Evaluation of Urethral Retro-Resistance Pressure As a New Diagnostic Tool For Stress Urinary Incontinence

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بِسْمِ ٱللَّهِ ٱلرَّحْمَـٰنِ ٱلرَّحِيمِ

وَقُلِ ٱعْمَلُواْ فَسَيَرَى اللَّهُ عَمَلَكُمْ وَرَسُولُهُۥ

وَٱلْمُؤْمِنُونَ ۖ وَسَتُرَدُّونَ إِلَىٰ عَـٰلِمِ ٱلْغَيْبِ

وَٱلشَّهَـٰدَةِ فَيُنَبِّئُكُم بِمَا كُنتُمْ تَعْمَلُونَ ﴿التوبة ١٠٥﴾

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Abstract

- **KEYWORDS**

  Stress urinary incontinence – urethral retro-resistance pressure – maximum urethral closing pressure

- **OBJECTIVE**

  Aim of the study was to correlate urethral retro resistance pressure (URP) with the maximum urethral closure pressure (MUCP) in patients with urinary incontinence and healthy individuals.

- **STUDY DESIGN**

  Eighty patients with the complaint of urinary incontinence had a urodynamic examination including urethral pressure profiles and URP. Additionally, 40 healthy individuals without the complaint of any incontinence had their URP and urethral pressure profiles measured. The correlation of MUCP, and URP were calculated.

- **RESULTS**

  URP correlates well with the diagnosis of urodynamic stress incontinence. Correlation coefficient between URP and MUCP is 0.74. Healthy individuals have significantly higher values for URP and MUCP.

- **CONCLUSION**

  URP is a valuable less invasive test than conventional urethral function tests for the diagnosis of urodynamic incontinence with an excellent correlation of MUCP and URP.

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List of Abbreviations

AHCPR	**Agency for Health Care Policy and Research**
ATFP	**Arcus tendineus fascia pelvis**
ATRV	**Arcus tendineus rectovaginalis**
CT	**Computed Tomography**
EAS	**External anal sphincter**
EMG	**Electromyography**
EUL	**External urethral ligament**
FUL	**Functional urethral length**
ICS	**International Continence Society**
IS	**Ischial spine**
ISD	**Intrinsic urethral sphincter deficiency**
IVP	**Intravenous Pyelography**
LMA	**Longitudinal muscle of the anus**
LP	**Levator plate**
MRI	**Magnetic Resonance Imaging**
MUCP	**Maximum urethral closure pressure**
PAP	**Postanal plate**
PCF	**Pubocervical fascia**
PCM	**Pubococcygeus muscle**
PM	**Perineal membrane**
POP-Q	**Pelvic Organ Prolapse - Quantification**
PTR	**Pressure transmission ratio**
PUL	**Pubourethral Ligament**

P_{ura}	**Urethral pressure**
PUV	**Posterior urethra-vesical angle**
P_{ves}	**Intravesical pressure**
PVL	**Pubovesical ligament**
UPP	**Urethral pressure profile**
URP	**Urethral retro-resistance pressure**
USL	**Uterosacral ligament**
VCUG	**Voiding cystourethrography**

Introduction

Urinary incontinence is a distressing condition which although rarely life-threatening, adversely affects all aspects of a woman's quality of life. Through ignorance, embarrassment and a belief that loss of bladder control is a 'normal' result of childbirth and ageing many women suffer for years before seeking help **(Norton et al. 1998)**. This is unfortunate because with appropriate investigations an accurate diagnosis can be made and many women can be cured, most improved, and all helped by various different management strategies.

Urinary incontinence is defined by the International Continence Society (ICS) as any involuntary loss of urine. Conversely, continence is the ability to hold urine within the bladder at all times except during micturition **(Abrams et al. 2002).** Both continence and micturition depend upon a lower urinary tract, consisting of the bladder and urethra, which is structurally and functionally normal, that are normally situated and supported within the pelvis. In order to understand urinary incontinence in women it is necessary to have a basic knowledge of the structure and function of the lower urinary tract.

Aim of The Study