



Feasability of Transthoracic Echocardiography to Demonstrate Presence and Accurate Location of Left Atrial Occluders

Venice Arrhythmias 2015

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Disclosure

- Travel support St. Jude Medical, Proctoring, Speakers Honoraria



Background

- Atrial Fibrillation: stroke and dementia
- Chronic oral anticoagulation (OAC): Gold standard
- Limit: Bleeding risk, medication interaction, patient incompliance, cost, follow up
- Risk of thrombembolism - risk of bleed, often increase in parallel
- Discontinuation OAC: elderly, frail, non-compliant, ETOH, gastrointestinal, multimorbidity, polypharmacy...
- Occlusion of Left Atrial Appendage (LAA-O):
Alternative
- *Watchman, Boston Scientific (FDA approved),
Amplatz Cardiac Plug/ Amulet AGA St Jude Medical*



Background

- Risk of dislocation
- ? Presence/ prior implantation
 - Poor historians
 - Fragmented/ multispecialty care
- Follow up:
 - Costly, invasive (TEE)
 - Radiation (Fluroscopy, X- Ray)
- Transthoracic Echo: (?) non feasible native left atrial appendage



Hypothesis

- Occasional notion: LAA- O visualized by **Transthoracic** Echocardiography (TTE)
- TTE: Feasible to assess presence and stable position of *St Jude Amplatzer Cardiac Plug/ Amulet LAA-O*.



Methods

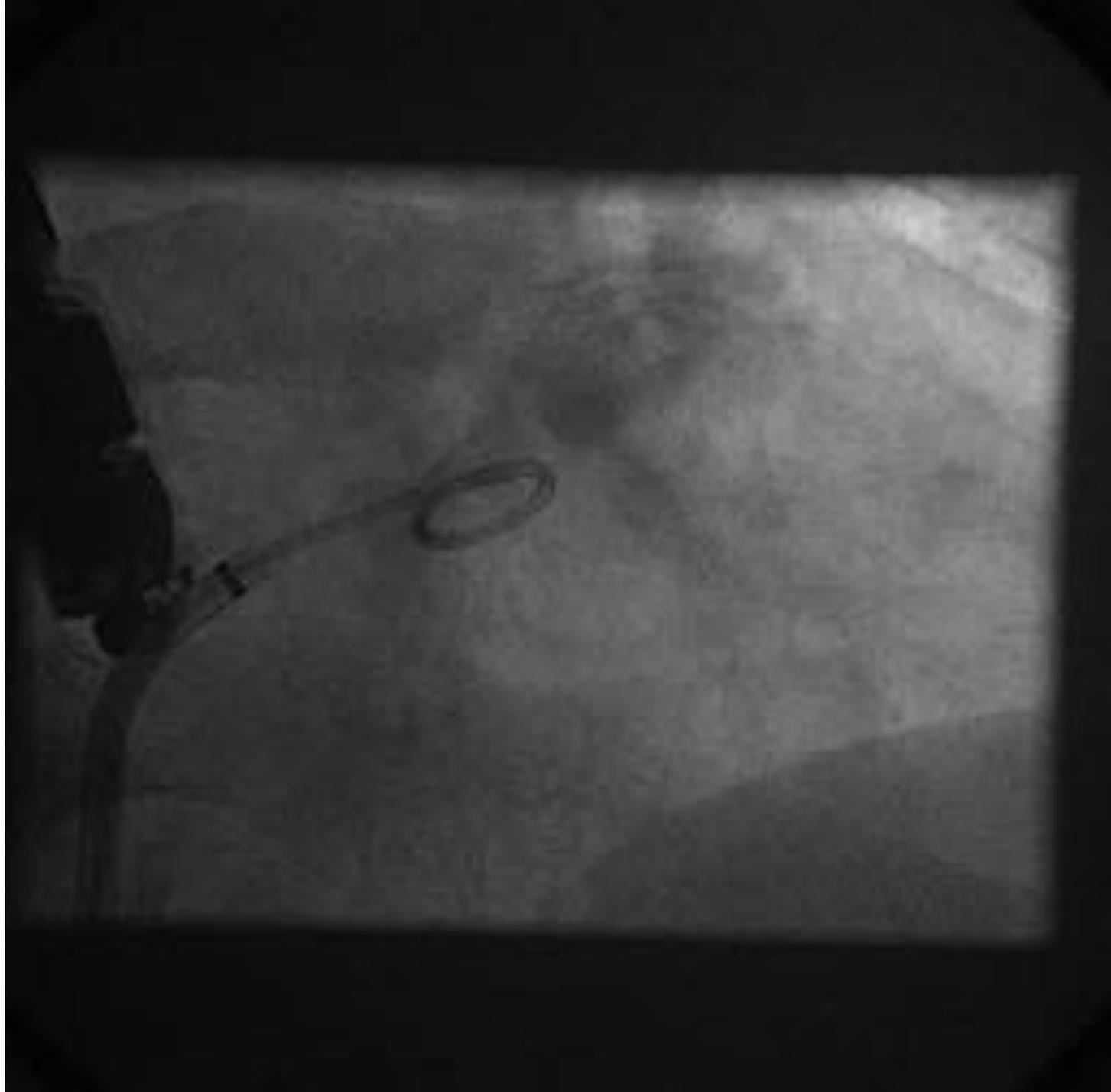
- 58 Pts
- 28 Male/ 30 Female
- BMI 19 – 35 kg/m²
- Placement of LAA-O (Amplatzer Cardiac Plug n= 44, Amplatzer Amulet n = 14, *St. Jude Medical*).
- Size (lobe) 18-31mm (median 24mm)
- Implantation guided by Fluoroscopy/ X-Ray and TEE

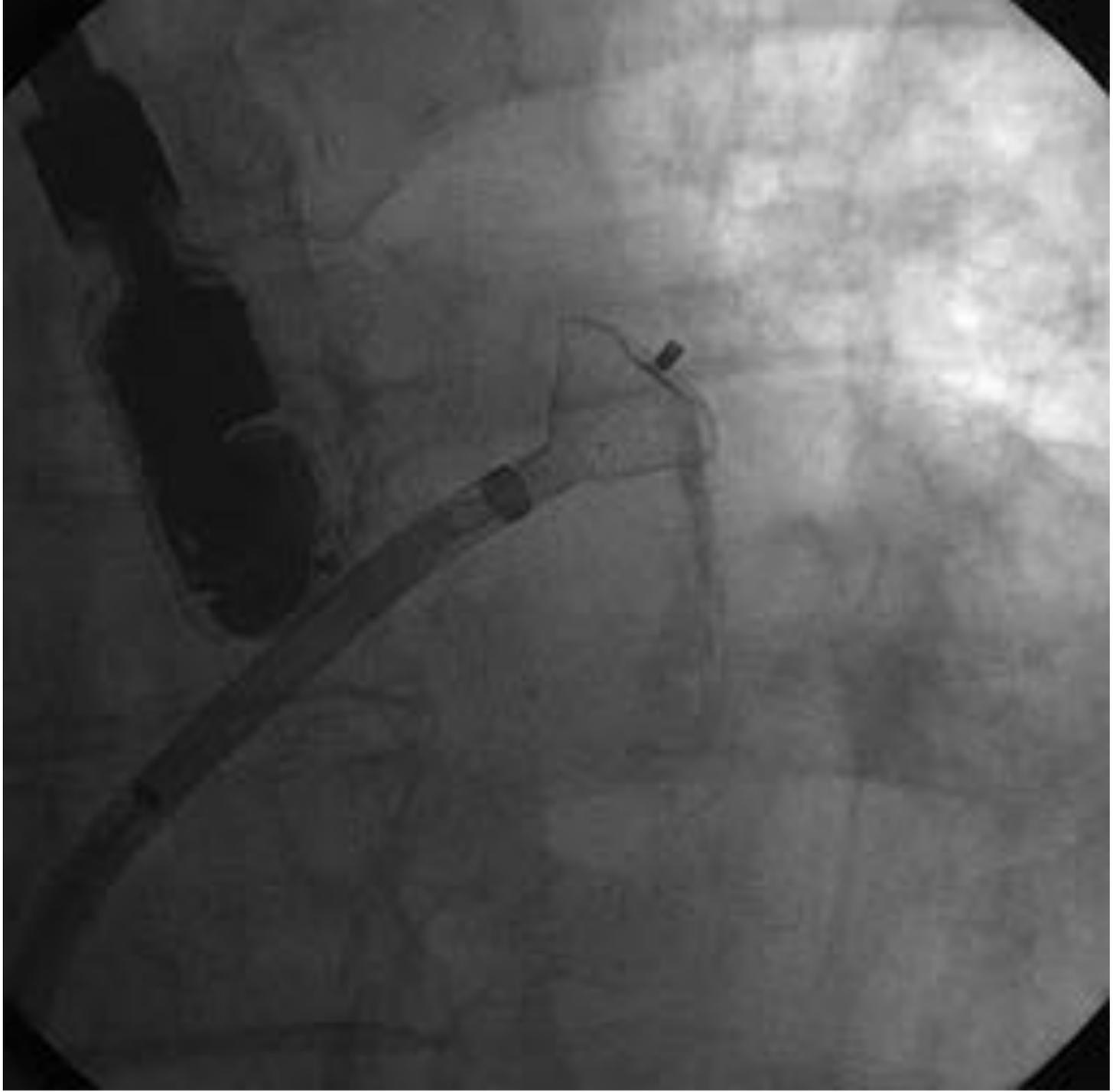


Patient Population

- Indication
 - Bleeding complications (24/58)
 - Inability to obtain adequate therapeutic INR (35/58)
 - Patient wish/ noncompliance (7/58)
 - Prior stroke on anticoagulation deemed embolic (1/58)
 - Anticoagulation non- feasible 2ry bleeding risk (44/58)







IR

Linsentemp: 38,4° C



74 fps / 100 mm

Allgemein

-----2D-----

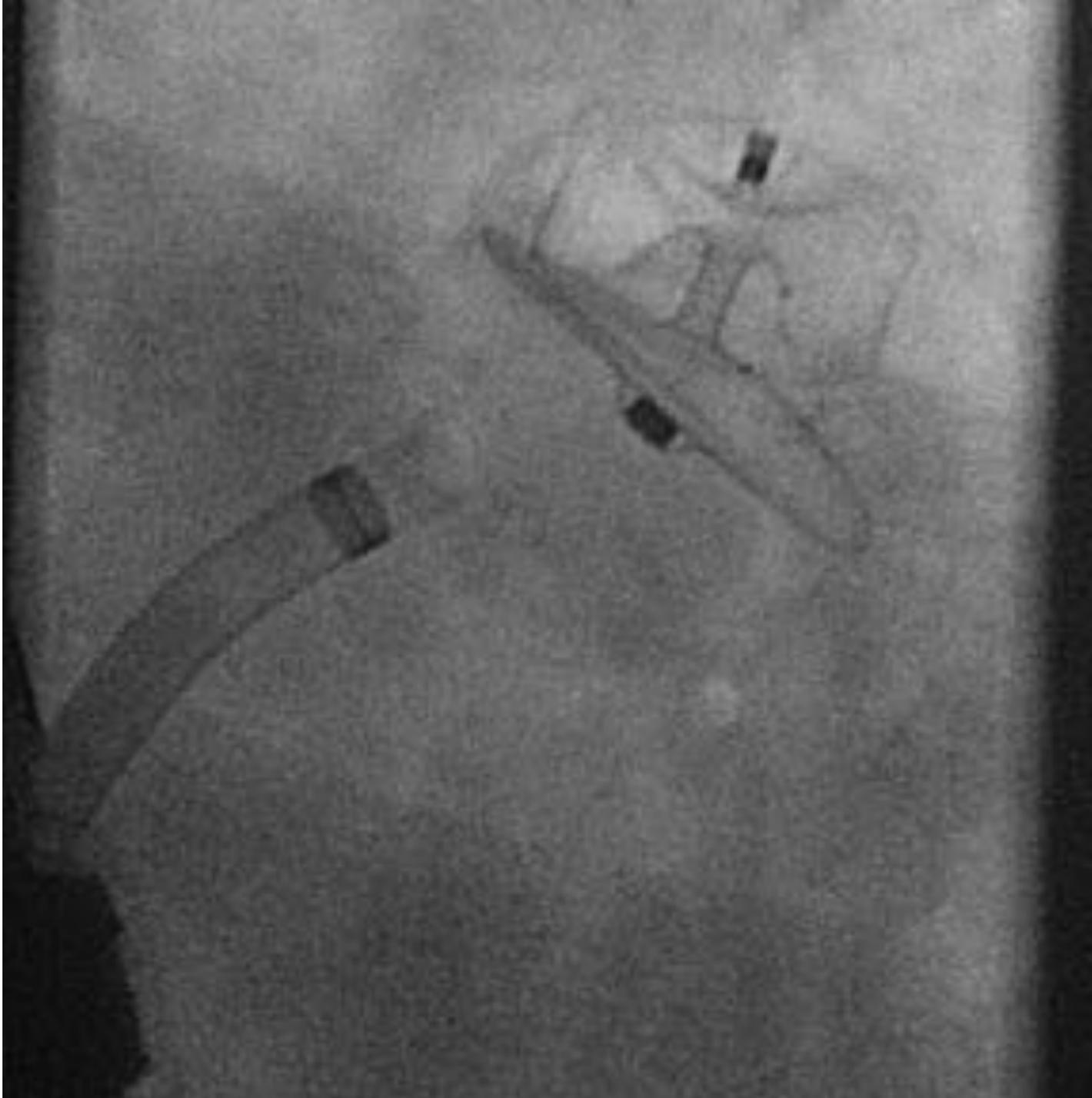
6.0MHz / 2 dB

TEQ: 3 / Offset: 0 dB

DB: 67 dB







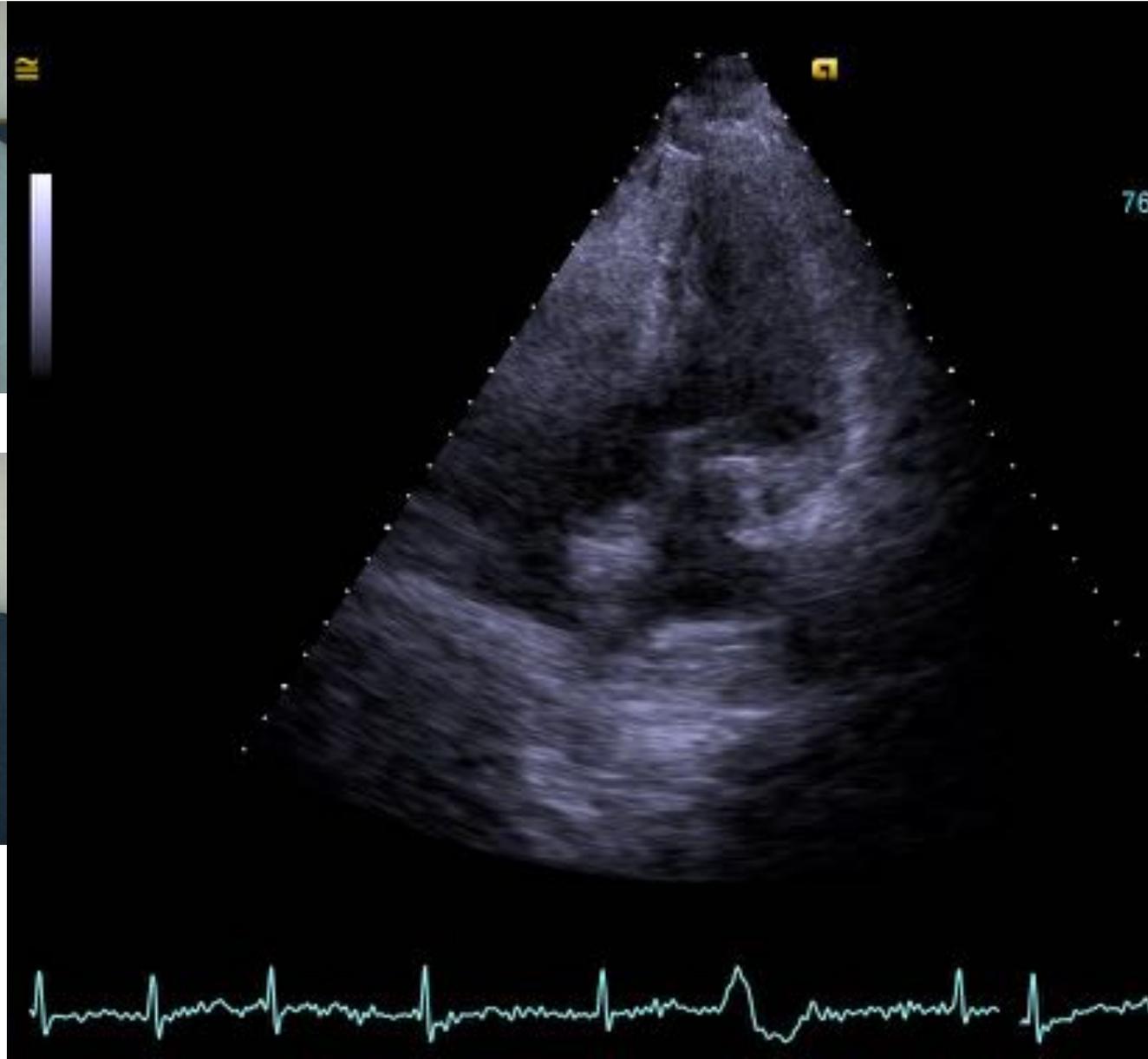
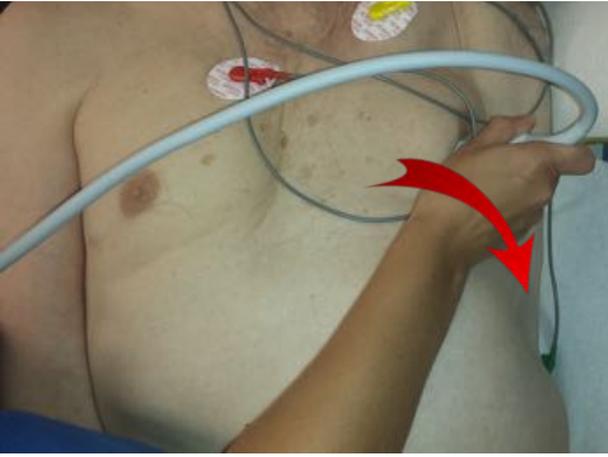


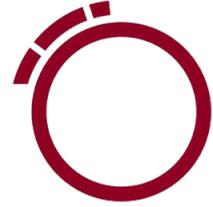
Transthoracic Echo

- Transthoracic Echocardiography performed bedside after procedure, after 4h and next day.
- *Vivid 7, General Electrics, Accuson Prime, Siemens*
- Image quality
 - Excellent/ good (50/58, 86%)
 - Poor (8/58, 14%)
 - No images (0)
- Apical Long Axis
- Subcostal

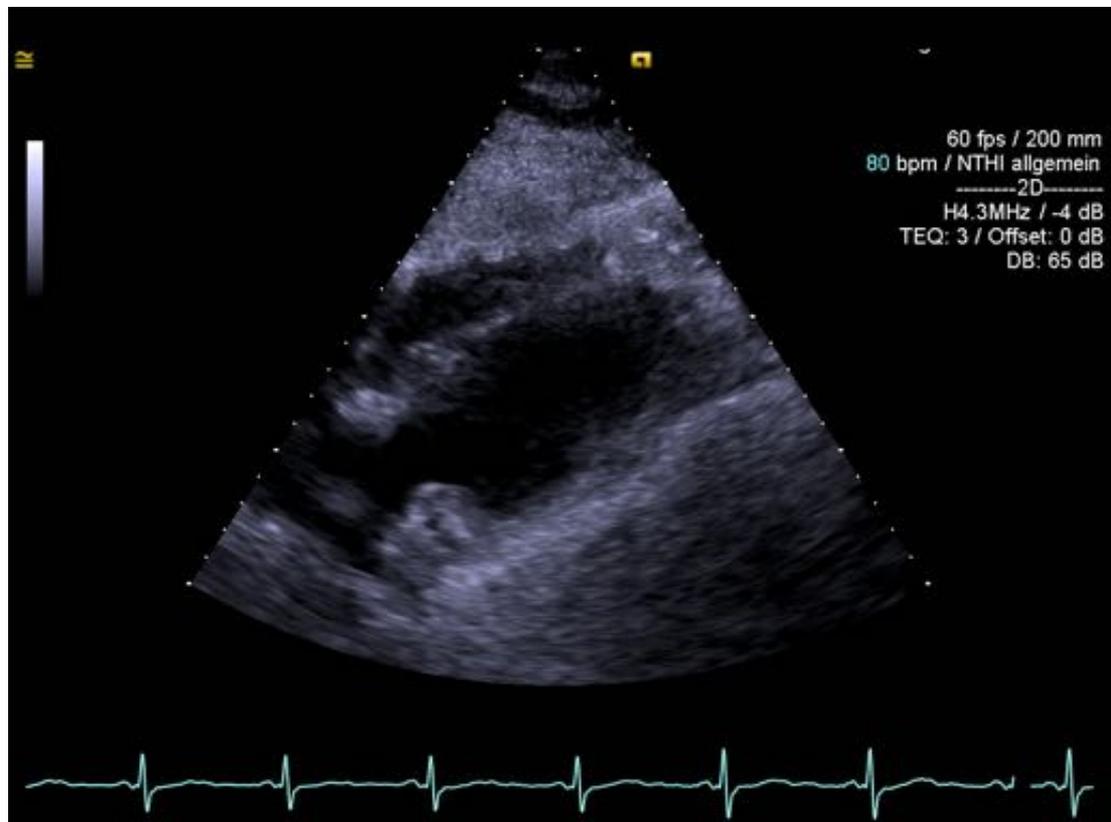


Transthoracic Echo





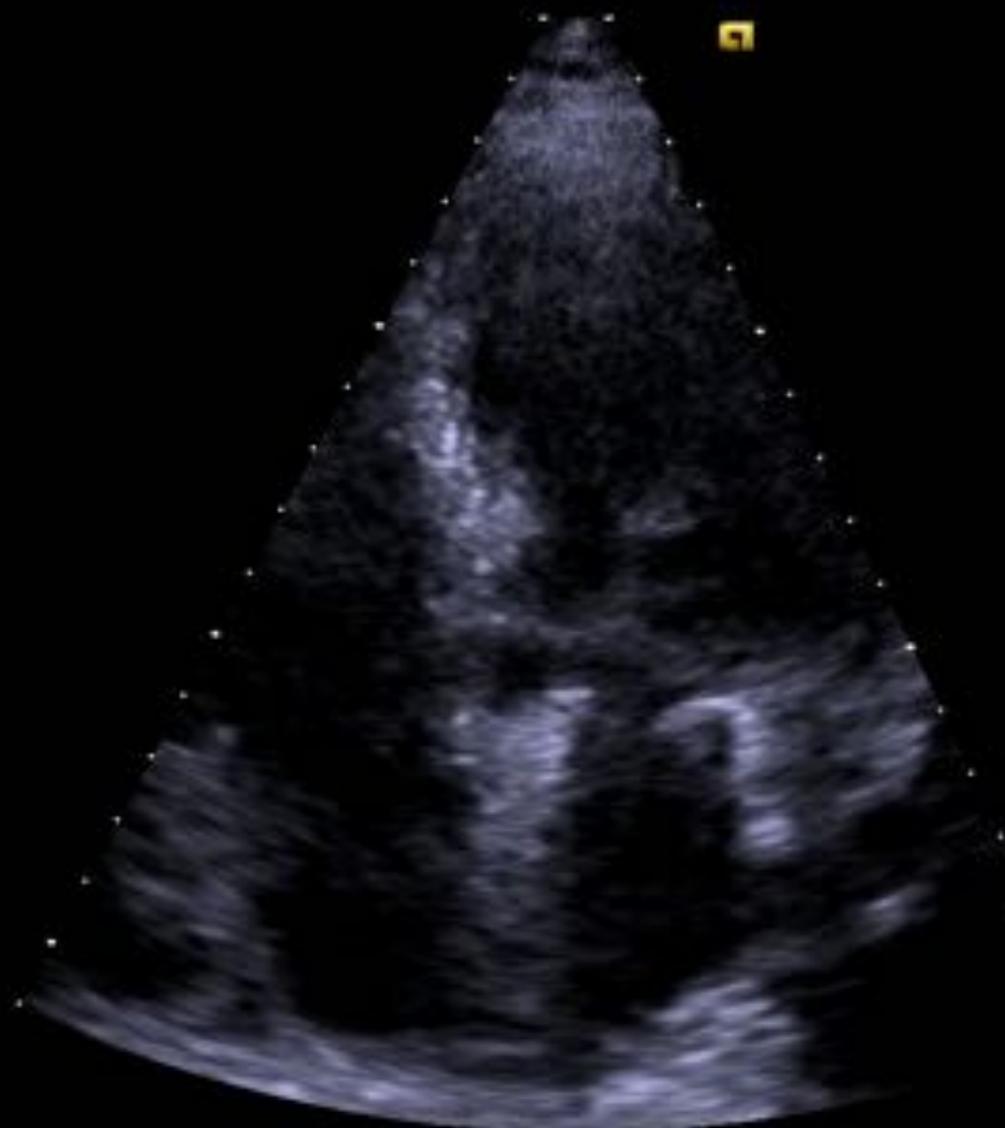
Transthoracic Echo



IR



85 fps / 160 mm
83 bpm / NTHI allgemein
-----2D-----
H4.3MHz / 5 dB
TEQ: 3 / Offset: 0 dB
DB: 65 dB





85 fps / 160 m
77 bpm / NTHI allgem
-----2D-----
H4.3MHz / 5
TEQ: 3 / Offset: 0
DB: 65



IR



85 fps / 160 mm
81 bpm / NTHI allgemein
-----2D-----
H4.3MHz / 3 dB
TEQ: 3 / Offset: 0 dB
DB: 65 dB



IR



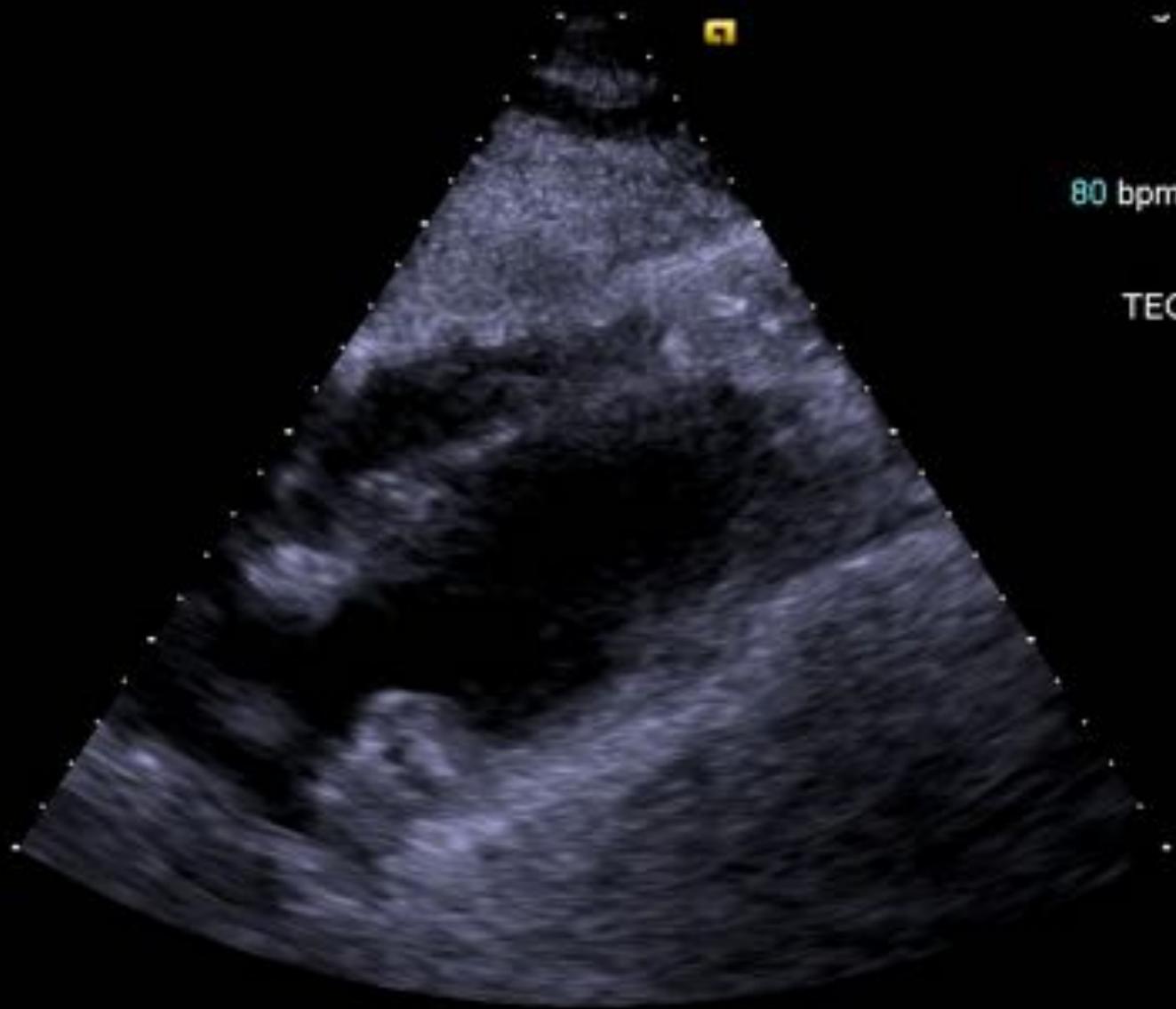
142 fps / R 70,80 mm
84 bpm / NTHI allgemein
-----2D-----
H4.3MHz / 6 dB
TEQ: 3 / Offset: 0 dB
DB: 65 dB



IR



60 fps / 200 mm
80 bpm / NTHI allgemein
-----2D-----
H4.3MHz / -4 dB
TEQ: 3 / Offset: 0 dB
DB: 65 dB





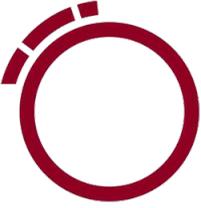
Results

- 58 Patients
- 1 Pericardial effusion, no other MACE
- No early embolisation
- No strokes (?)
- No other major bleed (?)



Results

- All LAA-O identified in typical location (100%)
- 55 apical views
- 3 only in Subcostal View
- Reproducibility 100% next day.



Personel

- Experienced echocardiographers
- 3 residents: <30 Transthoracic Echocardiograms



Trainees

- 18/ 22 (82%) LAA-O successfully identified.
- Presence (22/22) confirmed by experienced echocardiographer.



Limitations

- *AGA Amplatzer, Amulet Occluders (St. Jude Medical)*
- *No Watchman, Lariat...*
- Non- blinded
- Leaks
- Device related thrombus (screwshaft)
- Follow up



Conclusions

- Transthoracic Echocardiography: simple, feasible, reproducible to assess presence, stable position of LAA-O
- Standard in patients with history of LAA-O, questionable history of cardiac interventions prior to start OAC
- Considered follow up procedure instead of TEE, fluroscopy (if OAC no option even if leakage).

Thank You For Your Attention!



- Abed Sallam
- Karin Simon
- Elona Pellumbi
- Samer Mahfouz
- Reiner Hoffmann
- Roy Hofmann
- Yassein Aboud
- Daniela Appis
- Sieglinde Wittmann
- Mohamed Alzaim