#393 Urodynamic Profile of Elderly Patients at the Center for Pelvic Floor Disorders and Anorectal Diseases, St. Luke's Medical Center

Buenaseda, Sharon Grace A.
Ramos, Miguel Jr. A.

Introduction

The Center for Pelvic Floor Disorders and Anorectal Diseases at St. Luke's Medical Center (SLMC) is one of the health specialties and services composed of different disciplines needed for pelvic floor dysfunction and disorder including urologists, colorectal surgeons, and gynecologists. Procedures and treatments which address voiding dysfunctions are available which include urodynamics, uroflowmetry, eyeball cystometry, foley catheter insertion, and bladder scan.

The Geriatric Center of SLMC conducts a Comprehensive Geriatric Assessment (CGA) to elderly patients aged 70 years and above. One of the geriatric syndromes being screened is urinary incontinence. From January 2013 to December 2015, 48% of those who underwent the CGA were found to have urinary incontinence.[1]

Voiding dysfunctions such as urinary incontinence is one geriatric syndrome that is overlooked and underreported since majority of the population looks at it as a consequence of aging. They seldom complain it during medical evaluations and are being elicited only as a cause of other symptoms such as depression, falls, and difficulty sustaining sleep. It is not only more common to older people, but also more severe, and is associated with sequelae not seen in younger patients such as increased risk for falls, fractures and hospitalizations.[2]

There are known physiologic and anatomic changes in aging that affect the process of micturition contributing to voiding dysfunction that may or may not be associated with pathologic processes. Detrusor contractility and urethral resistance remain constant until the age of 50 then begins to decrease at menopause and deteriorates sharply with further aging.[3]

Population in the Philippines is aging. It is projected that the proportion of the population aged 60 years and above is projected to exceed that of the population aged 0-14 years in 2065.[4] The proportion of persons aged 60 years and above will increase from 5.7% of the population in 2010 to 10.0% in 2030.[4] With the increasing number of elderlies in the population and an increasing number of those with urinary incontinence among them, this study was developed to show the urodynamic profile of elderly patients who already underwent urodynamics at SLMC and to serve as a precursor for future studies.

Methods

This is a retrospective cohort study on urodynamic profile among elderly patients who underwent urodynamics at SLMC. All patients aged 60 years old and above who underwent procedures with uroflowmetry and cystometry at SLMC from January 2018 to June 2018 are included. There are no exclusion criteria.

All clinical data were collected by patients files review. Collection of data related to clinical information (age, sex, marital status, referring doctor, prior pelvic surgeries and procedures, lower urinary tract symptoms, and comorbidities) was done. Attached to patients' files are reports on their uroflowmetry and cystometry, wherein data were used to describe the flow pattern and bladder characteristics, respectively. All collected data were analyzed using tables and graphs. SPSS regression was used to show correlations between age as the independent variable and uroflowmetry and cystometry variables as the dependent variables.

Results

There were a total of 181 subjects, 60 years old and above, who underwent urodynamics at SLMC-Center for Pelvic Floor Disorders and Anorectal Diseases from January 2018 to June 2018. Since there were no exclusion criteria, all 181 patients were eligible to be included in the study. Majority belong to the age group range of 60-69 years, the oldest being at 97 years old and the youngest at 60 years old. The subjects were predominantly male and mostly married (80%). Urodynamics were being requested by any physician who deemed it necessary for their patients. Those who requested for urodynamics were largely urologists (70.27%), followed by residents-in-training from the urology department of SLMC (11.05%), and urogynecologists (4.42%). Geriatricians fall in the 1.66% of the total number of physicians who refer patients for urodynamics. There were different reasons why physicians requested for urodynamics (Figure 5). In this study, it was mainly due to evaluation of patients presenting with LUTS alone, which is 54.14% of the subjects. The most common LUTS were frequency (75.69%) and nocturia (67.4%).

There were a total of 145 subjects who underwent uroflowmetry. Majority had low flow rates at 82.07%. Among them, 13% have low flow rates with low voided volumes while 87% have low flow rates with normal voided volumes. Excluding those with low voided volumes, there were a total of 118 subjects which is equivalent to 81.38% with prolonged flow times, majority of which also have low flow rates. Age may be used as a predictor of maximum flow rate, average flow rate, and time to maximum flow. As age increases, maximum flow rate, average flow rate, and time to maximum flow also increase.

Variables	r	p-value	α	Interpretation
Age and Maximum Flow Rate	0.200436	0.015638	0.05	Significant
Age and Average Flow Rate	0.245401	0.002929	0.05	Significant
Age and Time to Maximum Flow	0.168666	0.042563	0.05	Significant
Age and Flow Time	0.12127	0.147642	0.05	Not significant
Age and Voiding Time	0.124952	0.135644	0.05	Not significant
Age and Post Void Residuals	0.106466	0.21562	0.05	Not significant

There were a total of 52 patients who underwent voiding cystometry. 80.77% were found to have small bladder capacity (mean 316ml), but majority have good bladder compliance with intact proprioception (92.31%). Uninhibited contractions were present to only 15.38% and urine leak was present to only 13.46%. 73.08% have post-void residual urine and abdominal straining was noted to 34.62%. For bladder contractility, majority have weak bladder contractility at 63.46%. 34.62% were considered of having bladder outlet obstruction, but only 38.89% of them have obstructed bladder outlet obstruction index (BOOI). Majority of them have equivocal BOOI at 44.44%, while 16.67% have unobstructed BOOI. 13.46% were reported to have detrusor-sphincter dyssynergia, but 28.85% were found to have increased sphincteric activity as seen on EMG. Age may be used as a predictor of total bladder capacity, Qmax, and average flow rate. As age increases, total bladder capacity, Qmax, and average flow rate also increase.

Variables	r	p-value	α	Interpretation
Age and Total Bladder Capacity	0.398097	0.003469	0.05	Significant
Age and Pdet Qmax	0.0517	0.134002	0.05	Not significant
Age and Qmax	0.414171	0.00227	0.05	Significant
Age and Time to Qmax	0.172703	0.220827	0.05	Not significant
Age and Flow Time	0.181308	0.198323	0.05	Not significant
Age and Voiding Time	0.138507	0.327463	0.05	Not significant
Age and Average Flow Rate	0.354331	0.00996	0.05	Significant

Conclusions

Among increasing number of elderly patients screened to have urinary incontinence during comprehensive geriatric assessment or during visit at the clinic, very few geriatricians request for urodynamics. Geriatric patients present with symptoms that are often multifactorial in origin. Urodynamics is a useful tool to help us rule out other causes that could potentially add more harm to the patient when we do trial medications and when we prolong their symptoms without proper intervention.

This study may be used as a basis for development of a clinical pathway. This study may also be used as a precursor for other studies but a larger population is recommended if a similar study will be done. In future studies on profiling, include only those with complete urodynamics procedure and exclude those who underwent uroflowmetry or cystometry alone to get a better and more specific picture of the patient's condition. A corrected Qmax may be used if the pelvic center permits. A prospective study might give better profiles since subjects may be interviewed with questions specific for the study and subjects may be observed during the urodynamics procedure in order to further explain results better and to observe for any limitations such studies would have. Directly observing the patient will help in better selection among different trials the subjects underwent during the procedure. This will also help in better acquisition of information from subjects involved.

References

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