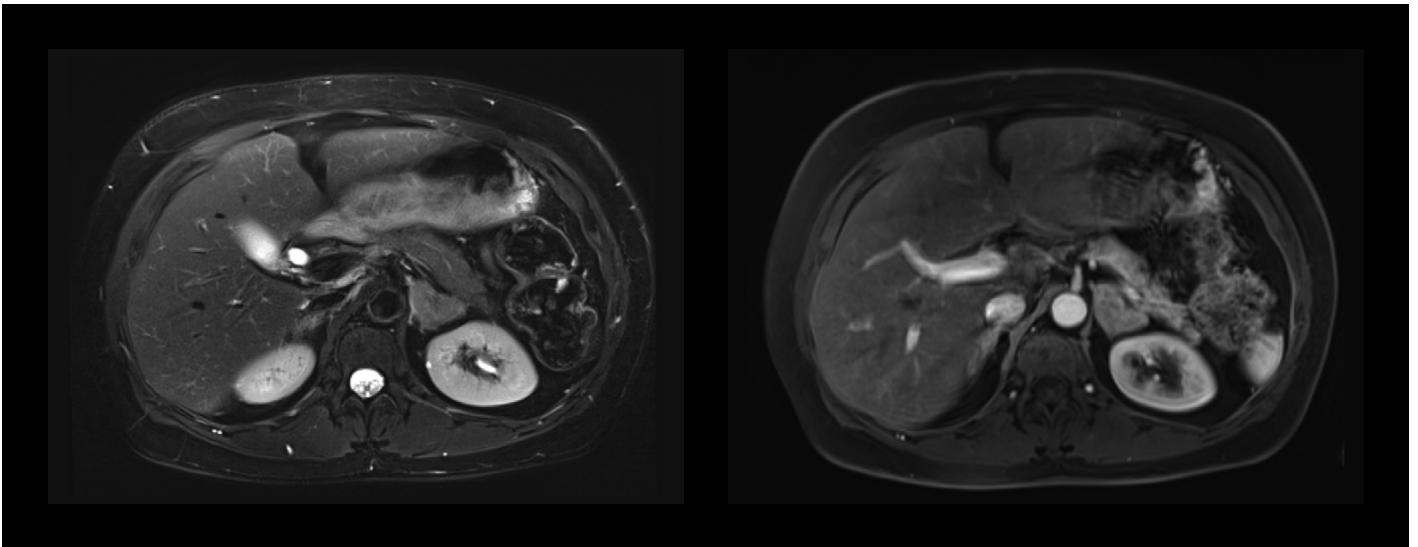


CASE STUDY

MRI of the adrenal gland



Images and content are courtesy of:

Prof. Dr. Wolfgang Schima, MSc
Diagnostic and Interventional Radiology
Hospital Göttlicher Heiland, Vinzenz Group
Vienna, Austria

All clinical protocols and decisions remain the responsibility of the healthcare provider.
Information contained in this booklet may be abridged and should be used in alignment
with institutional protocols and good clinical judgment.



MRI of the adrenal gland

Medical history of the patient

56 year-old female with history of type 2 diabetes.

Preliminary diagnostics

The patient has undergone an abdominal ultrasound and a CT scan which have revealed equivocal left adrenal mass with small amount of fat.

Indication for MRI

An MRI examination was requested to investigate the large nodule lesion seen on the abdominal CT scan.

Scan protocol includes

MRI: 3T

1. 3D T1 Dixon for in-phase and out-of-phase
2. Axial 3D T1 GE Dixon
3. Coronal T2w SSTSE
4. Axial T2w SSTSE
5. Axial DWI with 3 b-values : 50, 400 and 800.
Reconstruction of the adc map
6. Axial T2w with FS and motion artefacts reduction
7. Axial 3D T1 GE with FS before contrast injection
8. Axial 3D T1 GE with FS after contrast injection at the arterial phase

Injection protocol

Patient weight 65 kg

GBCA injection

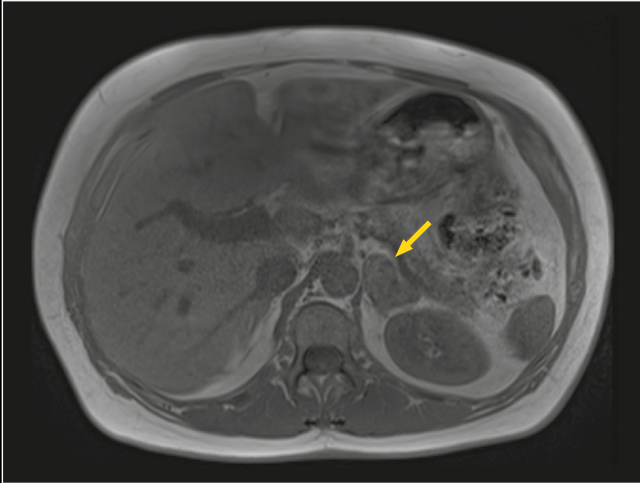
| | |
|------------------------|-------------------|
| Gadobutrol 0.1 mmol/kg | 7.5 mL – 2 mL/sec |
| 0.9 % NaCl | 40mL |
| Administration mode | With injector |



Findings of the MRI examination

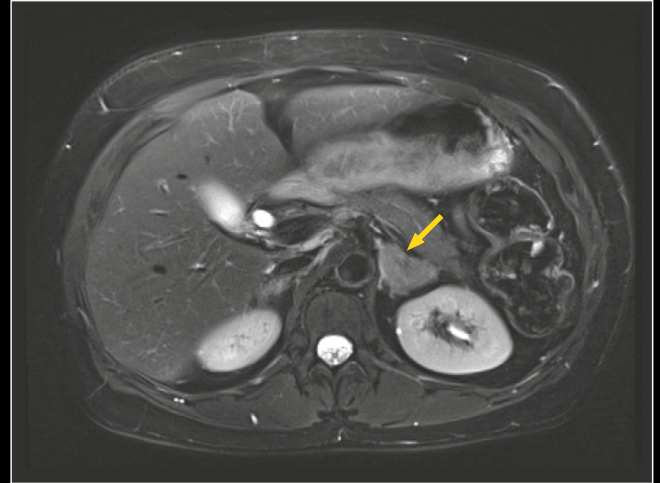
A left adrenal mass with signal intensity loss in out-of-phase sequence and moderate contrast enhancement was seen on the MRI.

Axial 3D Dixon in-phase imaging



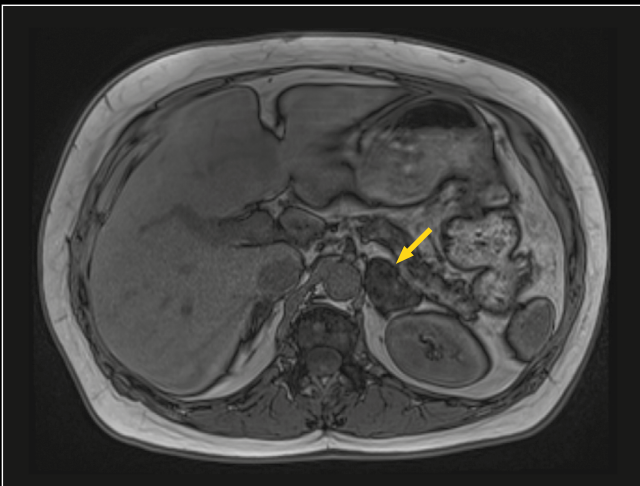
3D Dixon in-phase imaging:
Showing a left adrenal mass measuring 3.8 cm (yellow arrow).

Axial T2w with FS



Axial T2w with FS and motion correction:
The mass is showing low signal intensity (yellow arrow), which is consistent with an adenoma (pheochromocytoma would be high signal intensity).

Axial 3D Dixon out-of-phase imaging



3D Dixon out-of-phase imaging:
Showing a signal intensity drop, indicative of fat content (yellow arrow).

Axial 3D T1 GE at arterial phase



3D T1 arterial phase:
Showing a moderate, homogeneous enhancement of left adrenal mass (yellow arrow).



Diagnosis and therapy or follow-up:

This is a typical adrenal adenoma. No follow-up is needed.



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Abbreviations:

adc: apparent diffusion coefficient
CT: computed tomography
DWI: Diffusion-Weighted Imaging
FS: fat saturation
GBCA: gadolinium-based contrast agent
GE: gradient echo
MR: magnetic resonance
MRI: magnetic resonance imaging
SSTSE: Single Shot Turbo Spin Echo
US: ultrasound

GE Healthcare Limited, Pollards Wood, Nightingales Lane,
Chalfont St Giles, Buckinghamshire, England HP8 4SP
www.gehealthcare.com