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Integrated evaluation of bowel and bladder function

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Abstract

The maintenance of fecal and or urinary continence becomes a significant medical issue particularly with aging. The mechanisms responsible for continence in the lower gastrointestinal and urinary tract are closely related to the integrity of the pelvic floor muscles and their neuromuscular response to stresses. The guarding reflex constitutes an important involuntary physiologic mechanism whose activity involvement assists to maintain continence. In this presentation, the physiological mechanism involving the recruitment of the guarding reflex of rectal, anal, vaginal and urethral structures are considered. Physiological measurements are made to show the interrelationship of these structures to incontinence generating stimuli that rapidly increase intra-abdominal pressures. Such stimuli were generated by eliciting a cough while simultaneously measuring pressures in the bladder/urethra vagina rectum and anus. Correlative anatomical visualizations using a combination of consecutive axial, saggital and coronal MRI will be presented demonstrating the 3D configuration of support as well the changes occurring during the aging process. MRI imaging is used to identify the voluntary aspects control as would be elicited to contain incontinence. In addition using dynamic perineal ultrasound the reflex activity to generated reflex contraction will be presented. These visualizations are segmented to show in slow motion and to identify the speed and direction of pelvic floor contractility that supports the ano-rectal structures and urethra. Such activity is considered critical in containing abdominal organs and contributes to the maintenance of both urinary and fecal continence.

Biography

Christos E Constantinou completed his PhD at Stanford University and continued as faculty in the department of Urology where he was responsible in organizing its first urodynamics laboratory. He worked as principal investigator of a number NIH projects involving the evaluation of pelvic floor function, using ultrasound imaging and novel vaginal and urethral probes. He has published more than 145 papers and chapters in peer reviewed journals, are currently Editor in Chief of the Open Journal of Obstetrics and Gynecology and is serving on the editorial board member of many other journals.