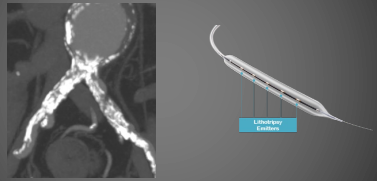


### Intravascular Lithotripsy (From Shockwave) A New Valuable Tool To Facilitate Access in F/BEVAR



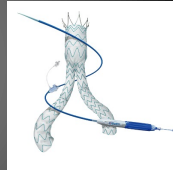
A. Katsargyris, N. Hasemaki, C. Klonaris, ELG Verhoeven  
Paracelsus Medical University, Nuremberg, Germany &  
2nd Department of Vascular Surgery, University of Athens, "LAIKO" Hospital, Greece

### Disclosures

- Cook Medical
  - Speaker fees
- W.L. Gore
  - Speaker fees
- Bentley Innomed GmbH
  - Consultant
- Artivion GmbH
  - Speaker fees

### Access Problems

- Less common issue for Standard EVAR nowadays...
  - Low Profile Devices



### Access Problems

- More relevant in F/BEVAR...
  - 20-22-24 Fr




### Endovascular Solutions for Bad Access

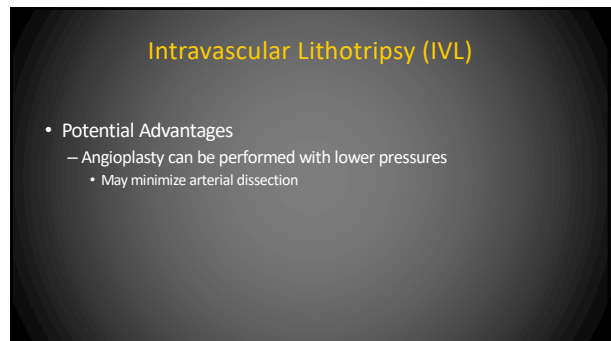
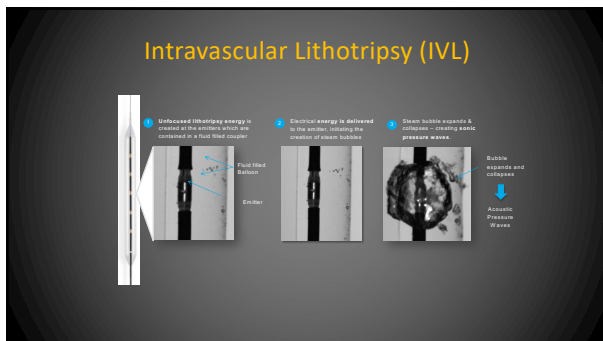
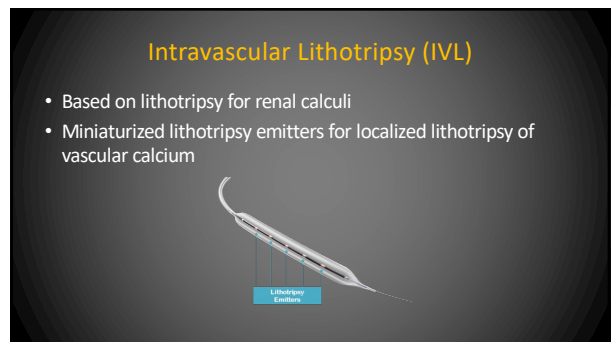
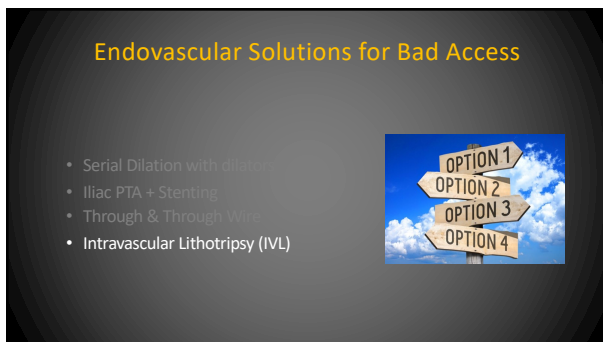
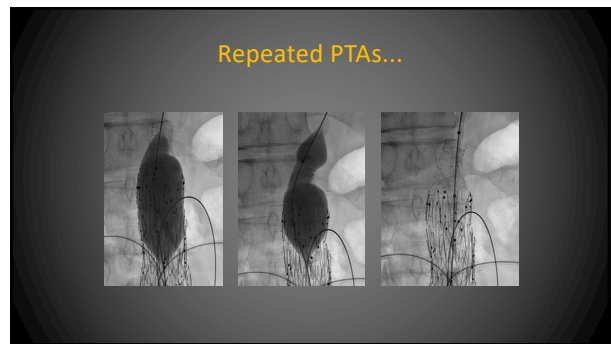
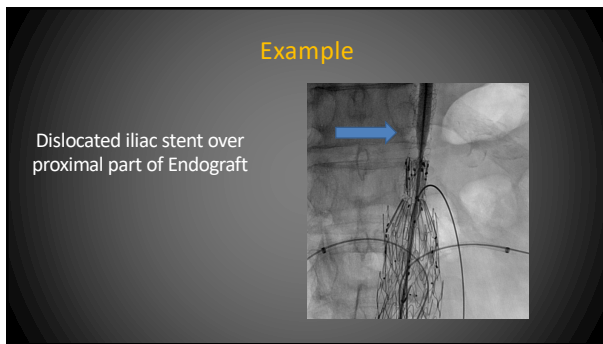
- Serial Dilatation with dilators
- Iliac PTA + Stenting
- Through & Through Wire
- Intravascular Lithotripsy (IVL)



### Iliac PTA + Stenting

- CAVE!
  - Stent-dislocation during Endograft insertion





### Intravascular Lithotripsy (IVL)

- Potential Advantages
  - Angioplasty can be performed with lower pressures
    - May minimize arterial dissection
  - Less recoil and need for stenting

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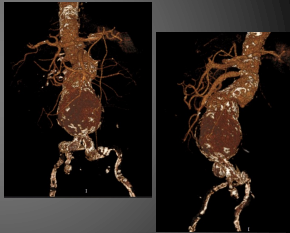
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  - Improved limb graft patency?

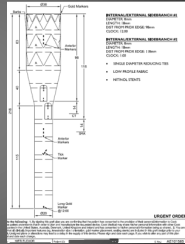
### IVL Example #1

- 69 YO Male Pt
- Pararenal AAA (Dmax: 9 cm)
- Calcified Iliac Access
  - Aborted endovascular repair in other hospital
- Comorbidity
  - Renal Failure (Dialysis)
  - CAD




### Plan

- 2x BEVAR
  - Renal arteries occluded
  - LP Graft (18F)




### Intravascular Lithotripsy (IVL)

- 0.014" wire
- 8 x 60mm ShockWave Balloon




### Postoperative CTA

- Patent Iliac Arteries
- No residual Dissection



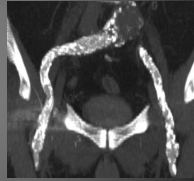
### IVL Example #2

- 83 YO Male Pt
- Pararenal AAA
  - After EVAR (AUI)
- Comorbidity
  - CAD
  - COPD



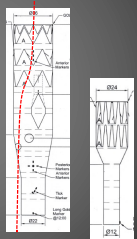
### Preoperative CTA

- Severe calcified unilateral iliac access

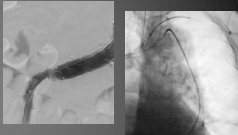


### Plan

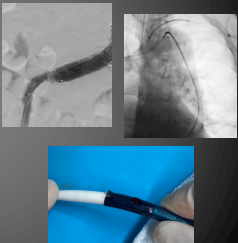
- F/BEVAR
  - 2 Fens (RRA, SMA)
    - Preloaded wire for RRA
      - Unilateral Iliac Access
  - 1 Inner Branch (CA)



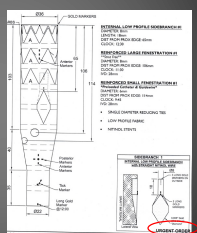
- Graft Introduction not possible
  - Despite PTAs and Through & Through wire



- Graft Introduction not possible
  - Despite PTAs and Through & Through wire
- Delivery Sheath damaged...after multiple introduction attempts

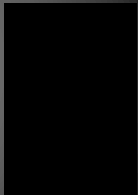


- New Graft ordered




### Intravascular Lithotripsy (IVL)


- 0.014" wire
- 8 x 60mm ShockWave Balloon



- Test with 18F Gore sheath



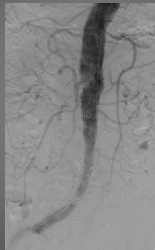
- Successful Graft Introduction
- Easy Reorientation of the graft
  - Catheterisation of RRA & SMA fens from above



### Iliac Access after IVL and Graft Introduction



### Final Angiography



### Nuremberg & Athens IVL Experience 2023-2024

- 20 pts, EVAR & F/BEVAR
  - Successful device introduction in all patients
  - No need for additional Iliac Stenting

### Current Strategy for Access in F/BEVAR

- 3 Groups of patients
  - Pts with no access issues: No IVL
  - Pts with questionable access: IVL ready to be used
  - Pts with definitely bad access: Preemptive IVL

### Conclusions

- Bad Access continues to be a challenge in some pts despite LP grafts
  - IVL Important new tool
    - Simple procedure
    - Less need for stenting
    - Enables graft introduction in some “no go” cases
    - Facilitates re-orientation of fenestrated graft
    - Improved iliac limb patency in the long-term?