

## VOIDING URETHRO-CYSTOSCOPY: A NEW CONCEPT IN BENIGN PROSTATIC OBSTRUCTION (BPO) INVESTIGATION

### Introduction

Lower urinary tract symptoms (LUTS) in men are highly prevalent over 50. Bladder outlet obstruction (BOO) due to benign prostatic disease, namely benign prostatic obstruction (BPO) is designated as the most frequent etiology. In current clinical practice, BPO is in mostly clinically suspected. Although being the only investigation allowing ascertainment of BOO, urodynamic study UDS is not recommended in routine cases before decision making about medical or surgical management of suspected BPO. Urethro-cystoscopy is also not recommended in all patients at the diagnosis phase in a patient complaining of LUTS.

In this preliminary, prospective, descriptive, proof of principle study, we postulated that voiding urethro-cystoscopy (VUC) was feasible, and could show the dynamics movements of the prostatic lobes during voiding in males with LUTS and suspected BPO.

### Design

This clinical evaluation was a cohort study, conducted in a tertiary reference center for LUTS management between 2011 and 2014. Male patients visiting for LUTS potentially related to BPO, having voiding and /or storage symptoms were considered for inclusion. Complete medical history, I-PSS, prostate volume (measured by ultrasound), and urine culture were obtained for all patients. Patients gave informed consent to undergo the procedure.

All procedures were performed in a quiet environment, under local anesthesia with the same flexible Laborie endoscope, covered with a single use, disposable sheath. Procedures were systematically recorded.

The procedure was systematically conducted in three consecutive steps. First, a conventional passive urethroscystoscopy using continuous flow irrigation was done, with a careful inspection of the urethra, the prostatic lobes, the bladder neck, the bladder mucosa and bladder wall structure. Then, a retrovision examination of the bladder neck was done, in order to categorize the aspect of the bladder neck and prostatic protrusion. The bladder was then filled up to 500mL, to generate a desire to void (B1). Once the patient felt a first desire to void, the flexible endoscope was pulled back to the veru montanum, looking forward to the bladder, and the patient was asked to void. The movement of the prostatic lobes during voiding was observed and characterized. Degree of obstruction was appreciated according to the following definitions: "obstructed" if the bladder lumen was seen in less than one third of the channel, "unclear" between one third and half of the channel, "non obstructed" if the bladder lumen was seen in more than a half of the channel

### Results

192 male patients with LUTS have been included. Out of 192 procedures, 31 were considered unsuccessful as these patients were not able to void during the procedure. Out of the 161 patients who were able to void, 126 were found "obstructed". Among them, 38 shown no opening of the lateral lobes, 47 have shown opening of the distal part of the lobes but not the proximal part, 31 have shown complete opening of the lateral lobes but had an obstructive posterior lobe with a "piston effect", and 10 had complete opening of the lateral lobes with an obstructive posterior lobe due to a rolling ball effect. In eight cases the patient was available to void but the procedure was inconclusive. In the remaining 27 cases, there was no evidence of obstruction, with a complete opening of the lateral lobes, and the bladder neck, allowing a clear vision of the bladder lumen from the veru montanum.

### Conclusion

Voiding urethroscystoscopy is feasible, associated with a low rate of complications. Our investigations led to a novel description of the dynamics of the prostatic lobes during micturition, never described before. This major step forward in the understanding of the pathophysiology of BPO has several potential clinical benefits, including characterisation of the type of obstruction, and potential modification of surgical indications, including elective surgeries that could help to preserve ejaculatory function.

### Disclosures

**Funding:** None **Clinical Trial:** No **Subjects:** HUMAN **Ethics not Req'd:** The medical acts done in this study (endoscopy) were justified as current clinical practice in mixed/storage LUTS management. **Helsinki:** Yes **Informed Consent:** Yes