Abstract 388: WHAT IS THE VALUE OF URODYNAMIC STUDY IN THE MANAGEMENT OF RECURRENT URINARY TRACT INFECTIONS IN CHILDREN?

Dades R, Kabil A, Yazidi M, Boutalja H, Kyal N, Lmidmani F, El Fatimi A University Hospital Ibn Rochd of Casablanca , PMR Department

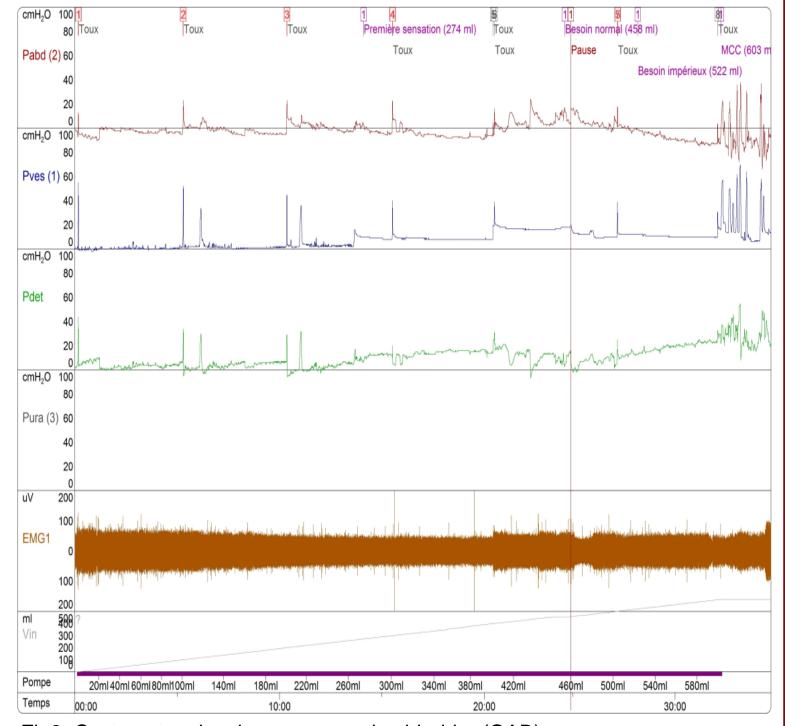
Hypothesis / aims of study

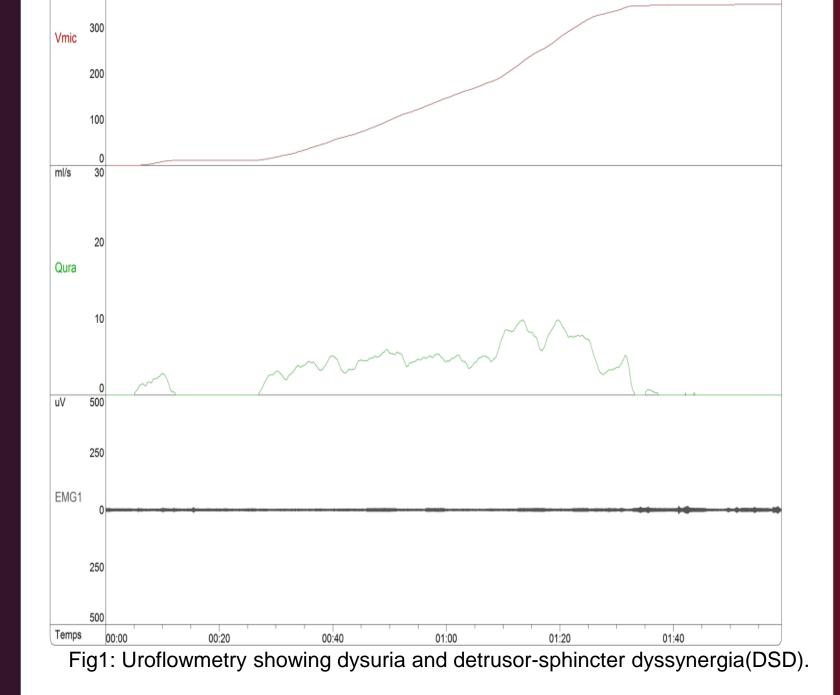
Urinary tract infection (UTI) is a frequent pathology in children, it's often associated with a functional or anatomical abnormality of the urinary tract, the most frequent being vesico-ureteric reflux (VUR)[1]. Urodynamic study (UDS) is used to identify other lower urinary tract (LUT) pathologies where conventional modalities have failed to establish a diagnosis. The major benefit of UDS is its ability to assess the mechanical function of the bladder, sphincter and urethra. The aim of this study is to highlight the urodynamic profile of children suffering from recurrent UTIs, and the interest of this evaluation in the management of these patients.

Results and interpretation

The average age was 6.93 years [3-15years], with a sex ratio of 1.57,the most frequent medical history in our series was episodes of unexplained fever noted in 69.41%, followed by primary enuresis in 55.29%, 9 children had chronic renal failure, 6 had posterior urethral valves(PUV) [2], 11 children had a VUR, and 4 underwent surgery for myelomeningocele. At the uroflowmetry, the urodynamic profile of these patients was characterized by dysuria and a significant post-void residual(PVR) in 75% of the children. The cystometry showed that 35% had a small bladder capacity and 78.4% had increased pressure in relation to detrusor overactivity(DO).

The interest of the UDS is twofold: diagnosis of urinary disorders (detrusor overactivity, detrusor sphincter dyssynergia), and also monitoring of certain pathologies where bladder dysfunction is known (posterior urethral valve). In this study, the UDS allowed us to clarify and understand the origin of recurrent UTIs in these patients. Renal damage due to recurrent UTIs may result in renal scarring and chronic renal failure[3]. The ultimate treatment goal is the preservation of renal function and prevent/treat incontience.







This is a retrospective descriptive study including 85 children with recurrent UTIs ,who benefited from a urodynamic study (UDS) over a 3-year period. First, a history, physical examination, and a 3-day voiding and bowel diary are obtained. Ultrasonic and UDS parameters: bladder trabeculation, bladder-wall thickness (BWT), bladder capacity, bladder compliance, detrusor overactivity, and detrusor-sphincter dyssynergia (DSD). VUR, hydronephrosis, and urinary incontinence, were also taken at the beginning of the study period. Demographic and clinical information, including Age, sex, constipation, antibiotic prophylaxis, anticholinergic therapy, and CIC frequency (times/day), were collected. Patients were excluded from the analysis if studies were partially completed or in cases where data was missing from their records.

Fig2: Cystometry showing an overactive bladder (OAB).

Conclusions

Lower urinary tract dysfunction (LUTD) is a common problem causing a major social and psychological burden to both children and their families. If left untreated, some cases of LUTD such as anatomic, neurogenic or severe dysfunctional voiding, may cause irreversible kidney damage. Any stasis or obstruction to urine flow favors infection, stasis is often the consequence of a urinary tract infection, an obstructive malformation of the urinary tract, or poor bladder emptying in the case of detrusor sphincter dyssynergia (DSD). The unique ability of UDS to demonstrate changes in detrusor pressures, which is a common reason for therapy failure, makes UDS an invaluable tool in the diagnosis and management of children with lower urinary tract dysfunction.

References

1. Foxman B, Brown P. Epidemiology of urinary tract infections: transmission and risk factors, incidence, and costs. Infect Dis Clin North Am. 2003;17:227–241.

 Peters CA, Bolkier M, Bauer SB, et al. The urodynamic consequences of posterior urethral valves. J Urol. 1990;144:122–126.
MJ McKibben, P Seed, SS Ross, KM Borawski Urinary tract infection and neurogenic bladder[J] Urol Clin North Am, 42 (2015), pp. 527-536