

## Case Report: Renal Artery Stenosis

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### Patient history

79-year-old man with known ischemic heart disease and peripheral vascular disease referred for renal arterial imaging due to

- poorly controlled hypertension despite three therapeutic pharmaceutical agents,
- renal impairment CKD 3a, eGFR 52 mls/min.

### Sequence details

Images have been acquired on our 1.5T MAGNETOM Avanto with software version *syngo* MR B15, using the 12-channel Body Matrix coil.

*syngo* Native TrueFISP\* (pre-release WIP)

\*WIP – Work in progress. The information about this product is preliminary. The product is under development and not commercially available in the U.S., and its future availability cannot be ensured.

3D acquisition using 1D PACE (Prospective Acquisition CorrEction) for respiratory synchronization.

ECG triggering was also used to optimize the scan timing in relation to the systolic inflow.

Segmented data acquisition with 49 lines of k-space per segment.

Spatial resolution 1.1 x 1.1 mm in-plane with a partition thickness of 1.00 mm (slice resolution 50%).

Scan duration 3:21 min.

Flip angle 90 degrees, Echo time 1.59 ms. Bandwidth 785 Hz/pixel.

Spatially selective inversion graphically positioned so that the superior border was coincident with the upper border of the imaging volume with an inversion thickness of 150 mm to invert inflowing blood from the IVC. Inversion time 790 ms.

## Imaging findings



Figure 1: Coronal MIP of syngo Native TrueFISP scan demonstrates moderate renal artery stenosis on the left and severe stenosis on the right.



Figure 2: Oblique Shaded Surface display (INSPACE) reformat clearly depicts the disease in both renal arteries.

## Results and discussion

The right kidney measures 12.3 cm and the left 11.6 cm in maximal renal bipolar length. The *syngo* NATIVE MRA shows moderate right renal artery stenosis (54% on source images) and severe renal artery stenosis on the left (78% on source images).

On the basis of the *syngo* NATIVE TrueFISP MRA alone the patient was referred for bilateral renal angioplasty for blood pressure control, and commencement of ACE inhibitor therapy.

*syngo* Native TrueFISP offers a viable alternative method for assessment of renal arterial disease in patients where administration of contrast agent might be contra-indicated.