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The trend and care pathway for management of stress urinary incontinence

Urinary incontinence is a common problem among women worldwide, resulting in a substantial economic burden and decreased quality of life. The Women’ s Preventive Services Initiative is the only major organization that recommends annual screening for urinary incontinence in all women despite low to insufficient evidence regarding effectiveness and accuracy of methods. No other major organization endorses screening. Initial evaluation should include determining whether incontinence is transient or chronic; the subtype of incontinence; and identifying any red flag findings that warrant subspecialist referral such as significant pelvic organ prolapse or suspected fistula. Helpful tools during initial evaluation include incontinence screening questionnaires, a three-day voiding diary, the cough stress test, and measurement of post-void residual. Urinalysis should be ordered for all patients. A step-wise approach to treatment is directed at the urinary incontinence subtype, starting with conservative management, escalating to physical devices and medications, and ultimately referring for surgical intervention. Pelvic floor strengthening and lifestyle modifications, including appropriate fluid intake, smoking cessation, and weight loss, are first-line recommendations for all urinary incontinence subtypes. No medications are approved by the U.S. Food and Drug Administration for treatment of stress incontinence. Pharmacologic therapy for urge incontinence includes antimuscarinic medications and mirabegron. Patients with refractory symptoms should be referred for more invasive management such as mechanical devices, injections of bulking agents, onabotulinumtoxin A injections, neuromodulation, sling procedures, or urethropexy.

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Treatment options for intrinsic sphincter deficiency and recurrent stress urinary incontinence

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Intrinsic sphincter deficiency (ISD) was classified as type III stress urinary incontinence (SUI) by McGuire in the 1970s. The pathogenesis of ISD was damage either to the innervation of the sphincter or to the related structures constituting urethral sphincter mechanism. ISD was usually associated with more severe form of SUI and carried higher risk for surgical failure, making the management challenging. Although the clinical diagnosis of ISD was defined loosely as Valsalva leak point pressure <60 cmH2O or a maximal urethral closure pressure <20 cmH2O, the consensus is still lacking at present. The non-surgical management included pelvic physiotherapy, prescription medication and bulking agents. The surgical options contain retropubic suspension, various types of suburethral slings and artificial urethral sphincter. As lack of standardized diagnosis and treatment for ISD, well assessing urethral function and urethral mobility might enable physicians to determine ideal management options.

As the trend of aging worldwide, the prevalence of SUI arises. With the increasing volume of surgical treatment for SUI, there is also corresponding increase in case number related to surgical failure. There were many factors contributing to the failure of SUI surgery which can be further divided into pre-operative and intra-operative factors. Surgeon should be familiar with assessment and treatment of these conditions. Management options for previously failed SUI surgery included conservative and/or surgical treatment. The choice of option for recurrent SUI should depend on the etiology of failure, patient' s comorbidity, patient' s preference and also the physician' s experience and competence.

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Vaginal laser therapy for urinary incontinence and genitourinary syndrome of menopause: A update review

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Laser therapy has gained its popularity in different medical fields for managing various conditions. Recently, the use of vaginal laser in the gynecology field has deemed its attention from the expertise and began to shine through on the treatment of diseases such as genitourinary syndrome of menopause (GSM) and stress urinary incontinence (SUI). One must aware that the use of energy-based devices (EBDS) including laser to perform "vaginal rejuvenation" or vaginal cosmetic procedures was warned by the United States Food and Drug Administration on July 30th, 2018 due to lack of establishment in safety and effectiveness profile. Therefore, we will conduct a series of literature reviews regarding the use of laser in the gynecology field, focusing on GSM and SUI related topics, and other implications.

GSM, which was previously recognized as vulvovaginal atrophy (VVA), is a combination of vaginal symptoms mainly associated with the loss of circulating estrogen in menopause state. It has a great impact on different aspects such as vulvovaginal symptoms, including vaginal pain, dyspareunia, vaginal dryness, itchiness and tissue friability, and urological symptoms, including urinary frequency, urgency, incontinence, recurrent urinary tract infections, and sexual dysfunction. The vaginal laser has just started to gain its attention as it has been postulated to improve symptoms of GSM and served as an alternative non-hormonal treatment option, especially to those patients with estrogen-dependent malignancy as hormonal treatments are contraindicated. The investigations are mainly focusing on two types of laser, CO2 laser, and the erbium: YAG (Er: YAG) laser, as they both demonstrated clinical improvement in symptoms associated with GSM with a relatively safe profile.

Moreover, promising results are observed in the patient present with SUI, which is defined as involuntary loss of urine because of increased intra-abdominal pressure without detrusor contraction. As previously known, diminished collagen content could be observed in the pubocervical fascia of incontinent patients. This further weakens the pelvic floor support and aggravate the symptoms of SUI. The advantage of applying laser therapy may

strengthen the connective tissue by promoting new collagen formation. Improvement of symptom scores and pad weight were seen at 6-12 months of laser therapy in most studies, but deterioration was also observed after 18-36 months, which require repeated treatment.

Finally, there are other researches examined the implications in patients with prolapse, overactive bladder, and lichen sclerosis. By understanding the limitations, risks, and outcomes of laser therapy, the clinicians should evaluate each case carefully before prescribing any treatment. Large multicenter randomized controlled trials should be conducted to provide more robust evidence in the effectiveness and safety profile in the future.

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Prolapse Repair Using Non-synthetic Material: What is the Current Standard?

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Traditional vaginal repairs have been used for several decades. These repairs are used for bladder prolapse, cystocele, rectocele, enterocele, uterine prolapse, and vaginal prolapse. They are anterior or posterior repair, colporrhaphy, uterosacral or sacrospinous vault suspensions. They are easy to perform and have the advantage of being performed through an entirely vaginal approach. They don't require a long hospital stay and are relatively well tolerated. Patients usually stay 1-3 days in the hospital after surgery. The surgeon treats the prolapse using the patient's own tissue to repair the connective tissue attachments. Although this is a good option for some patients, and it has the highest risk for recurrent prolapse. 20-40 percent of patients may experience return of their prolapse in the future.

Sacrospinous ligament fixation (SSLF) is a commonly used procedure for apical prolapse; however, this leaves patients vulnerable to future cystocele recurrences. Maher et al [1] showed in a Cochrane review that using a mesh as an overlay at the time of anterior vaginal wall repair reduced the risk of recurrent anterior vaginal wall prolapse; however, this was associated with a 10% mesh exposure rate. The high rate of mesh complications, and the poor outcomes in the long term with anterior colporrhaphy, researcher has suggested a modified bilateral pubococcygeus plication (BPCP) as an alternative for correction of cystocele.

In a study comparing outcomes of vaginal hysterectomy and sacrospinous hysteropexy (SSH). SSH shows lower long-term success rates than vaginal hysterectomy, and this could be due to recurrence of prolapse. Recurrence in the anterior vaginal wall after SSH with anterior colporrhaphy (AC) was seen in 2 of 133 patients with bothersome symptoms requiring surgery [2]. In a case series of patients who underwent bilateral sacrospinous ligament fixation (SSF) on the posterior apex with uterine preservation, five of eight patients showed an elongated cervix at 1 year after surgery, with four of the five

having a symptomatic bulge [3]. Thus, the presence of the cervix could be a factor in the outcome of uterine preservation in prolapse surgery. Lo et al presented the concomitant anterior and posterior fixation Sacrospinous ligament fixation for hysteropexy which has shown a good outcome. [4].

There are various methods of correcting vaginal prolapse via vaginal approach route, and there is no one right answer when to decide which procedure to perform. Being well informed about the surgical procedures and understanding each of their strengths and weaknesses will enable clinicians to select a suitable treatment depending on each patient's desired outcome.

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Current status of minimally invasive sacro-colpopexy for pelvic organ prolapse

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The purpose of this review of the literature is to evaluate the current status of minimally invasive sacral suspension procedures for repair of pelvic organ prolapse (POP) in females. Sacro-colpopexy (SC) is the "gold standard" repair for apical prolapse for those who desire to maintain their sexual function, and minimally invasive approaches offer similar efficacy with fewer risks than open techniques. Till now, the popularity of laparoscopic and robotic technology has significantly impacted the field, converting what would have been a large number of open abdominal SC procedures to a minimally invasive approach in the modern world. Newer techniques such as nerve-sparing dissection at the sacral promontory, use of the iliopectineal ligaments and natural orifice vaginal SC may improve patient outcomes. Prolapse recurrence is consistently noted in at least 10% of patients regardless of route of mesh placement. Ancillary factors including pre-operative prolapse stage, retention of the cervix, type of mesh implant, and genital hiatus (GH) size all adversely affect surgical efficacy, while trainees do not. Minimally invasive apical repair procedures are suited to early recovery after surgery protocols but may not be appropriate for all patients. Recently, studies evaluating longer-term outcomes of robotic SC are needed to understand the relative risk/benefit ratio of this technique. With several emerging robotic platforms with improved features and a focus on decreasing costs, the future of robotics seems bright.

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Surgical Management for Pelvic Organ Prolapse and Its Impact on Sexual Function

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The first surgical mesh product for use in pelvic organ prolapse (POP) was introduced in 2002. Genital prolapse was considered to be a genital hernia, and the purpose of the mesh was primarily to improve the anatomic cure and prevent the recurrence of POP after only native tissue repair. Since then, mesh products have been widely used and evolved into mesh kits. In 2008, the U.S. Food and Drug Administration (FDA) issued a public health notification regarding the safety, effectiveness, and complications associated with the use of transvaginal mesh (TVM) for the treatment of prolapse.1 The FDA evaluated the literature for POP surgery using surgical mesh and warned about complications including bladder damage, postoperative lower urinary tract symptoms, mesh erosion, pelvic pain, and dyspareunia.1 In 2011, the FDA again issued warnings that mesh-related complications were not rare, and reclassified mesh kits as class III high-risk devices in 2016.1,2 Of these complications, de novo dyspareunia and impaired sexual function are important concerns. Studies regarding sexual function and rates of dyspareunia after TVM repair have reported inconsistent findings. Some studies have reported improved sexual function, whereas others have reported worse or unchanged function.3 In this talk, we aimed to compare postoperative dyspareunia and sexual function as assessed by valid questionnaires after TVM repair and after native tissue repair.

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Diagnosis and management of nocturia in current clinical practice

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Nocturia is a highly prevalent and morbid condition with significant impact on quality of life. According to the International Continence Society (ICS) 2018 definition, noctuira is characterized by the need to wake up to pass urine during the main sleep period, with each urination followed by sleep or the intention to sleep. Awakening 2 or more times per night to void may be considered a clinically relevant definition.

The pathophysiological mechanisms of nocturia include (1) global polyuria, (2) nocturnal polyuria (NP), (3) diminished bladder capacity, and (4) mixed etiology. Nocturia is often a symptoms of underlying comorbid conditions including hypertension, diabetes mellitus, heart disease, kidney disease, and obstructive sleep apnea. A thorough clinical examination and voiding diary analysis are essential to delineate the underlying mechanism of nocturia.

In this topic, we are going to talk about the physiological mechanisms associated with nocturia, and learn the multidisciplinary approach to effectively diagnosis and management this bothersome condition.

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Current management of female overactive bladder and the future perspective

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Overactive bladder (OAB) is defined by the International Continence Society (ICS) and International Urogynecological Association (IUGA) as urinary urgency, usually accompanied by frequency and nocturia, with or without urgency urinary incontinence, in the absence of urinary tract infection or other obvious pathology. The prevalence of OAB increases with age and caused substantial economic burden. In Taiwan, recent studies have shown that the prevalence of overactive bladder was around 15%-16% in populations aged 40 years and over. The pathophysiology of OAB might be associated with sex hormone deficiency, urinary microbiota factor, metabolic syndrome, or other lower urinary tract dysfunctions such as myogenic, urotheliogenic, urethrogenic, and autonomic dysfunction. Current treatment for OAB aimed at relieving symptoms and there were few guidelines (AUA/SUFU Guideline Amendment 2019, EAU Guideline;2018, CUA Guideline;2017 etc.).

In my speech, I will summarize the current treatment strategies for OAB including behavior therapy, combination pharmacologic therapy, intravesical onabotulinumtoxin (BoNT-A) injection, peripheral tibial nerve stimulation (PTNS), sacral neuromodulation (SNS) etc. Besides, special considerations and evidence will be emphasized on anticholinergic medication for older, frail women with OAB. Finally, treatments under research for OAB will be present in this speech.