

CONTROVERSES ET ACTUALITÉS EN CHIRURGIE VASCULAIRE
CONTROVERSIES & UPDATES
IN VASCULAR SURGERY



JANUARY 23-25 2014

MARRIOTT RIVE GAUCHE & CONFERENCE CENTER PARIS, FRANCE

Endovascular Navigation: Pros and Cons of the Magellan System

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Disclosure

Speaker name: Frédéric Cochenec

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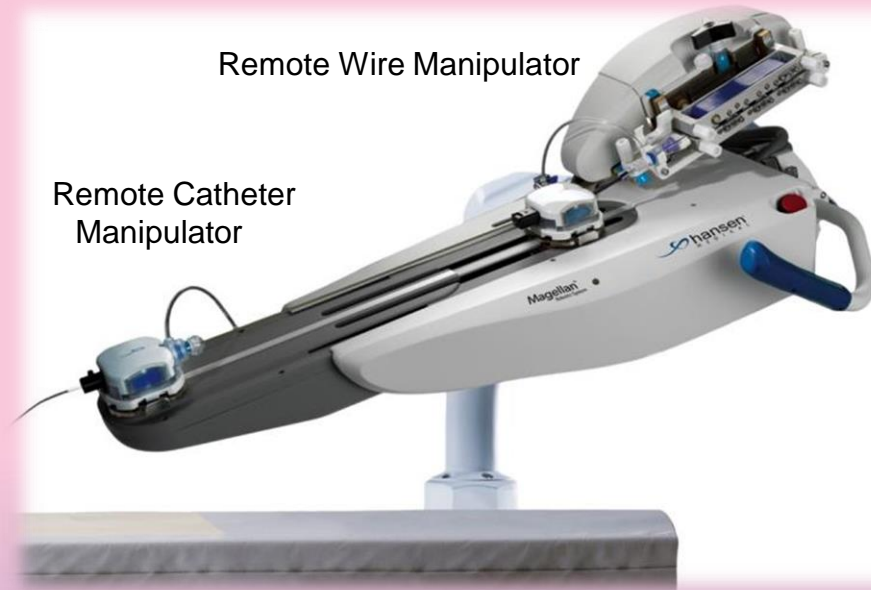
- I have the following potential conflicts of interest to report:
- Consulting
- Employment in industry
- Shareholder in a healthcare company
- Owner of a healthcare company
- Other(s)
- I do not have any potential conflict of interest

The Magellan™ Robotic System



Remote Wire Manipulator

Remote Catheter Manipulator



Main Display

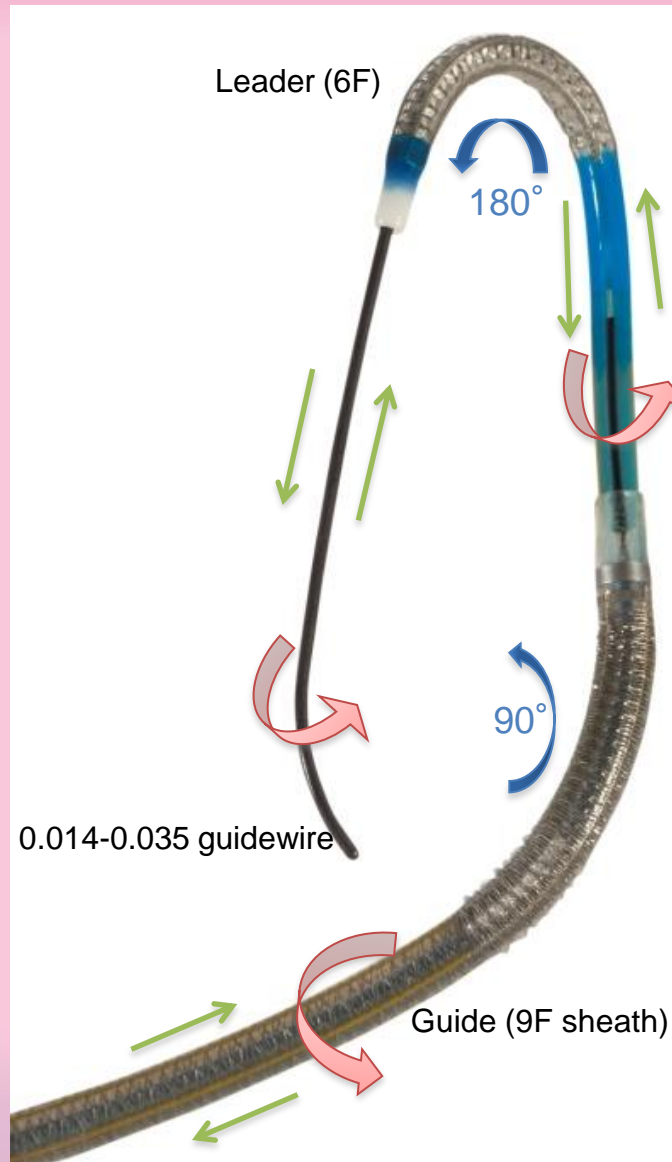
Touch Screen

3D Controller

Workstation Controller

Foot Pedal

The Magellan™ Robotic Catheter



Guidewire

Compatible with 0.014" to 0.035" guide wires
Full roll capability

Leader

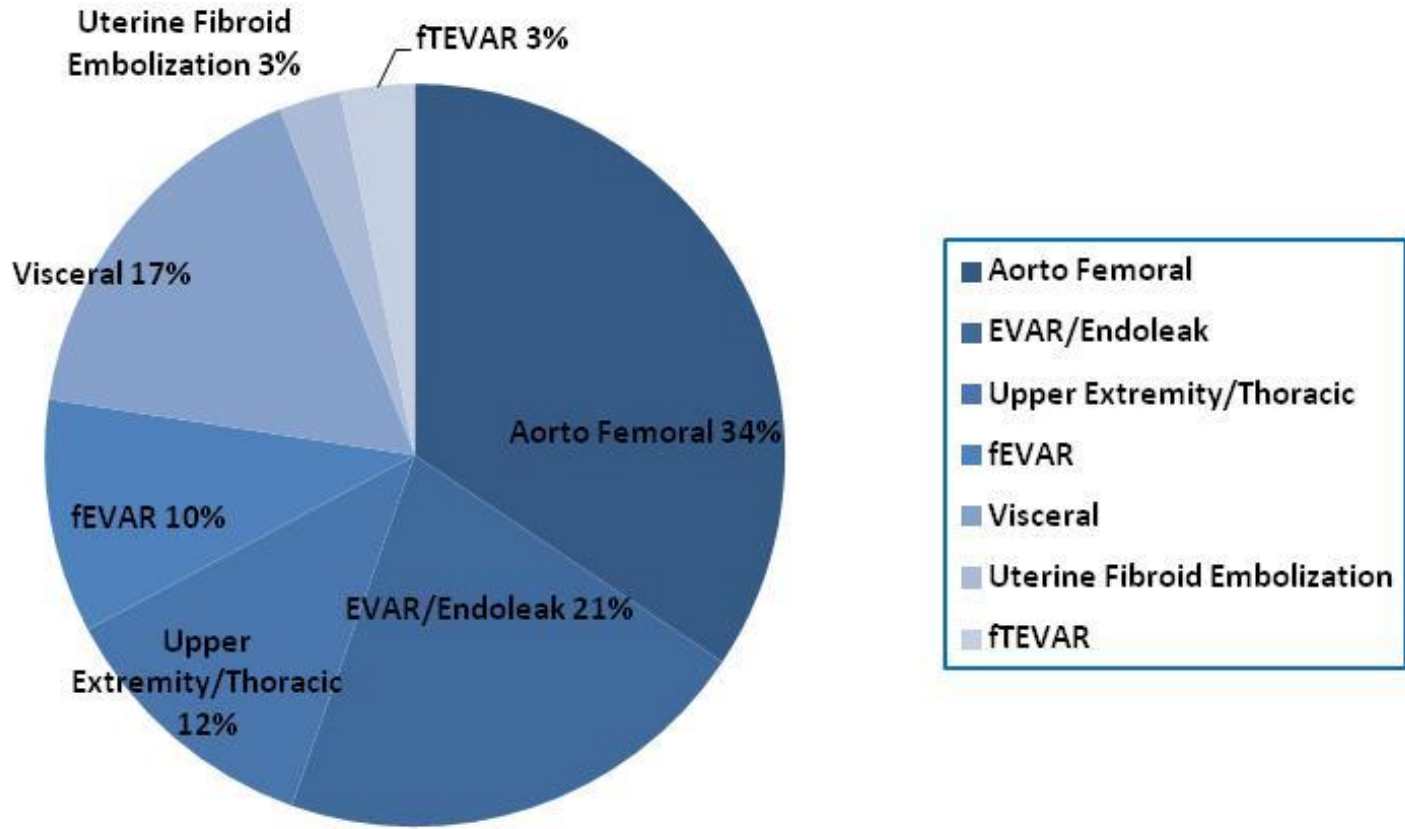
6F OD Robotically steerable Leader catheter
3D Distal bend up to 180°

Guide (Sheath)

9F OD Robotically steerable Guide catheter
3D Distal bend up to 90°

Magellan™ Cases by Type

≈ 300 cases worldwild



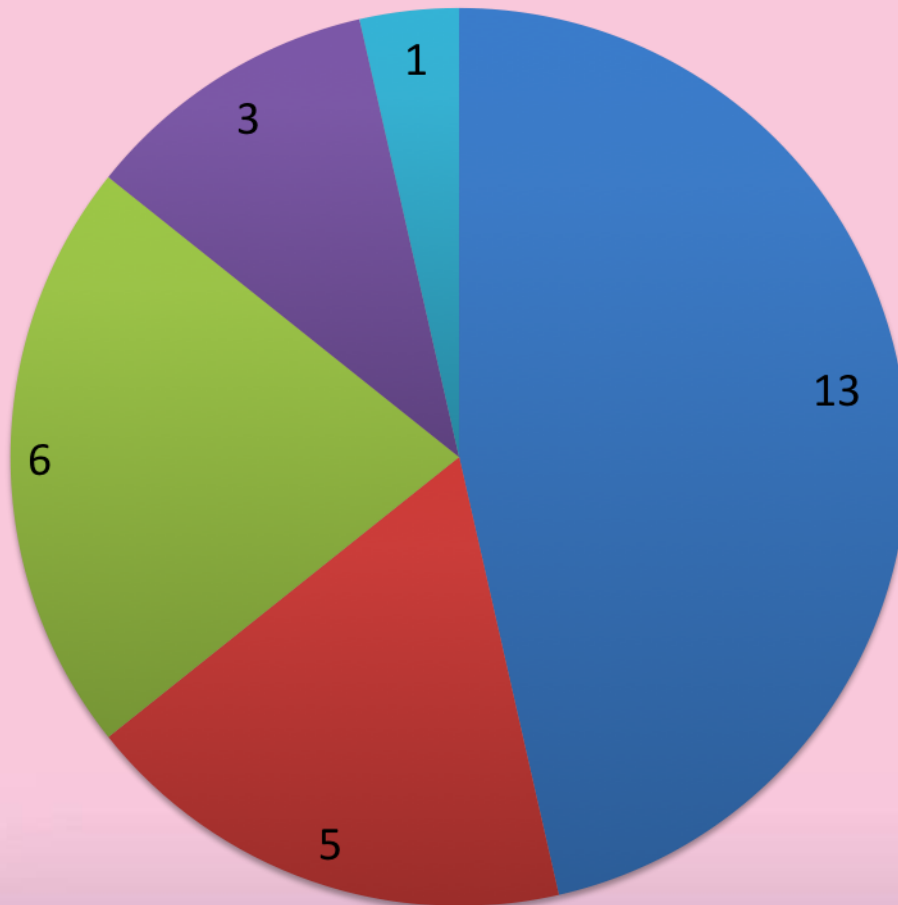
Source: Hansen Medical procedural tracking data through June 26, 2013



2/3 EVAR and PVD

Henri Mondor experience

February-October 2013: N= 28

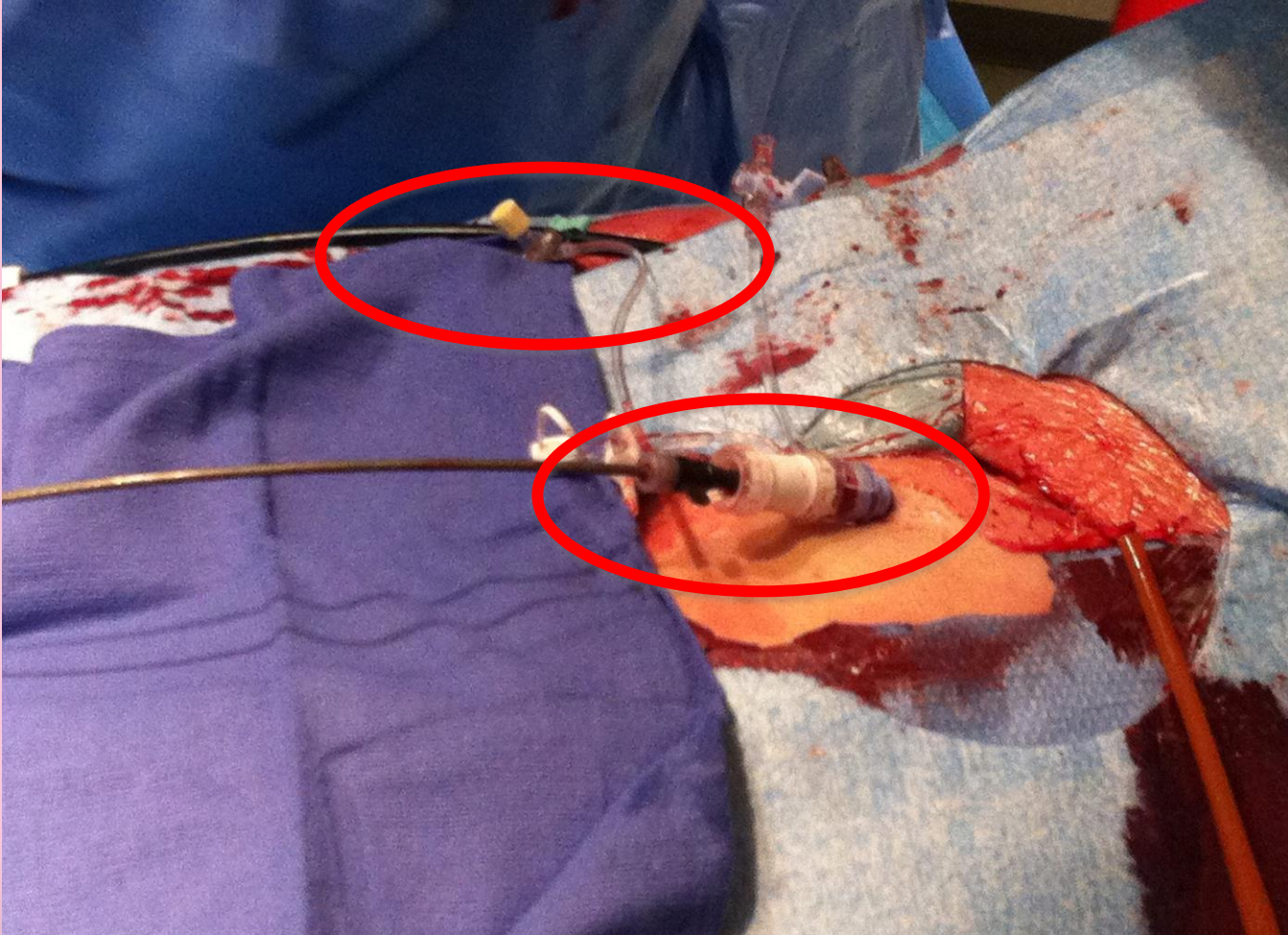


- Complex aortic aneurysms
- Lower Extremity
- Embolisation
- Carotid artery stenting
- Renal stenting

Use of the Magellan™ for complex aortic cases: Protocol

- For each target vessel: 15 min allocated to robotic navigation
- In case of cannulation failure after 15min; switch for conventional navigation
 - Fenestrations cannulated via a femoral approach
 - Branches cannulated via an axillary approach

Femoral approach



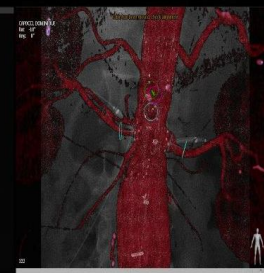
Use of Overlay

Detached Catheter

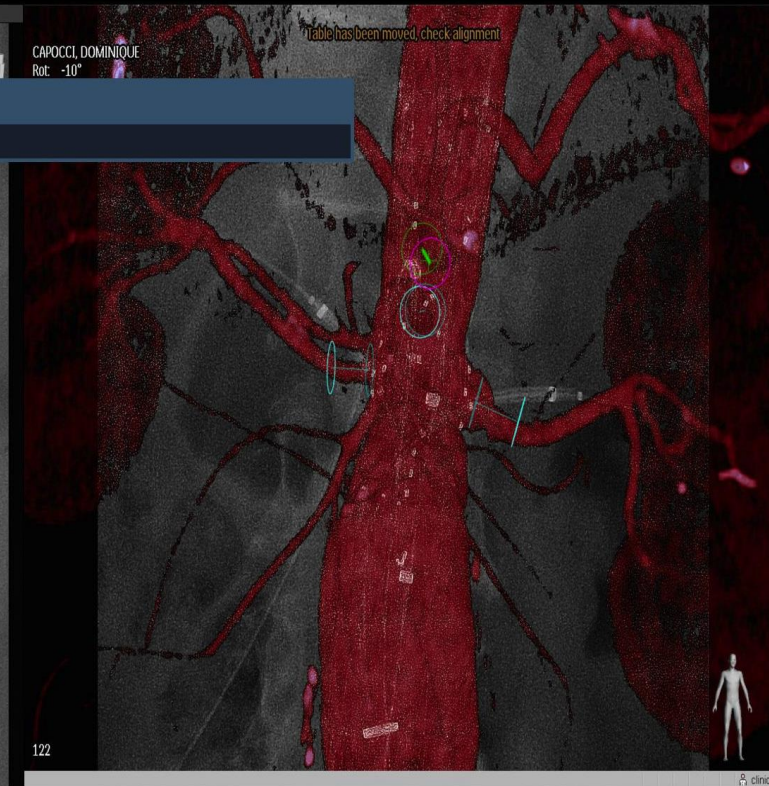
The catheter is detached.

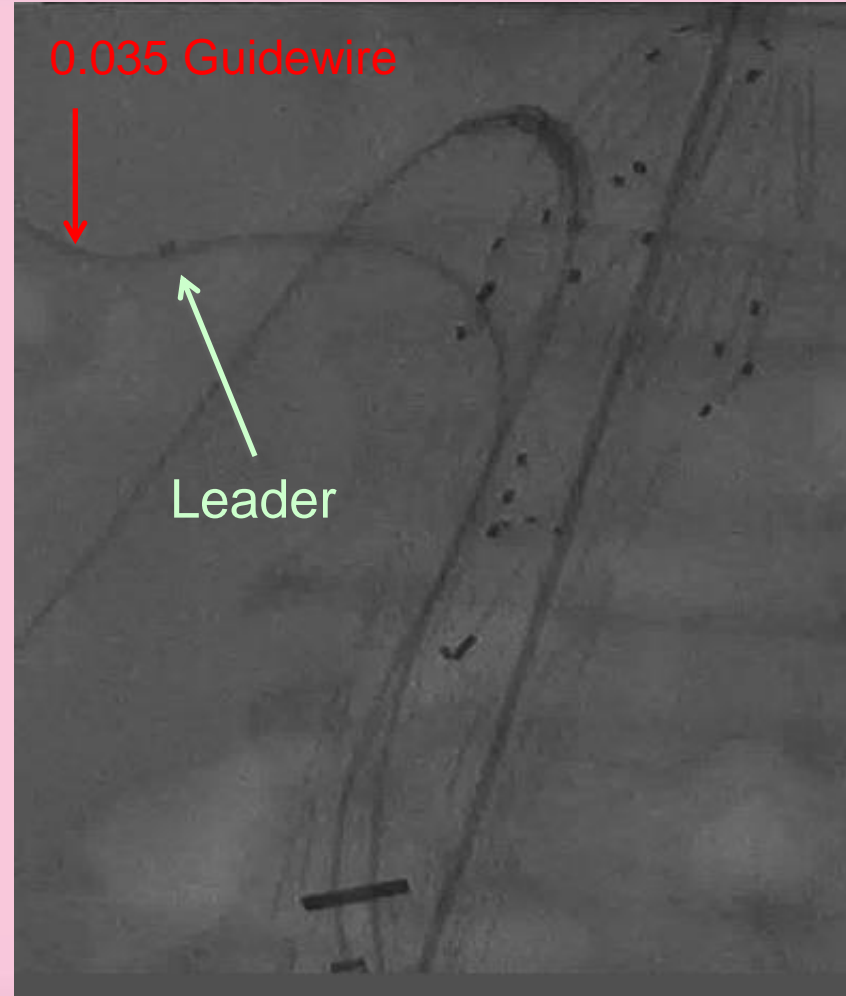
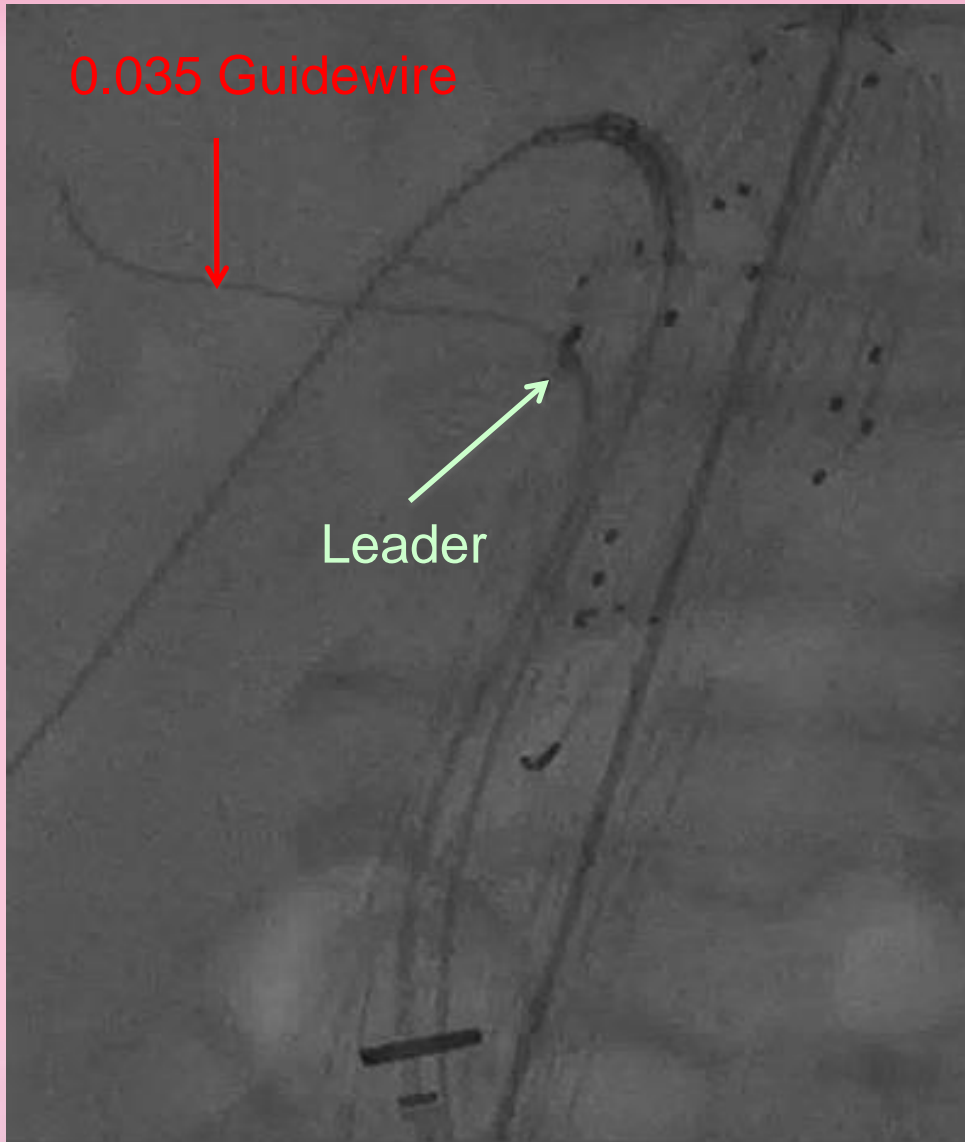
Install New
Catheter

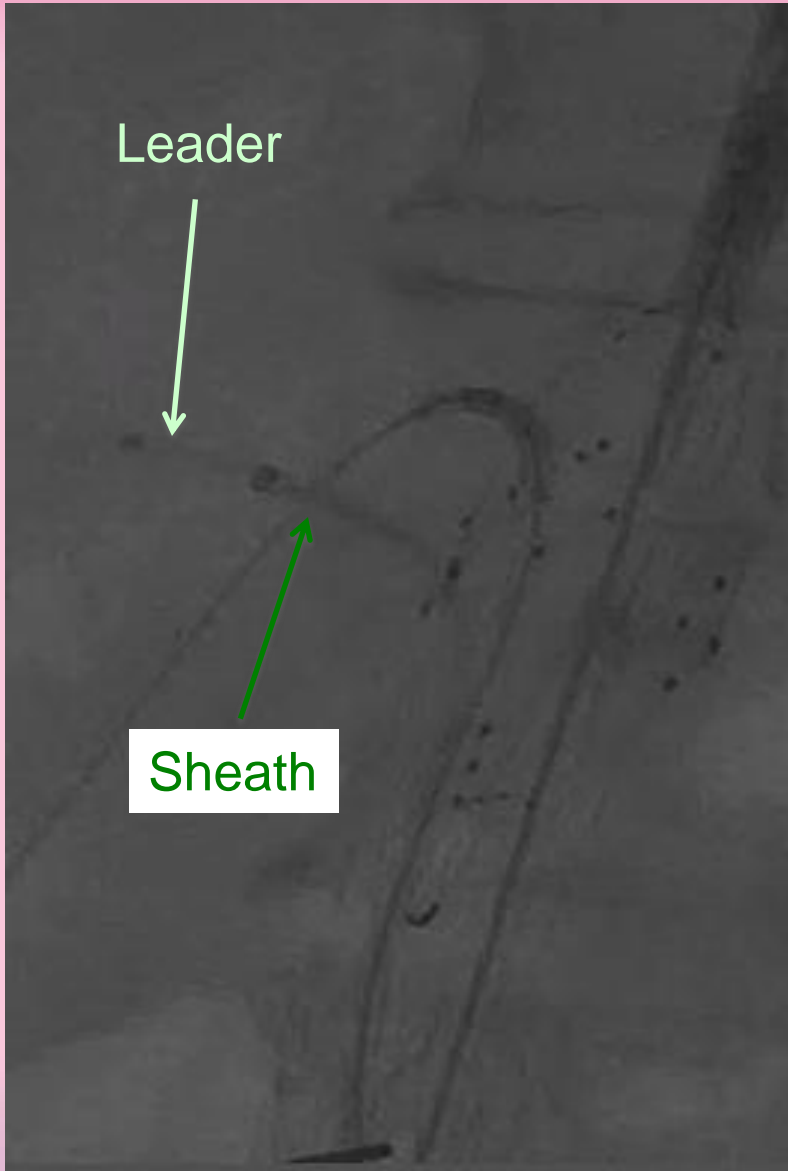
End Procedure

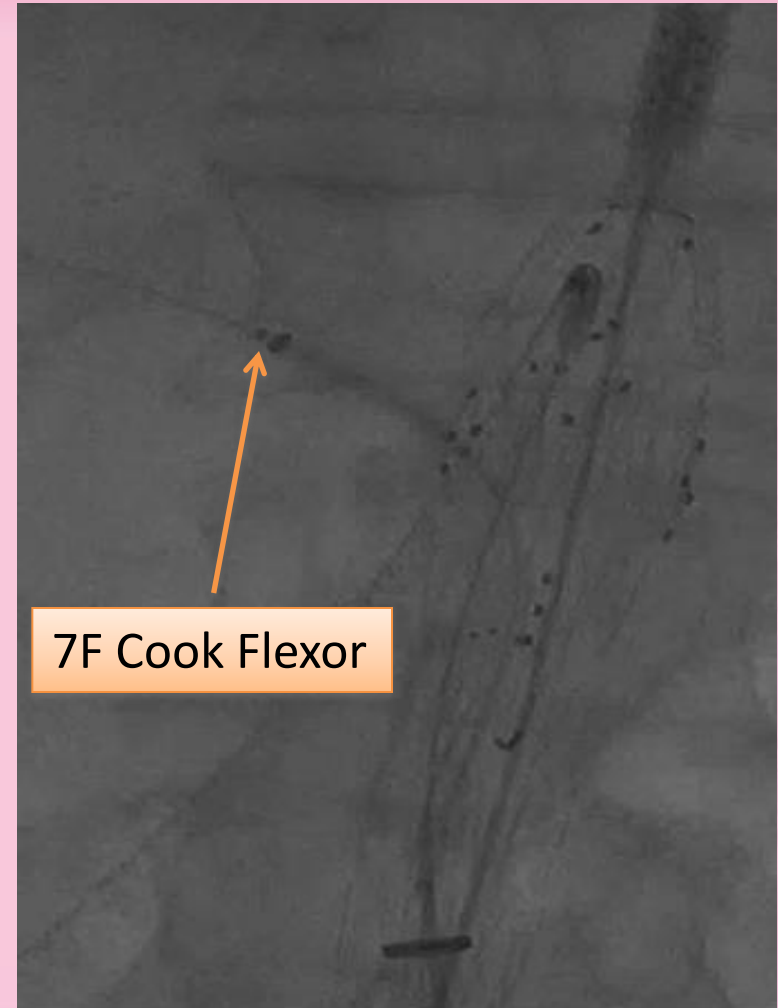
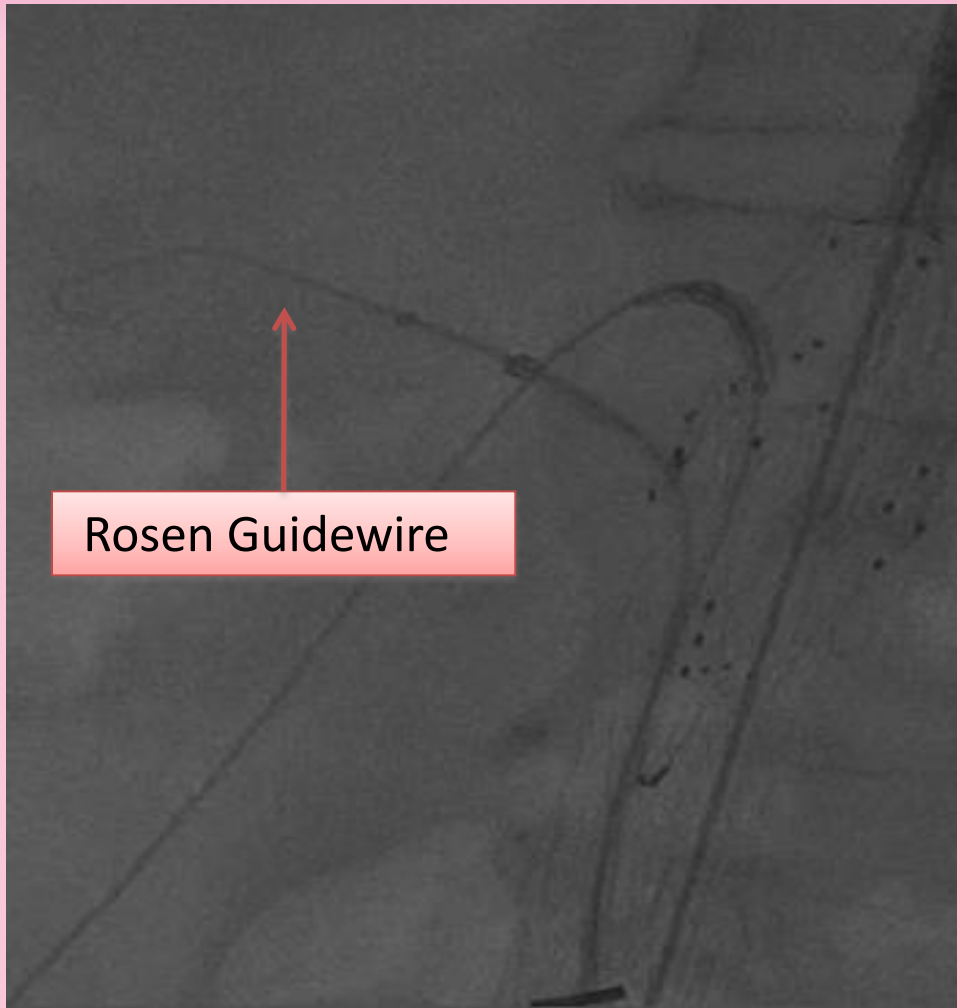


Detached Catheter
The catheter is detached.

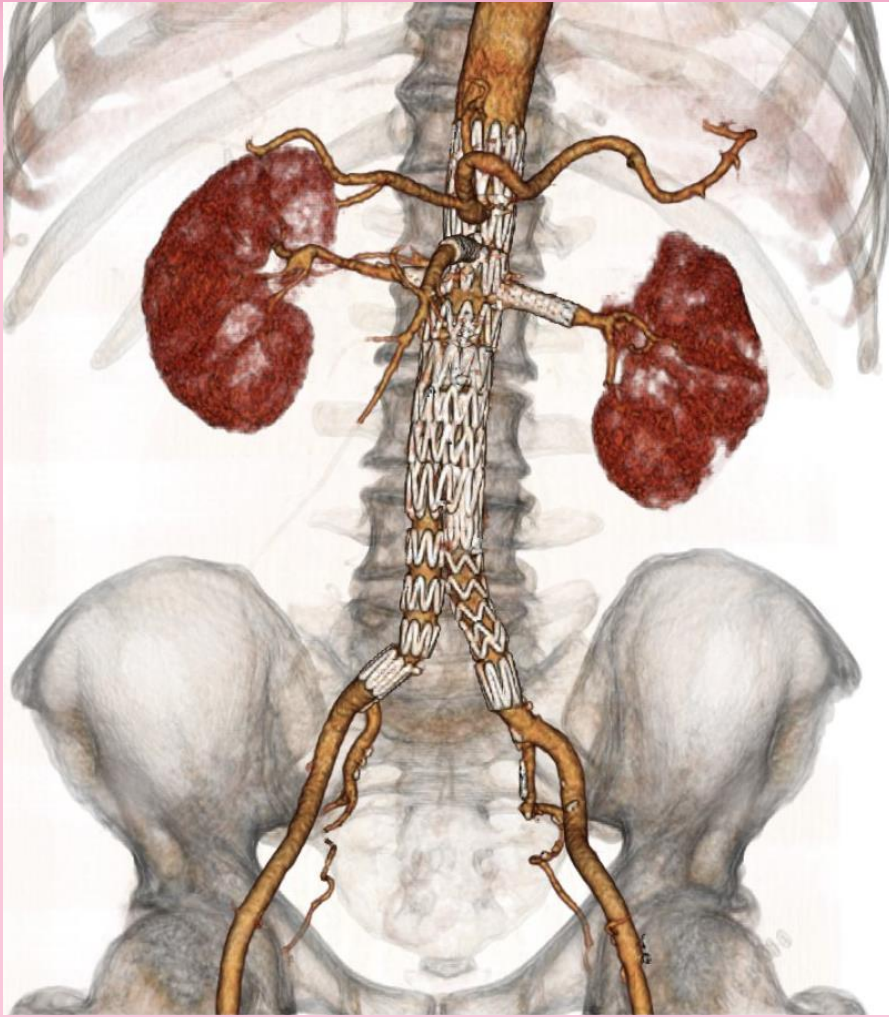




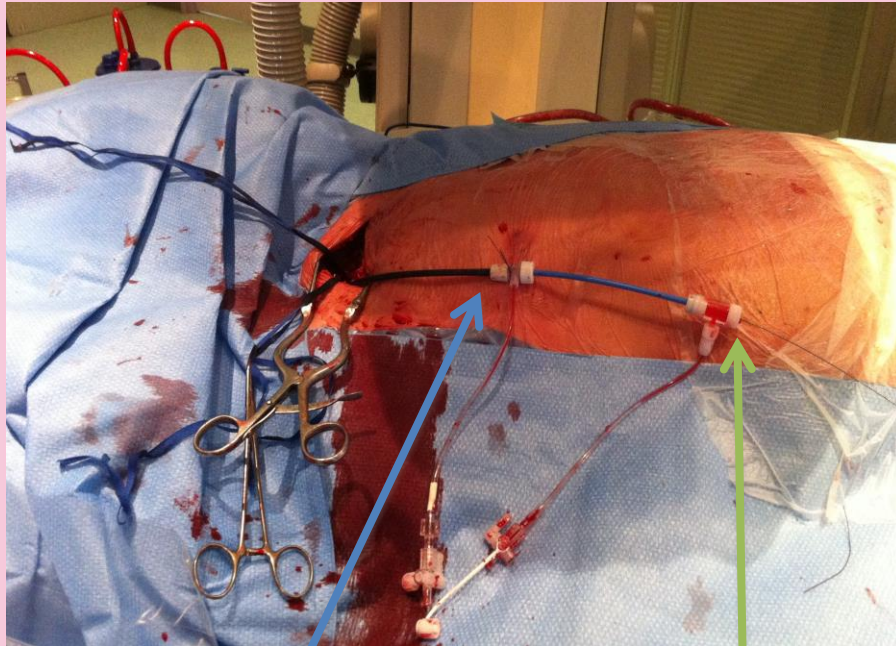




Removal of the magellan system, 7 F long sheath over the Rosen Guide wire



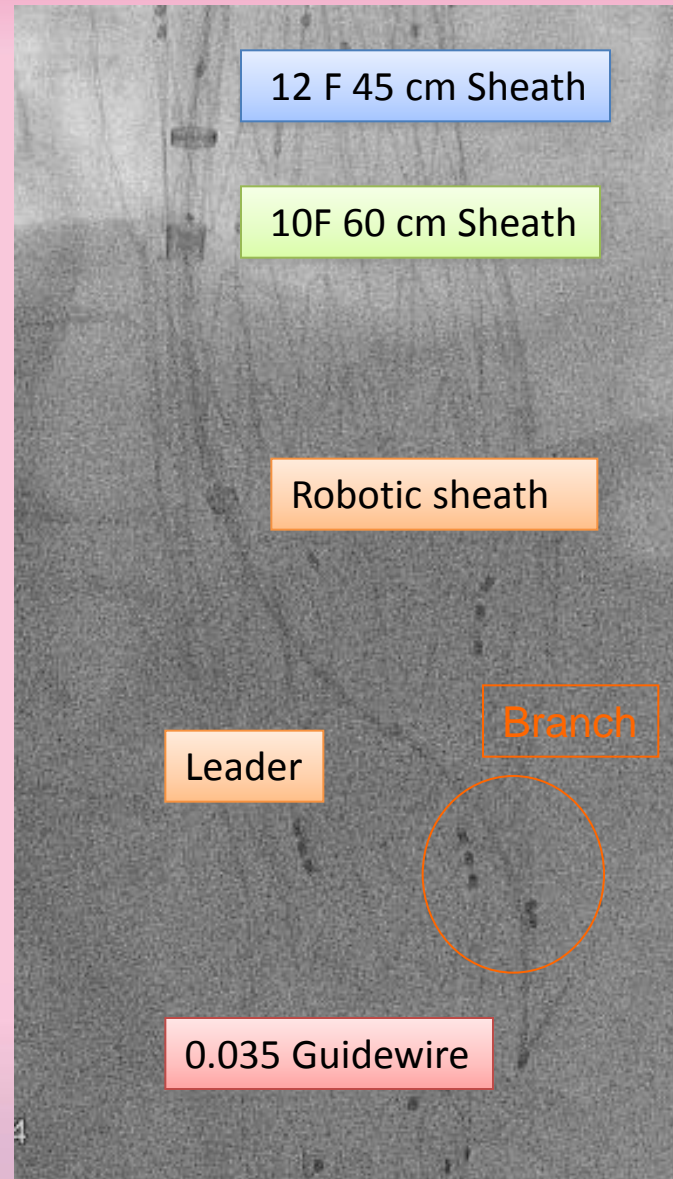
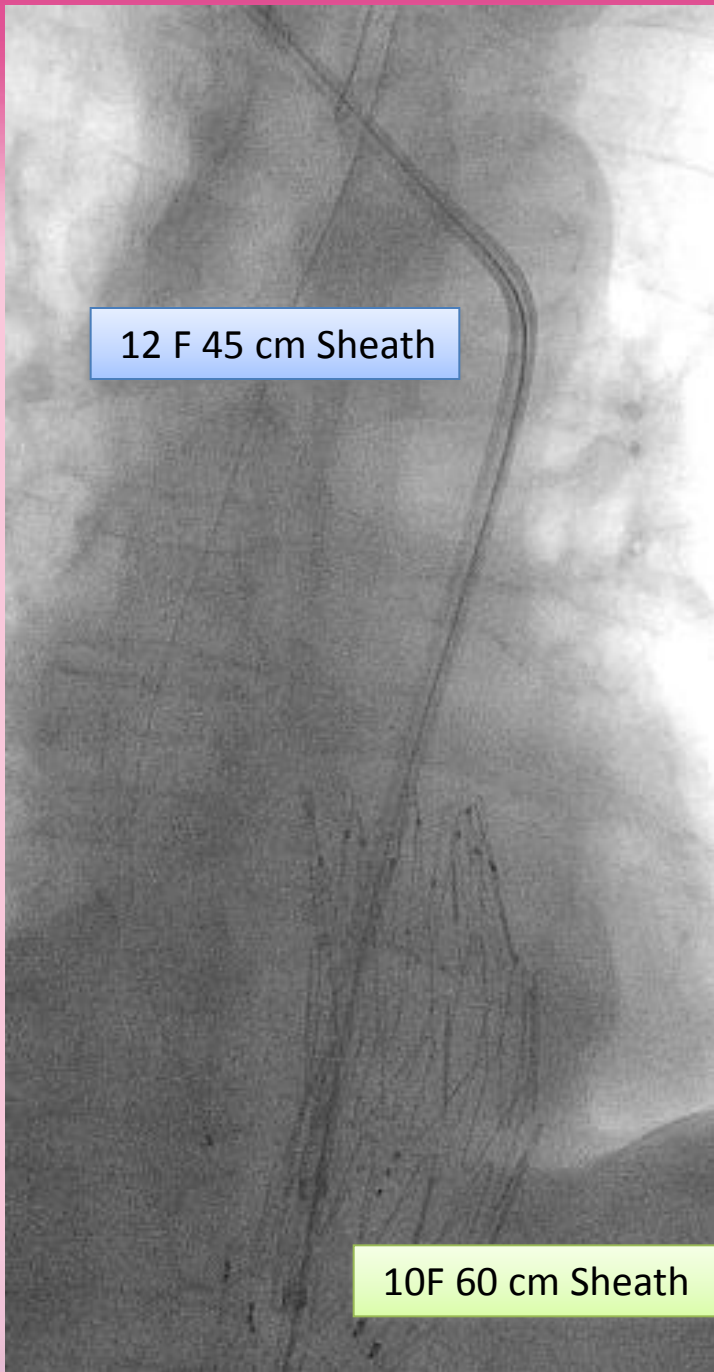
Branches: axillary approach



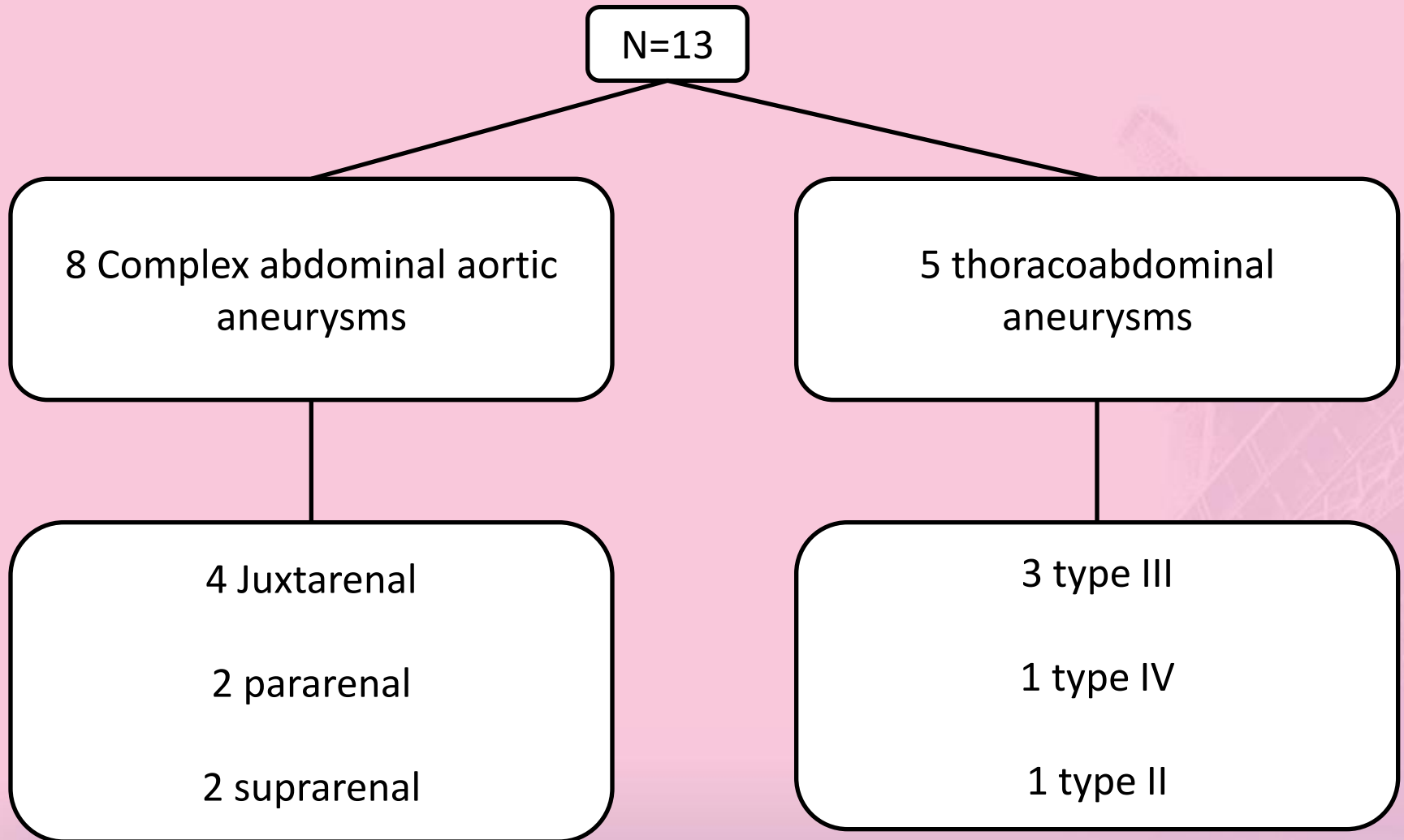
12 F 45 cm Sheath

10F 60 cm Sheath





Complex aortic aneurysm



Complex aortic aneurysm

9 Fenestrated grafts

2 Fenestrated and branched grafts

1 Branched graft

1 Chimney graft

34 vessels cannulated using the Magellan™ system

Complex aortic cases: Results

- **27/34 (79%)** target vessel catheterized with the robot in < 15 min
- Median cannulation time: **4 min 10s** (range: 40s-10 min 25s)
- **No target vessel injury** on selective angiograms
- **No access site complication**

Complex aortic cases: Results

- **Fenestrations: 7 failures**

 - 4 misalignments between fenestration and target vessel

 - 3 ostial stenosis

 - 7 target vessels successfully cannulated using conventional catheters (mean cannulation time: 32 min)

- **Branches and chimneys: no cannulation failure**

Complex aortic cases: Conclusions

- Limited experience
- feasible and safe
- do not compromise conventional cannulation
- Branches/chimney > fenestrated grafts:

more space to manipulate the distal tip in branched/chimney cases?

learning curve ?

Other Procedures: n =15

6 Embolisations

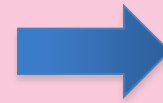
IIA before EVAR: 2
Type II EL: 1
Celiac trunk: 1
Splenic aneurysm: 1
Hepatocarcinoma: 1

5 Peripheral arterial occlusive disease

SFA: 3
Iliac: 1
Popliteal: 1

3 CAS

1 Renal stenting



Lesion reached/crossed in
100% of cases

No arterial injury

PROS

- ❖ Stability +++
- ❖ Pushability +++
- ❖ Facilitate the navigation in complex anatomies++
- ❖ Learning curve ++
- ❖ Less X-Ray exposure ?
- ❖ Less trauma ?

CONS

- ❖ Cost
- ❖ Cumbersome
- ❖ Accessibility
- ❖ Complex aortic cases: Branched/Chimney > fenestrated stent grafts

In the Near Future

- Smaller PVD vessels
- Coronary Artery Angioplasty and Stenting
- Embolization (Liver Tumor, Uterine Artery)

- Aortic Covered Stenting
- Fenestrated EVAR (Abdominal)
- Fenestrated tEVAR (Thoracic)

- Aortic Valve Replacement (TAVI)
- Mitral Valve Annuloplasty

- Neurovascular

Magellan Catheter
Current
(Dual telescoping 9F)

↑
CE Marked

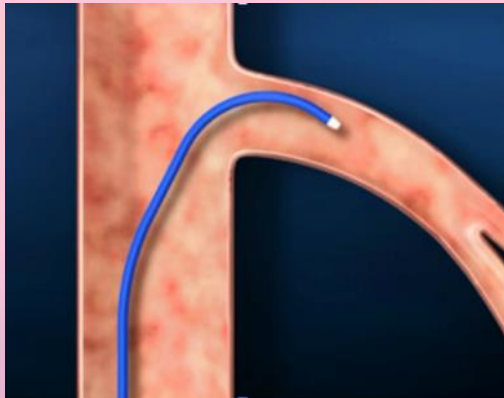
Magellan Catheter
Smaller
(Single 6F)

↑
CE Marked

Magellan Catheter
Larger
(Dual, 7F ID/10F OD)

Magellan Catheter
XL
(TBD)

Magellan Catheter
XS
(TBD)



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