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"URODYNAMIC 4D-CT" AS AN EFFECTIVE EXAMINATION TOOL TO EVALUATE MALE LUTS

Introduction
Male LUTS were usually examined using objective materials such as UFM, CMG, PFS and VCUG. Although PFS is thought to be specifically effective to assess the grade of bladder outlet obstruction (BOO), it needs some skill and is invasive to patients. In addition, it is difficult to evaluate urinary disturbance comprehensively by single examination. Area Detector CT was applied to urodynamic study as manufactured "Urodynamic 4D-CT" and examined the validity of 4 dimension motion in the assessment of urinary condition. "Urodynamic 4D-CT" video was introduced to some clinical cases.

Design
Toshiba Aquilion ONE 320 was applied for scanning with ZIO STATION 2 to constitute the dynamic urinary flow image. After administration of contrast agent intravenously as usual CAT scanning, 4D-CT was retrieved during urination on maintaining a half sitting position on CT table. On shooting the X-ray, the testis were covered from radiation exposure with lead plate.

Results
Using "Urodynamic 4D-CT", 74 cases with LUTS were assessed on their condition including BPH, BNC and urethral stricture. The movements and the chronological changes of the urinary tract were observed in entirely throughout the urination. Some parameters were identified from the urodynamic 4D-CT image to evaluate the outcome of treatment. Bladder-prostate angle and maximum area in prostatic urethra and bladder neck were demonstrated to be significantly improved after effective Holmium Laser prostatectomy (HoLEP). Urodynamic 4D-CT was shown to evaluate BOO status before treatment and to predict the outcomes of HoLEP for patients with BPH. In addition, not only the site but also the precise condition were easily identified for the case of postoperative urethral stricture.

Conclusion
Urodynamic 4D-CT was demonstrated to be safe and a revolutionary new method for assessment of urinary condition thoroughly in a single examination method. Urodynamic 4D-CT showed the dynamic shape transition on entire urinary tract chronologically, simply, and less invasively.

Disclosures
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