SST Servizio Sanitario della Toscana

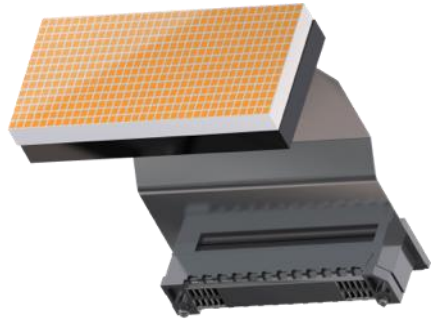
UOC RADIOLOGIA

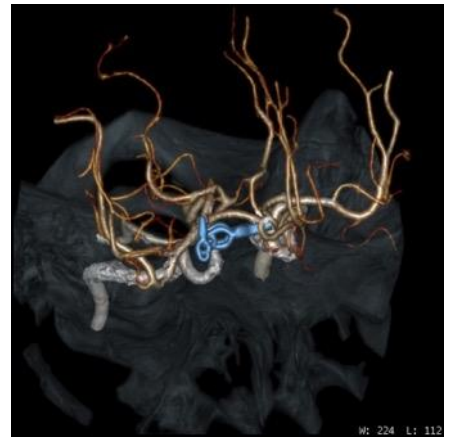
OSPEDALE S. MARIA ALLA GRUCCIA

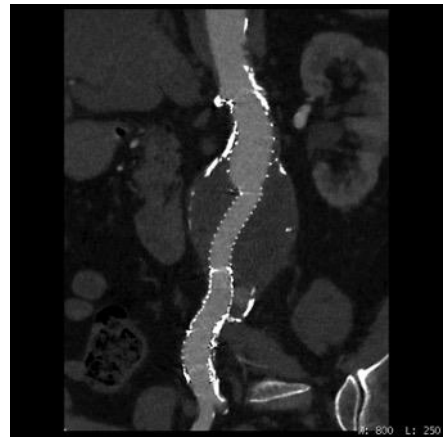
Detettore imaging Clarity consente di aumentare la risoluzione spaziale

0.28 mm

Aumento della Risoluzione Spaziale







Clarity detector… design inherited from Revolution CT for 0.28 mm spatial resolution

Clarity data acquisition system… integrated detector module reduced noise

ASiR-V next generation iterative reconstruction… improve spatial resolution using higher resolution kernels

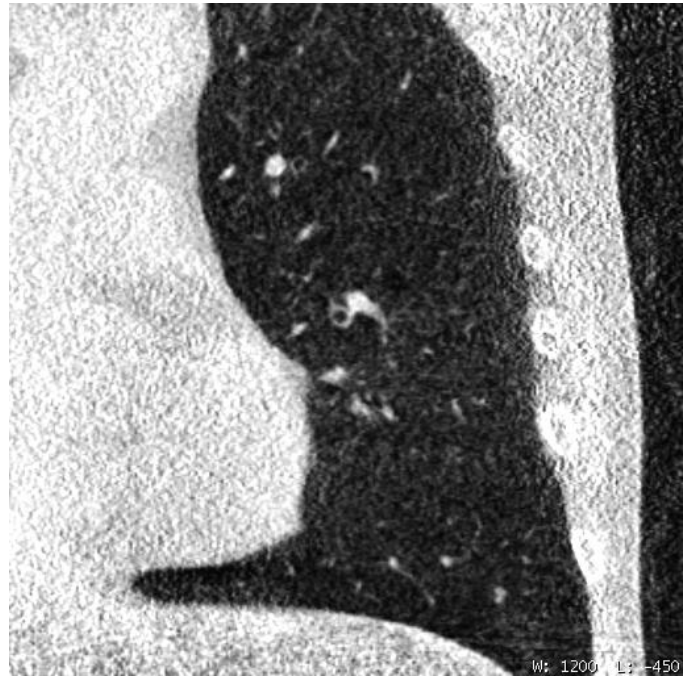
ASiR-V* Algoritmo che permette di abbassare la dose

82%

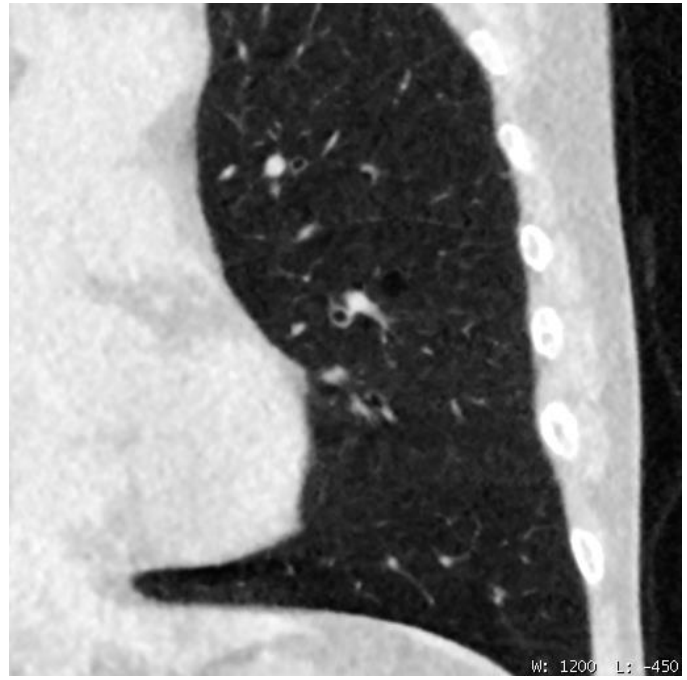
RIDUZIONE DELLA DOSE DI RADIAZIONI

Fino all'82% dose ridotta.

Nell'imaging di routine, è stato dimostrato che il sistema ASiR-V riduce la dose fino all'82% rispetto alla ricostruzione FBP standard con la stessa qualità dell'immagine



Ultra-low-dose chest (0.08 mSv[1]) reconstruction with filtered back-projection



Same study reconstructed using ASiR-V

Acquisition: Helical, 80 kV, 6 mAs, 0.984 pitch, 0.17 mGy CTDIvol, 5.95 mGy-cm DLP, ASiR-V 100%

SST Servizio Sanitario della Toscana

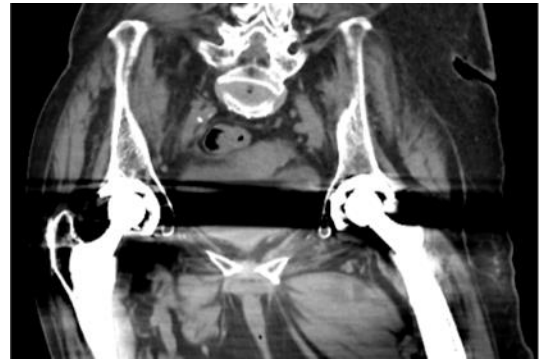
Sistema MAR –Metal Artifact Reduction technology

Progettato per ridurre la quantità di fotoni necessari (dose) e gli artefatti di striatura causati da corpi metallici, per esempio:

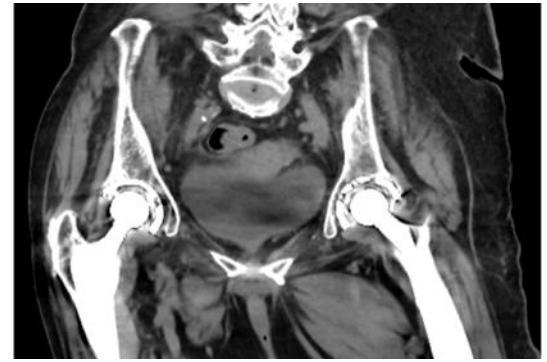
Protesi Anca
Clip vascolari
Viti
Otturazioni dentali

Un’unica acquisizione: non è richiesta alcuna scansione aggiuntiva

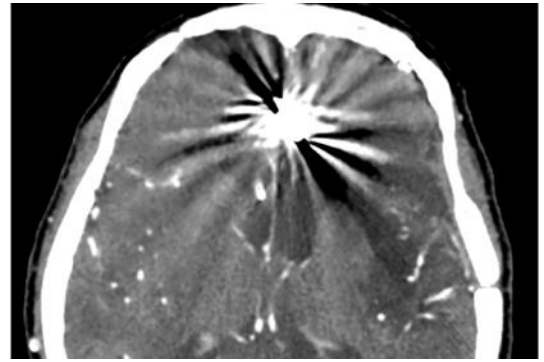
Tc dell'addome con impianto dell'anca



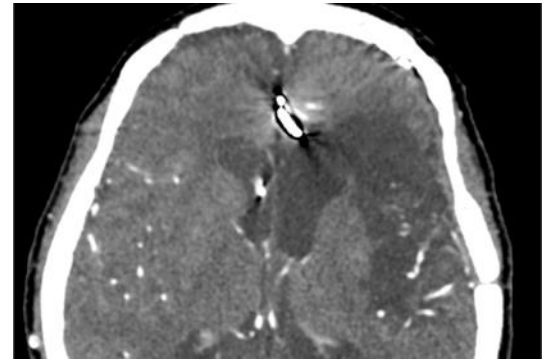
Without Smart MAR



With Smart MAR



Without Smart MAR



With Smart MAR

Tc cranio con clip vascolari

Sistema ODM (Organ Dose Modulation) per ridurre la dose agli occhi, alla tiroide e agli organi radiosensibili

Acquisition

<u>Carotids</u>

120 kV

150-500 mA

1.531 pitch

0.35 sec/rot

396 mm in 2.6 s

264 mGy-cm DLP

<u>Brain w/o contrast</u>

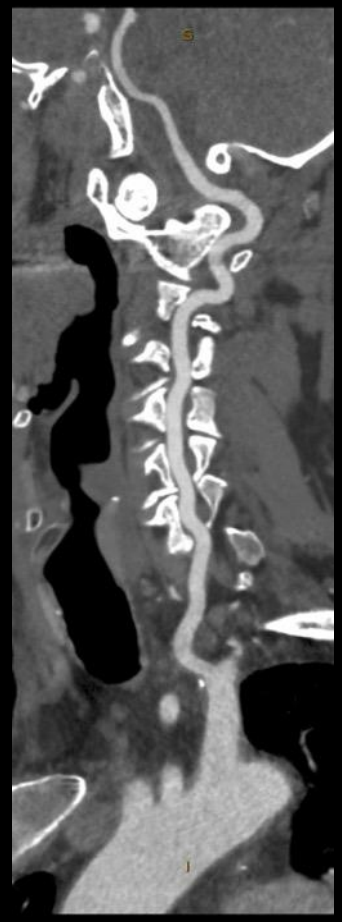
80-250 mA

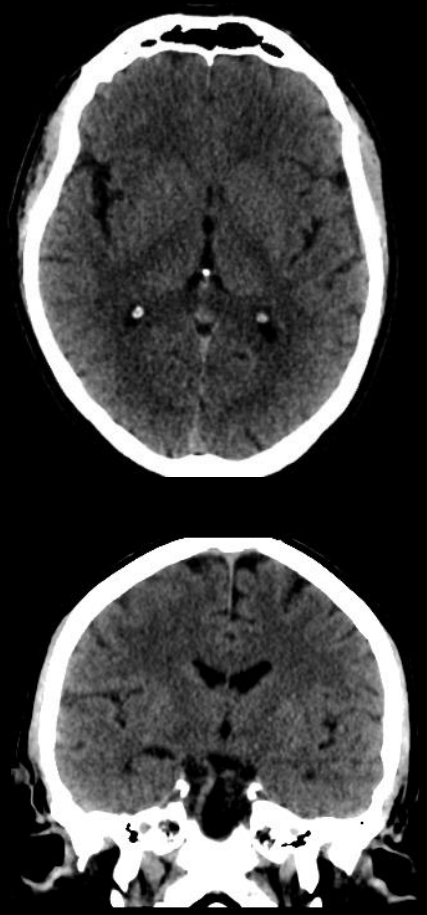
0.531 pitch

5.2 NI

0.8 s/rot

584 mGy-cm DLP



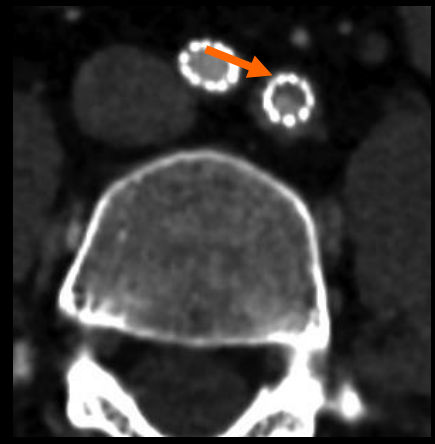


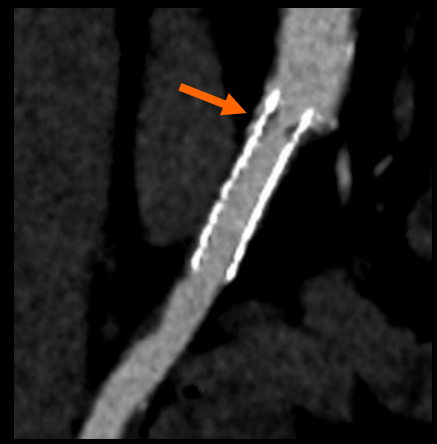
SST Servizio Sanitario della Toscana

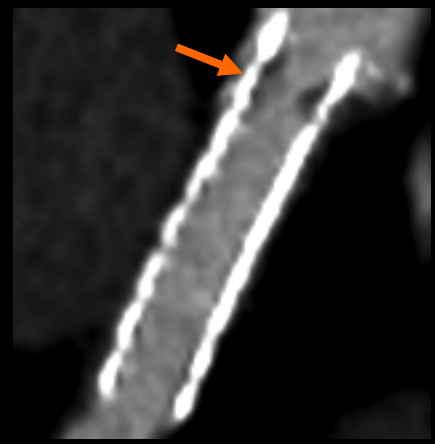
Clarity imaging – migliore risoluzione spaziale

Visualization of in-stent restenosis

629 mGy-cm DLP







Follow-up della pancreatite, riduzione della dose del 59% con Revolution EVO con ASiR-V rispetto ad altra CT

Optima CT660

TC Revolution EVO

Acquisition

120 kV

BMI 24

Helical

Standard kernel

ASiR 50%

12.2 mGy-cm CTDIvol

Acquisition

100 kV

BMI 24

Helical

Standard kernel

ASiR-V 40%

5.0 mGy-cm CTDIvol

ASiR-V*
Migliora la risoluzione di contrasto fino al 135% alla stessa dose

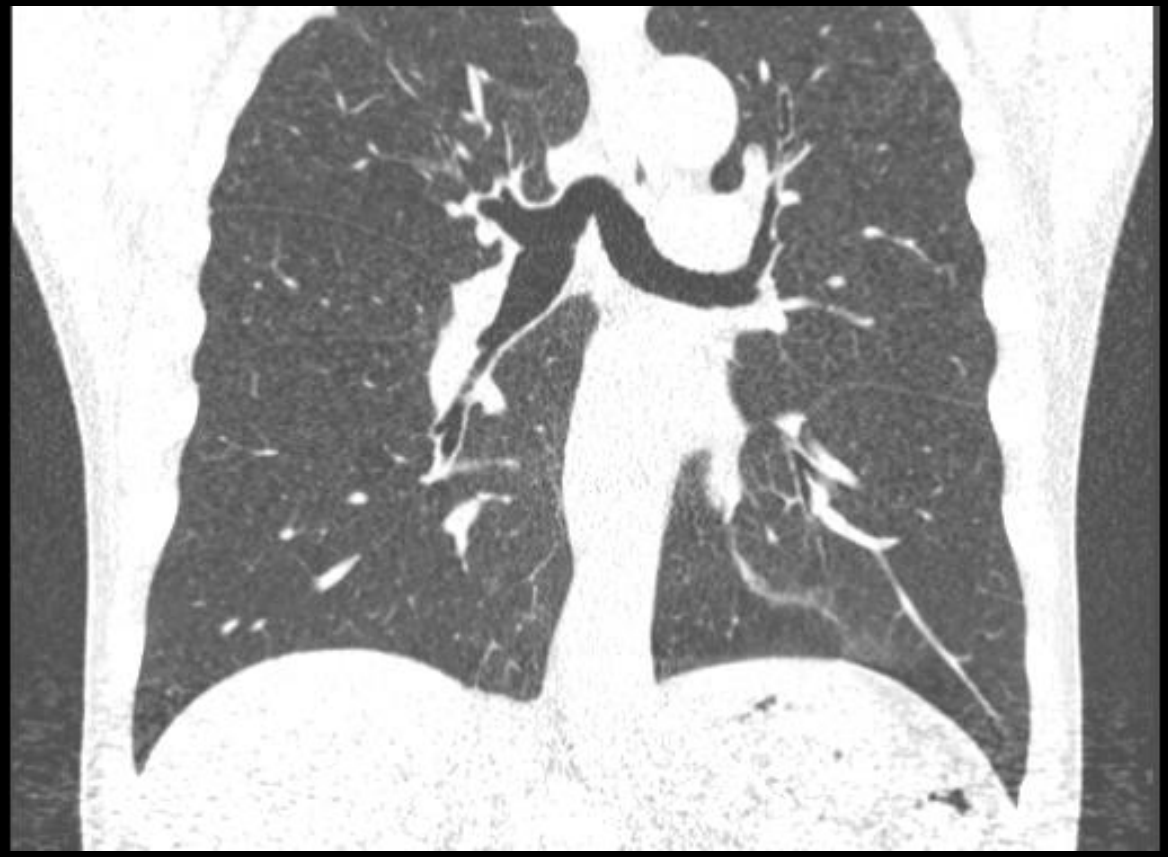
Filtered back projection
Noise standard deviation = 43.8

ASiR
Noise standard deviation = 33.0

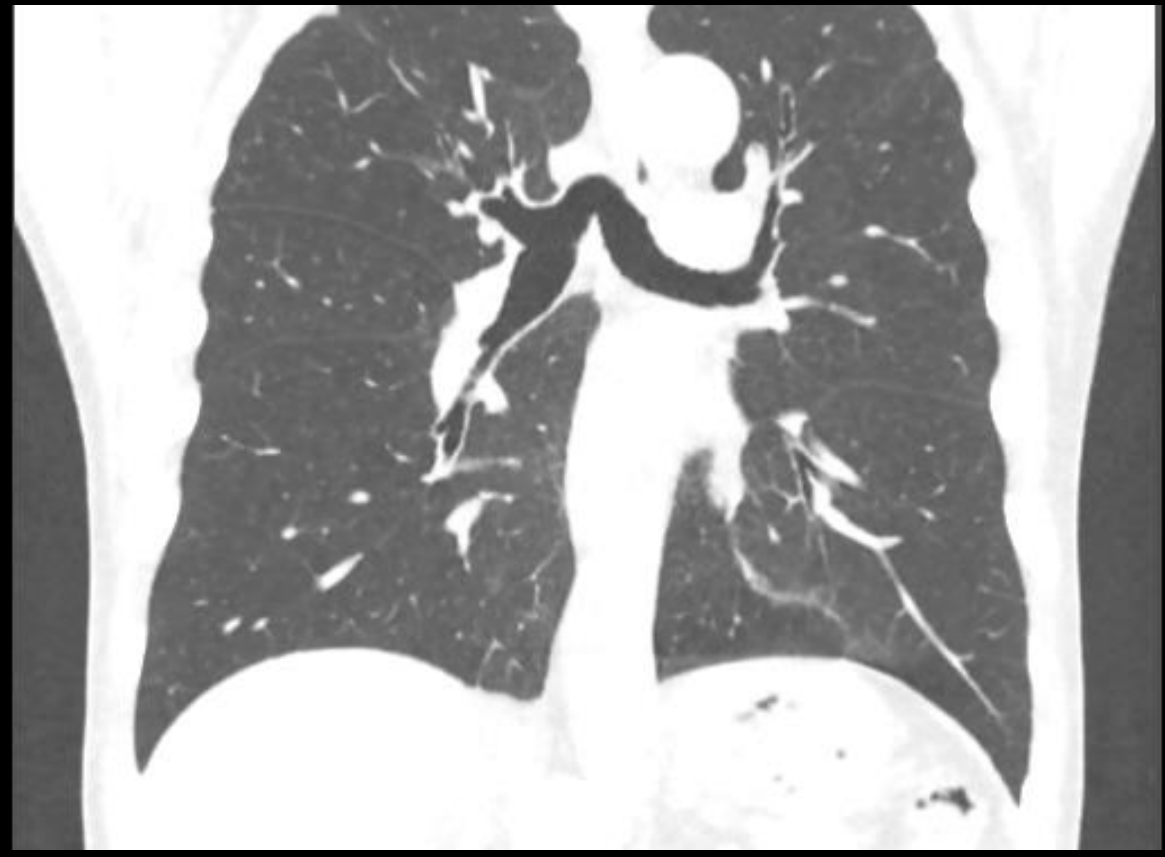
ASiR-V
Noise standard deviation = 14.1

SST Servizio Sanitario della Toscana

Torace a basso dosaggio, 0,5 mSv1, per esempio, per il follow-up oncologico



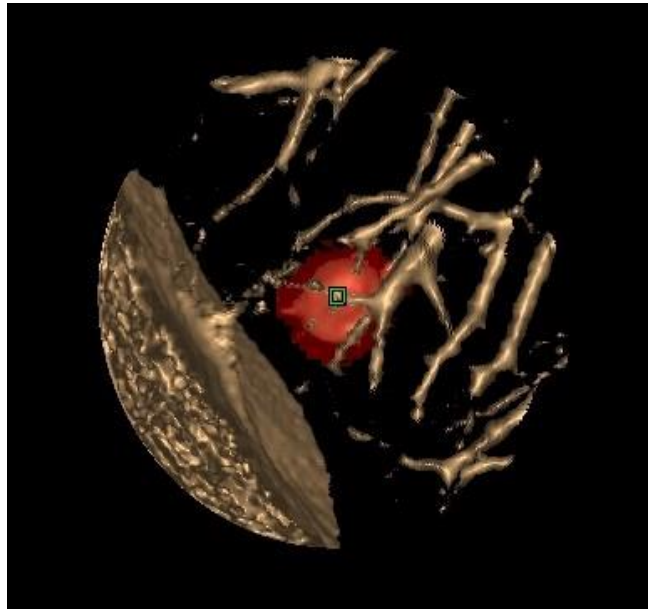
FBP

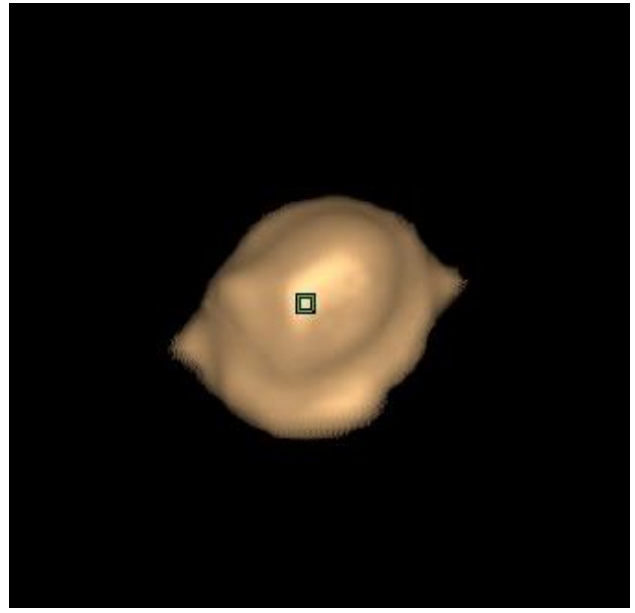


Standard kernel + ASiR-V 100%

Ricostruzione 3D del nodulo polmonare

Ampio sistema di post processing che consente la visualizzazione tridimensionale degli organi, delle lesioni e dei tessuti circostanti





SST Servizio Sanitario della Toscana

Valutazione dell'Ictus con Volume Shuttle (Perfusione)

Acquisition

80 kV

80 mA

5 mm slice

80 mm coverage

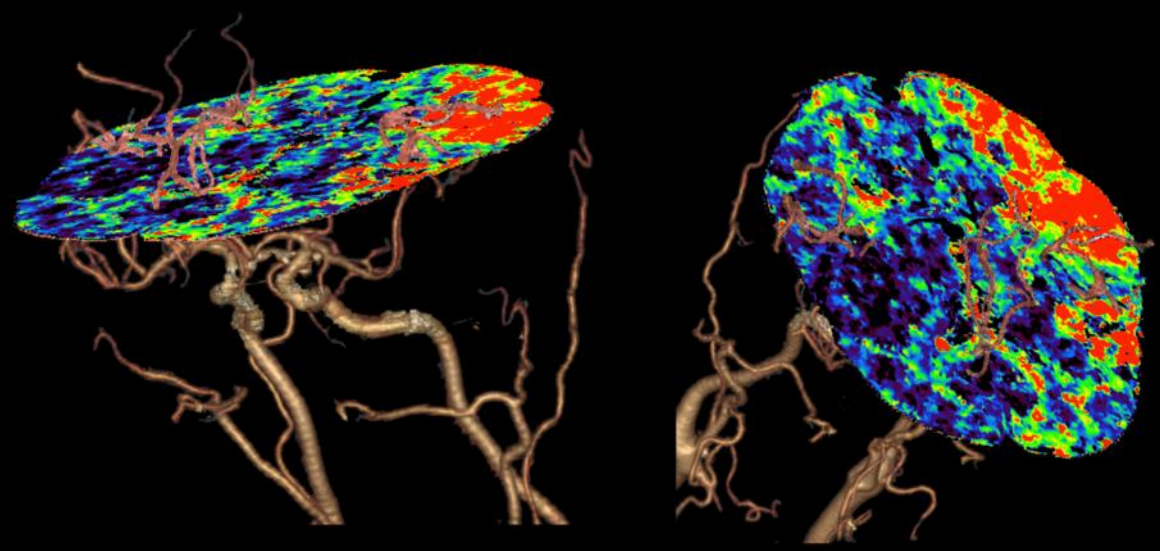
0.5 s/rot

54.2 s total exposure

718 mGy-cm DLP

1.7 mSv[1]

CTA showing TSA without visible thrombus



Interactive volumetric map demonstrating left MCA territory with infarcts in areas M1, M4 and M6