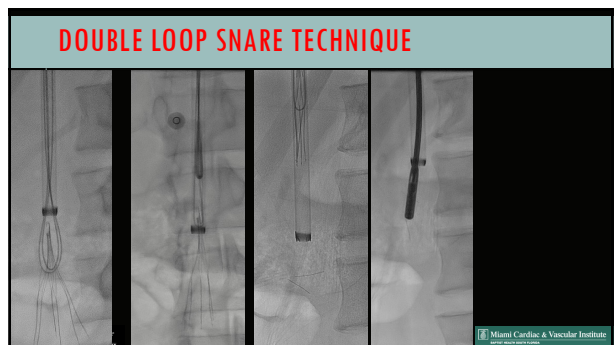
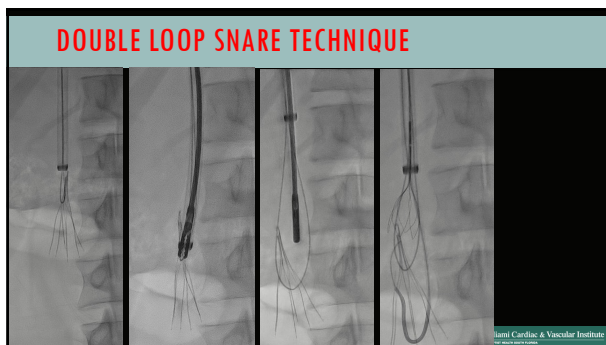
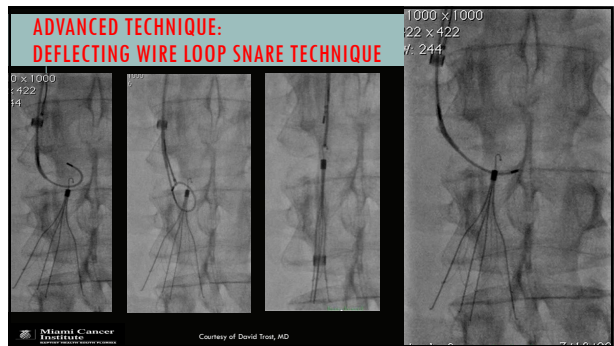
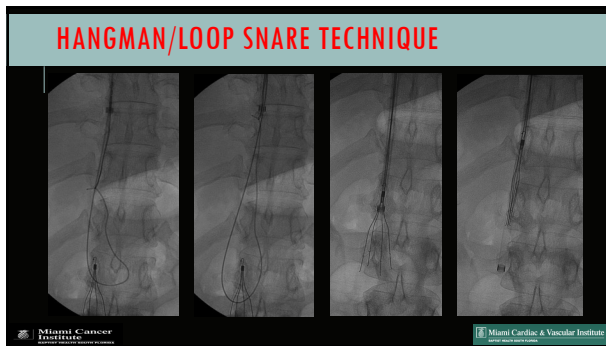



## BALLOON DISPLACEMENT TECHNIQUE

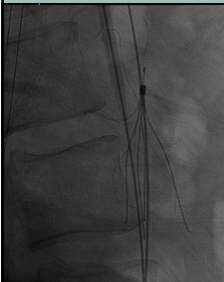






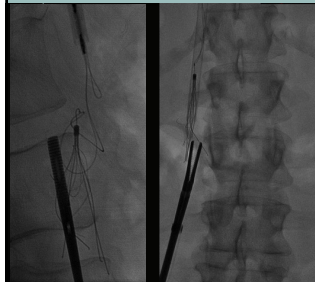
### CASE: OTHER USES OF ENDOBRONCHIAL FORCEPS



- The filter was lying with approx 45 degrees leftward tilt
- Hook embedded in the left lateral wall of the IVC
- Multiple legs were inverted and displaced from previous attempt at filter removal

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### CASE: OTHER USES OF ENDOBRONCHIAL FORCEPS



- Endovascular forceps were advanced via the right femoral vein
- Forceps used to grab the inferior aspect of the IVC filter and separate legs from caval wall
- Downward traction on the filter successfully torqued the head of the filter away from the caval wall, allowing the filter head to be successfully snared

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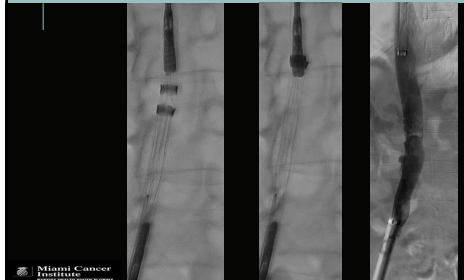
### CASE: COMPLEX TRAPESE FILTER RETRIEVAL



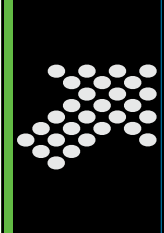
- Requires capture of both cranial and caudal aspects of the filter

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### CASE: COMPLEX TRAPESE FILTER RETRIEVAL



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## Protrieve Assisted IVC Filter Retrieval

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### PROTRIEVE ASSISTED FILTER RETRIEVAL



- 20F sheath designed for right IJ access and optimal positioning within the IVC
- Wall apposing funnel designed to trap emboli

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