Use of Fusion Imaging in F/BEVAR
Does it work?

Athanasios Katsargyris, MD, Eric LG Verhoeven, MD, PhD
Vascular and Endovascular Surgery, Paracelsus Medical University, Nuremberg, Germany
Disclosures

• None
Hybrid OR has become the Standard of Care in EVAR

- Sterile environment
  - Open access
  - Hybrid Procedures
  - Conversion
- Safer environment team
- Logistics
- OR-lights
- Fusion Imaging
Fusion Imaging

✓ Reduce contrast media
✓ Reduce radiation
✓ Shorten OR time
Fusion Imaging

Intraoperative C-arm cone-beam computed tomography in fenestrated/branched aortic endografting

Martijn L. Dijkstra, BA, Matthew J. Eagleton, MD, Roy K. Greenberg, MD, Tara Mastracci, MD, and Adrian Hernandez, MD, PhD, Cleveland, Ohio

Impact of Hybrid Rooms with Image Fusion on Radiation Exposure during Endovascular Aortic Repair


Vascular Surgery, Hôpital Cardiologique, CHRU de Lille, INSERM U1008, Université Lille Nord de France, 59037 Lille Cedex, France
Radiology, Hôpital Cardiologique, CHRU Lille, INSERM U1008, Université Lille Nord de France, 59037 Lille Cedex, France
Fusion Technology
2D/3D Registration

Low dose Fluoro
LAO

Low dose Fluoro
RAO
Evolution of Fusion Technology from manual.....
Evolution of Fusion Technology
..... to automated
Steps
Preparation of pre-op CT
Automated Segmentation
Automated Segmentation
2D/3D Registration
2D/3D Registration
Automated Registration
Manual Correction
Manual Correction
Deployment with Fusion
LRA Catheterization
RRA Catheterization
Catheterization SMA
Stenting RRA
Stenting SMA
Completion DSA
Do not forget Basic Rules....

- ALARA
  - Collimation
  - ↓↓ DSA
  - ↓↓ Angulation
  - Protection Shields
Collimation

Dose saving of 57%
just by using collimation to the area of interest!
DSA only when really needed

Low dose DSA
321mGy/min

Fluoro w. contrast
(Fluorostore) 12 mGy/min
High quality Fluoro only when really needed

High Dose Fluoro
32 mGy/min*

Low dose fluoro
2 mGy/min **

- 55 nGy/pulse, 10 Pulse / sec
- 23 nGy/pulse , 4 Pulse /sec
Conclusions

• Fusion imaging works!
  – Advantageous
    • Automated workflow with syngo EVAR guidance
  – To be included in Standard of Care

• Do not forget ALARA principles
  – Pulse Fluoro and Collimation
  – Fluoro with contrast instead of DSA