Next Generation Imaging for EVAR

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Disclosure

Speaker name:

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I have the following potential conflicts of interest to report:

- Consulting: Visage Imaging, Merit Medical, Siemens Healthcare, W. L. Gore, Bard
New robotic imaging system
Siemens - ARTIS pheno
Siemens Artis pheno @ MHH

- first Installation worldwide 10/2016
- customer use test ongoing
- MHH / Siemens: collaboration with regard to 2D and 3D imaging
- 3 month of experience
Siemens Artis pheno @ MHH

- First EVAR / IBE experiences with pheno
- Collaboration with Vascular Surgery
- One issue: EVAR is not our main focus ...
Siemens Artis pheno @ MHH

Remarkable Facts

- „Clearance“
- User interface
- Patient table
- Infection control
- 2D Imaging
- 3D Imaging
New large bore C-arm: more space

More space and positioning flexibility

- Unmatched free space of 95.5 cm$^1$)
- Patient positioning is simpler
- Steeper angulations possible
- Superior access to patients

95.5 cm
(37.5”)
open space
More space...

...for lateral projections: 2D3D-Fusion
More space...
...for EVAR Guidance
More space...
...for „spider view“ in CTEPH patients
More space...
...for “spider view” in CTEPH patients
More space...
...for needle guidance
More space...
...for needle guidance

Coaxial puncture of an Endoleak using Needle Guidance®
New table-side Interface
PURE® - on screen menu

3D Applications can be controlled from the table side
Heavy weight table

Patient weight
280 kg
(617 lbs)

+15°/-20°
Tilt

+15°/-15°
Cradle
New table side control
„multi-tilt table“ – „easy float tabletop“
Tilt table – CO2 imaging

Angiodroid® - CO₂ Angiography on pheno®
Engineered for infection control

- Smooth and antimicrobial surfaces
- Sealed tableside Pilot Module
- Internal cable guidance
- Ability to ensure sterile working conditions
No ceiling mounted components
High performance Tube

**Focused power for sharper images**
- Unique flat emitter technology
  - High power
  - High resolution
  - Supports lower dose

**Powerful tube allows for better image contrast in obese patients and steep angulation**
New Detector Technology

New flat panel detector
• zen-technology

Features
• Live 2k imaging during fluoro
• 92 fps readout for syngo DynaCT
• Ultra low dose imaging
  • Detector efficiency DQE: 79%
  • Down to 1 nGy detector entrance dose per frame
1st Pheno® patient: Femoral bone metastasis of a renal cell carcinoma for embolization
Artis Pheno® - DSA Imaging

1st Pheno® patient: Femoral bone metastasis of a renal cell carcinoma for embolization
Artis Pheno® - DynaCT® Imaging
syngo DynaCT in lateral position
Cone Beam CT 3D imaging

Short scan times help to reduce contrast agent

- Fast rotation up to 100 °/sec allow shorter bolus times down to 4 sec
- 92 frames/sec allow good image quality
Large Volume DynaCT®
Portrait mode

7s large Volume 360° DynaCT®
cc 19+4 = 23cm cm
DynaCT® of the lung

regular DynaCT®
cc 19 cm / diameter: 25 cm
Large Volume DynaCT® of the lung

7s large Volume 360° DynaCT®
cc 19 + 4 = 23cm / diameter: 25 + 8 = 33cm
Conclusion

**Siemens Artis® pheno®**

- New imaging hardware providing Dose-efficient 2D and 3D imaging
- Re-designed user interaction
  Table-side control + On screen menu for applications to make best use of imaging information
- New “multi-tilt easy float table”
- Comprehensive hygiene concept with sealed surfaces

→ 2. Generation Robotic Angiographic System – perfect for image guidance in challenging interventions
Thank you!

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