



Mini Review

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Outlet Control



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Introduction

Outlet control means continence, which is how to control body excreta (urine and feces) control of temperance, body reaction and control of sexual behavior and premature ejaculation. Anybody action is a nerve-muscle action, controlled by an alert healthy central nervous system (CNS).

Micturition and urinary continence

Urinary continence depends on a closed and empty urethra created by two factors; one is the presence of a strong intact internal urethral sphincter (IUS), which is a collagen-muscle tissue cylinder that extends from the bladder neck to the perineal membrane. The other factor is an acquired factor which is keeping high sympathetic tone at the IUS gained in early childhood from toilet training. Failure of either one factor lead to urinary incontinence.

Defecation and fecal continence

Fecal continence depends on a closed and empty anal canal created by two factors, one is inherent and one is acquired. The acquired factor is keeping high sympathetic tone at the internal anal sphincter (IAS) gained in early childhood from toilet training. The inherent factor is the presence of an intact strong IAS, which is a collagen-muscle tissue cylinder surrounding the anal canal.

Pathology

Childbirth trauma causes laceration in the collagen chassis of the vagina leading to vaginal prolapse; and the intimately related IUS in front and/or the IAS posterior, causing UI and/or FI.

Pathophysiology

Outlet control is how to control the sympathetic nervous system and to control different responses according to social circumstances.

Diagnosis

Structural damage is diagnosed clinically and by medical imaging. Functional disturbance, which is the result of the chassis damage, can be assessed clinically and by urodynamic.

Outlet Control

Outlet control means continence, which means good control of body excreta (urine and feces) control of temperance, body reaction and control of sexual behavior and premature ejaculation. Anybody action is a nerve-muscle action, controlled by an alert healthy central nervous system (CNS).Continence is self-restraint and self-control, it is an acquired behavior of how to control the sympathetic nervous system [1-8].

Body excreta

Micturition: Control of micturition depends on a closed and empty urethra. This is gained by having healthy intact internal urethral sphincter (IUS) an inherent factor; and high sympathetic tone gained from toilet training in early childhood, an acquired factor. Childbirth trauma (CBT) is the main cause of lacerations of the collagen chassis of the IUS which lies in close contact with the anterior vaginal wall. The IUS is a collagen-muscle tissue cylinder that extends from the bladder neck to the perineal membrane in both sexes. The chassis is healthy strong collagen with the muscle fibers lying on and intermingle with the collagen fibers in its mid thickness. Toilet training will induce high sympathetic tone (T10-L2), so the individual will maintain high sympathetic tone, and keep the urethra empty and closed all the time, until there is a need or a desire to void. In enuretic children the sympathetic nerves do not secrete nor-epinephrine, so the IUS is not contracted all the time and micturition is back to a sacral spinal reflex. Treatment of those children is by giving them alpha sympathomimetic drugs e.g. ephedrine. CBT causes lacerations in the collagen chassis leading to weakness of the IUS, which cannot stand against sudden rise of abdominal pressure and urine will leak, stress urinary incontinence (SUI). As soon as the woman feels wet, embarrassment will induce reflex sympathetic activity which will augment contractions of the IUS, closing the urethra preventing further leak of urine. Reconstructive surgery, expose the lacerations and mend the torn wall will restore the IUS strength [1-8].

Defecation: Toilet training will provoke acquiring high sympathetic tone (T10-L2) at the internal anal sphincter (IAS)

and the individual will keep this high tone all the time, thus keeping the anal canal empty and closed all the time, until there is a need and/or a desire to pass flatus and/or feces in favorable circumstances. The IAS has a strong collagen chassis with muscle fibers lying on and inter mingle with the collagen fibers in its mid thickness. It surrounds the anal canal, and is surrounded in its lower part with the external anal sphincter (EAS). The IAS is in close contact with the posterior vaginal wall. CBT is a major cause of lacerations of the IAS and subsequent fecal incontinence (FI), anal intercourse is another frequent factor [4-8].

Diagnosis

Structural damage can be diagnosed clinically and by medical imaging e.g. ultrasound, 2DUS, 3-4DUS, X-ray (CT scan) and /or MRI. Functional disturbance, which is the result of the chassis damage, can be assessed clinically and by urodynamic studies in cases of urinary incontinence.

Prevention and prophylaxis

It is how to control of temperance, body reaction and control of sexual behavior and premature ejaculation through controlling the sympathetic nervous system harmonized and supervised by the CNS.

Treatment

Correction of the pathology is either: medical, or reconstructive surgery. Medical treatment is giving ephedrine,

a non-catechol amine sympathomimetic in case of nocturnal enuresis. In addition, giving alpha-blocker drugs, in cases of retention of urine. Surgical reconstructive surgery as doing "Urethro-Ano-Vaginoplasty" which is a reconstructive surgery for SUI, FI and vaginal prolapsed [2,7,8].

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