How Fusion Imaging changed my LIFE?

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How Fusion Imaging changed my Workflow for FEVAR

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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

- less contrast media
- less radiation
- shorter OR time
Fusion Imaging

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

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

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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
Case Presentation

• 66 YO Male
• Juxtarenal AAA
  – Dmax: 61mm

• Co-morbidity
  – CAD (CABG)
  – COPD
→ No Proximal neck
2 Right Renal Arteries (RRA)
Open Inferior Mesenteric Artery
Distal Landing Zones and Access Vessels
Plan

- Embolisation IMA + lower RRA
- 3x FEVAR
Embolisation IMA + lower RRA
Preparation of pre-op CT
Automated Segmentation
Patient preparation
2D/3D registration
Automated registration
Manual correction
Catheterization LRA and RRA
Catheterization SMA
Stenting  RRA
aDSA RRA
Stenting LRA
aDSA LRA
Stenting SMA
aDSA SMA
Completion aDSA
Closing access
High quality Fluoro only when really needed

4 pulses/sec

7.5 pulses/sec
High quality Fluoro only when really needed

High contrast Fluoro 32 mGy/min*

Low dose fluoro 2 mGy/min **

- 55 nGy/pulse, 10 Pulse/sec
- ** 23 nGy/pulse, 4 Pulse/sec
DSA only when really needed

Low dose DSA 321mGy/min

Fluoro w. contrast 12 mGy/min
Conclusions

- Do not forget ALARA principles
  - Pulse Fluoro and Collimation
  - Fluoro w. contrast instead of aDSA

- Fusion imaging
  - Automated workflow with syngo EVAR guidance
  - To be included in Standard of Care

- PS Radiation in this case: DAP of 27 Gy/cm²
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