Supporting information with our minimal data set of urethra’s visibility score

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Model title | | PU-MRI [8] | | EDSR [21] | | WDSR [23] | | SRGAN [25] | | RDN [26] | | CT  without catheter [8] | | CT  with catheter [8] | |
| Operator | | 1 | 2 | 1 | 2 | 1 | 2 | 1 | 2 | 1 | 2 | 1 | 2 | 1 | 2 |
| Case No. | 1 | 4 | 5 | 2 | 4 | 2 | 5 | 2 | 5 | 4 | 5 | 1 | 1 | 5 | 5 |
| 2 | 5 | 5 | 4 | 5 | 3 | 4 | 3 | 4 | 5 | 5 | 1 | 1 | 5 | 5 |
| 3 | 2 | 3 | 2 | 3 | 2 | 3 | 2 | 4 | 3 | 4 | 1 | 1 | 5 | 5 |
| 4 | 2 | 4 | 2 | 4 | 2 | 4 | 2 | 4 | 3 | 4 | 1 | 1 | N.A. | N.A. |
| 5 | 3 | 3 | 2 | 4 | 3 | 4 | 3 | 4 | 3 | 4 | 1 | 1 | 5 | 5 |
| 6 | 4 | 4 | 3 | 4 | 3 | 4 | 3 | 4 | 4 | 4 | 1 | 1 | 5 | 5 |
| 7 | 4 | 4 | 3 | 4 | 3 | 4 | 3 | 4 | 4 | 5 | 1 | 1 | 5 | 5 |
| 8 | 5 | 3 | 3 | 3 | 4 | 3 | 4 | 3 | 5 | 3 | 1 | 1 | 5 | 5 |
| 9 | 4 | 4 | 3 | 4 | 3 | 4 | 3 | 4 | 5 | 5 | 1 | 1 | 5 | 5 |
| 10 | 3 | 3 | 2 | 3 | 2 | 3 | 2 | 4 | 3 | 4 | 1 | 1 | 5 | 5 |
| 11 | 3 | 4 | 3 | 4 | 3 | 4 | 3 | 4 | 4 | 4 | 1 | 1 | 5 | 5 |
| 12 | 2 | 3 | 2 | 3 | 2 | 3 | 2 | 3 | 2 | 3 | 1 | 1 | 5 | 5 |
| 13 | 4 | 4 | 2 | 4 | 3 | 4 | 3 | 4 | 4 | 5 | 1 | 1 | N.A. | N.A. |
| 14 | 3 | 4 | 4 | 4 | 4 | 5 | 4 | 4 | 4 | 5 | 1 | 1 | 5 | 5 |
| 15 | 5 | 5 | 5 | 4 | 5 | 4 | 5 | 4 | 5 | 5 | 1 | 1 | N.A. | N.A. |
| 16 | 1 | 4 | 1 | 4 | 1 | 4 | 1 | 3 | 2 | 4 | 1 | 1 | N.A. | N.A. |
| 17 | 3 | 3 | 2 | 3 | 2 | 4 | 2 | 4 | 2 | 4 | 1 | 1 | 5 | 5 |
| 18 | 5 | 3 | 3 | 4 | 3 | 4 | 3 | 4 | 5 | 5 | 1 | 1 | N.A. | N.A. |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 19 | 4 | 3 | 3 | 2 | 3 | 2 | 3 | 3 | 3 | 4 | 1 | 1 | 5 | 5 |
| 20 | 4 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 4 | 4 | 1 | 1 | 5 | 5 |
| 21 | 4 | 4 | 3 | 4 | 3 | 3 | 3 | 3 | 4 | 4 | 1 | 1 | N.A. | N.A. |
| 22 | 3 | 4 | 2 | 4 | 2 | 4 | 2 | 4 | 3 | 5 | 1 | 1 | 5 | 5 |
| 23 | 3 | 3 | 2 | 4 | 2 | 4 | 2 | 4 | 3 | 5 | 1 | 1 | 5 | 5 |
| 24 | 3 | 4 | 3 | 4 | 3 | 4 | 3 | 4 | 4 | 5 | 1 | 1 | 5 | 5 |
| 25 | 3 | 3 | 2 | 3 | 2 | 3 | 2 | 3 | 3 | 4 | 1 | 1 | 5 | 5 |
| 26 | 5 | 4 | 3 | 4 | 2 | 4 | 2 | 4 | 5 | 5 | 1 | 1 | 5 | 5 |
| 27 | 3 | 4 | 2 | 3 | 2 | 3 | 2 | 3 | 3 | 4 | 1 | 1 | 5 | 5 |
| 28 | 4 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 4 | 4 | 1 | 1 | 5 | 5 |
| 29 | 4 | 4 | 3 | 4 | 3 | 4 | 3 | 4 | 4 | 5 | 1 | 1 | 5 | 5 |
| 30 | 4 | 4 | 4 | 4 | 4 | 3 | 4 | 3 | 5 | 4 | 1 | 1 | 5 | 5 |

PU-MRI, post urination magnetic resonance imaging; EDSR, enhanced deep super resolution network; WDSR, wide activation for efficient and accurate image super resolution network; SRGAN, photo-realistic single image super resolution using a generative adversarial network; RDN, residual dense network, CT: computed tomography, and N.A: not applicable (The target patients were unable to insert a urethral catheter for some reason, such as pain during insertion).