

## Supplementary material

**Table S1: MR Acquisition Parameters**

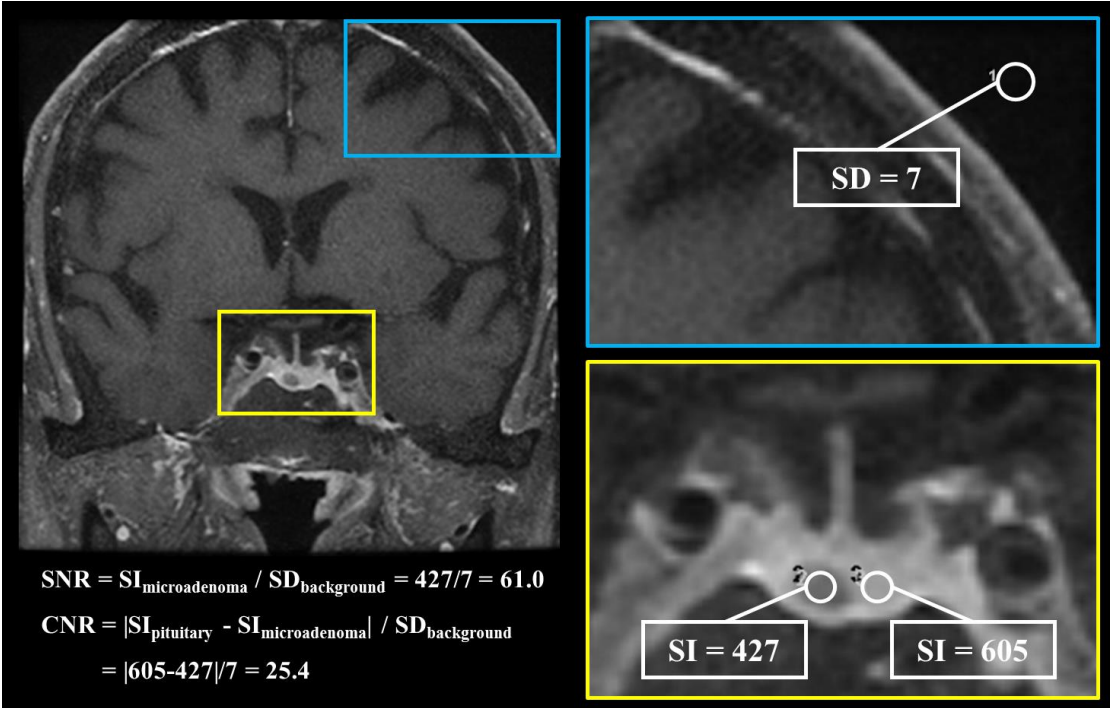
| Sequence                       | FOV<br>(cm <sup>2</sup> ) | Slice<br>thickness/spacing<br>(mm) | TR/TE<br>(msec) | Acceleration<br>factor | Number<br>of slices   | NEX | Matrix    | Scan time               |
|--------------------------------|---------------------------|------------------------------------|-----------------|------------------------|-----------------------|-----|-----------|-------------------------|
| Coronal 2D FSE T2WI            | 20 × 20                   | 4/1                                | 4100/90         | /                      | 20                    | 1.2 | 320 × 320 | 49s                     |
| Coronal 2D FSE T1WI            | 18 × 16.2                 | 3/0.6                              | 400/12          | /                      | 8                     | 2   | 256 × 192 | 49s                     |
| Sagittal fs 3D FSE T1WI        | 16.5 × 16.5               | 3/0                                | 460/16          | 2                      | 16                    | 2   | 256 × 224 | 60s                     |
| Dynamic CE coronal 2D FSE T1WI | 19 × 17.1                 | 2/0.5                              | 375/14          | /                      | 6/phase ×<br>6 phases | 1   | 288 × 192 | 23s/phase ×<br>6 phases |
| CE coronal 2D FSE T1WI         | 18 × 16.2                 | 3/0.6                              | 400/12          | /                      | 8                     | 2   | 256 × 192 | 49s                     |
| CE sagittal fs 3D FSE T1WI     | 16.5 × 16.5               | 3/0                                | 460/16          | 2                      | 16                    | 2   | 256 × 224 | 60s                     |
| CE coronal fs 3D FSE T1WI      | 15.2 × 15.2               | 1.2/-0.6                           | 390/15          | 1.25                   | 32                    | 6   | 256 × 256 | 4min 30s                |

Abbreviations: CE, contrast-enhanced; FOV, field of view; fs, fat-saturated; FSE, fast spin-echo; NEX, number of excitation; T1WI, T1-weighted imaging; T2WI, T2-weighted imaging; TR/TE, repetition time/echo time.

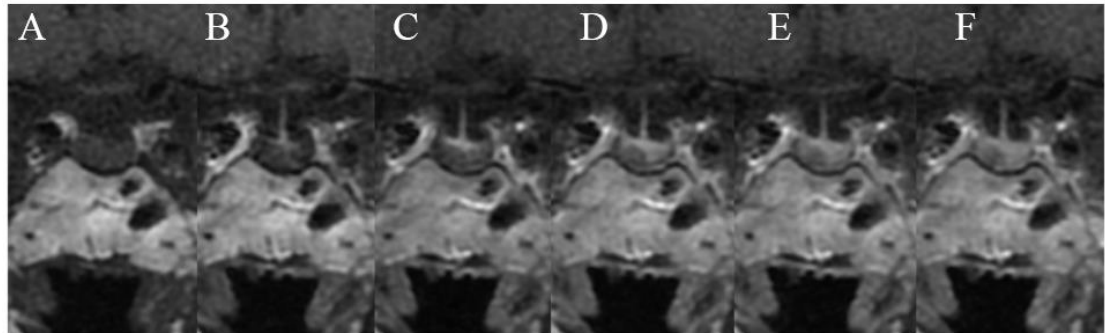
**Table S2: An example for image quality assessment**

|                        | Figure 4a (cMRI) | Figure 4b (dMRI) | Figure 4c (hrMRI) |
|------------------------|------------------|------------------|-------------------|
| Overall image quality  | 4                | 3                | 5                 |
| Sharpness              | 4                | 3                | 5                 |
| Structural conspicuity | 4                | 4                | 5                 |

Abbreviations: cMRI, conventional contrast-enhanced MRI; dMRI, dynamic enhanced MRI; hrMRI, high-resolution contrast-enhanced MRI.



**Supplementary Figure 1:** Exemplary ROI placement in a contrast-enhance pituitary MRI to compute the SNR and CNR. CNR = contrast-to-noise ratio, SD = standard deviation, SI = signal intensity, SNR = signal-to-noise ratio.



**Supplementary Figure 2:** Images of different phases in a 56-year-old man with Cushing's disease on dMRI. The pituitary microadenoma can be identified on (d), (e) and (f), and (d) was chosen as the "best image" for the SNR and CNR calculation. CNR = contrast-to-noise ratio, dMRI = dynamic contrast-enhanced MRI, SNR = signal-to-noise ratio.