

Invited Commentary: Beyond female stress urinary incontinence

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This Invited Commentary discusses the following articles:

Moosavi SY, Samad-Soltani T, Hajebrahimi S. A web-based fuzzy risk predictive-decision model of de novo stress urinary incontinence in women undergoing pelvic organ prolapse surgery. *Curr Urol* 2021;doi:10.1097/CU9.0000000000000035.

Khawaja AR, Rouf MA, Khan FB, et al. Transvaginal subfascial synthetic sling - "A novel technique" versus trans-obturator mid urethral sling in female stress urinary incontinence: A comparative study. *Curr Urol* 2021;doi:10.1097/CU9.0000000000000034.

Lynch NB, Xu L, Ambinder D, Malik RD. Medical malpractice in stress urinary incontinence management: A 30-year legal database review. *Curr Urol* 2021;doi:10.1097/CU9.0000000000000033.

Female stress urinary incontinence (SUI), as one of the subtypes of urinary incontinence (UI), significantly affects women's quality of life in multi-aspects, including social activity, physical distress, psychology, employment, and sexual life.^[1] It also results in a heavy pecuniary burden for the patients' family and society.^[2] In fact, as a common clinical manifestation in women, the prevalence of UI varies according to different definitions, populations, questionnaire designs, and diagnostic criteria. A community-dwelling survey indicated a prevalence of 2% to 58%, while China reported a total prevalence of 30.8%.^[1,3]

The classification of UI in epidemiological investigation is of great importance. It involves different etiological factors and related treatments. Minassian et al. suggests that the prevalence of different subtypes is significantly related to age. SUI is 13% in terms of prevalence and peaks in the 50s. Urge urinary incontinence (UUI) is 5% in prevalence and increases with age. Mixed urinary incontinence (MUI) is 11% and gradually becomes the dominant type of urinary incontinence in elderly women.^[4] In China, the prevalence is 18.9%, 2.6%, and 9.4%, respectively.^[3]

A series of reports suggested no significant difference in the type and composition of UI between China, Europe, and North America. Among the risk factors, in addition to age, obesity, comorbidities and delivery mode, vaginal delivery, and parity are independent risk factors for SUI in Chinese women, which prompts that prevention and cure of female urinary incontinence in the perinatal period is still fundamental and noteworthy.^[3] Vaginal delivery directly impairs the intra-pelvic fascia support structure, and directly or indirectly breaks the overall stability of the pelvic floor. Therefore, pelvic floor impairments and SUI are closely related comorbidities.^[5]

The diagnosis and evaluation of UI is the basis of treatment, especially for surgical treatment. SUI and de novo urinary incontinence or postoperative urinary incontinence after surgery for pelvic organ prolapse (POP) remain a challenge for urologists and gynecologists.^[5,6] Therefore, a comprehensive preoperative assessment is particularly important.

In clinical practice, there are currently 3 methods for treating patients with de novo urinary incontinence after POP surgery: 1) Treat all approaches, 2) Wait and see approach, and 3) Crude estimate of the risk approach.^[5] That is, from correcting POP and anti-incontinence procedures simultaneously to choosing only one kind of surgical method and then dependably selecting a further surgical method and/or completely depending on doctors' experience. Unfortunately, retrospective analysis of those cases suggests that the results are not satisfactory. In this issue, Moosavi et al. made use of MATLAB software and the Mamdani reasoning system to form a network expert system, combining risk factors with clinical characteristics, and using a web-based fuzzy mathematical assessment method to form a quantifiable fuzzy risk prediction decision model, which revealed satisfactory results the following verification of 30 randomly selected POP cases.

In terms of the surgical treatment of SUI, with the improvement of synthetic sling materials and implant techniques, mid-urethral suspension (MUS) seems to be more prevalent.^[7] Khawaja et al., also in this issue, demonstrated a "new technique" for trans vaginal subfascial suspension. Under the basis of urinary control, it emphasized that the sling tape passes beneath the obturator fascia rather than through the obturator foramen, avoiding damage to blood vessels and reducing groin pain. Compared with TVT-O, it has some advantages. However, the evolution of surgical techniques should be objectively viewed from a historical perspective. Recently, serious complications from synthetic materials in MUS and POP mesh repair have aroused certain controversy, which has prompted professionals to reappraise it. Although a recently updated systematic review and Meta-analysis showed several advantages for MUS, traditional Burch colposuspension and autologous fascial slings still have their status and indications.^[8-10] New guidelines state that these are all the same.^[11]

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With the escalation of litigation cases referring to suspension and mesh repair surgery adverse events, the contradiction between minimally invasive procedures and severe complications is drawing attention. The retrospective analysis by Lynch et al. on this issue is meaningful. Results from an analysis of the Westlaw legal databases for 30 years suggest that simple treatments seem to embody a higher occupational risk. Among the accused professionals in SUI or POP cases, 63.4% were gynecologists and 36.6% were urologists. Litigation risks include but are not limited to visceral injury, posturinary retention, postoperative pain and other symptoms, dyspareunia, sling erosion and urinary incontinence recurrence. The negligence of physician–patient communication, informed consent, unsuitable operation choice and improper postoperative observation and care can be the reasons of medical malpractice litigation.

Beyond female SUI, it is understood that the classification of UI and clinical comprehensive assessment over multiple time points are of momentous significance because of its dynamic transition with time in different subtypes, especially to MUI. As an attempt, the application of artificial intelligence prediction model requires further enrichment of data, further improvement of the algorithm, and further verification of clinical characteristics. The symptoms of UI are closely related to the structure and function of pelvic organs, they are an integral whole. It is only by understanding the pathophysiological status of each patient that the comprehensive assessment of the treatment plan can guarantee the quality and safety. The trade-off between minimally invasive and traditional surgery should be individualized and performed with full physician-patient communication, understanding, and informed consent. Various guidelines involve further conclusions of clinical RCT analysis and should receive more attention. In brief, there exists a symbiotic relation between medical practice and medical law. Professionals should try their best to do the right thing at the right place and the right time.

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Statement of ethics

None.

Conflict of interest statement

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Author contributions

All authors contributed equally in this manuscript.

References

- [1] Minassian VA, Drutz HP, Al-Badr A. Urinary incontinence as a worldwide problem. *Int J Gynaecol Obstet* 2003;82(3):327–338.
- [2] Thom DH, Haan MN, Van Den Eeden SK. Medically recognized urinary incontinence and risks of hospitalization, nursing home admission and mortality. *Age Ageing* 1997;26(5):367–374.
- [3] Zhu L, Lang J, Liu C, et al. The epidemiological study of women with urinary incontinence and risk factors for stress urinary incontinence in China. *Menopause* 2009;16(4):831–836.
- [4] Minassian VA, Bazi T, Stewart WF. Clinical epidemiological insights into urinary incontinence. *Int Urogynecol J* 2017;28(5):687–696.
- [5] Jelovsek JE. Predicting urinary incontinence after surgery for pelvic organ prolapse. *Curr Opin Obstet Gynecol* 2016;28(5):399–406.
- [6] Wong JWH, Ramm O. Urinary incontinence and pelvic organ prolapse. *Clin Obstet Gynecol* 2021;64(2):314–320.
- [7] Fusco F, Abdel-Fattah M, Chapple CR, et al. Updated systematic review and meta-analysis of the comparative data on colposuspensions, pubovaginal slings, and midurethral tapes in the surgical treatment of female stress urinary incontinence. *Eur Urol* 2017;72(4):567–591.
- [8] NICE Guidance-Urinary incontinence and pelvic organ prolapse in women: Management. *BJU Int* 2019;123(5):777–803.
- [9] Schreiner G, Beltran R, Lockwood G, et al. A timeline of female stress urinary incontinence: How technology defined theory and advanced treatment. *Neurourol Urodyn* 2020;39(6):1862–1867.
- [10] Van der Aa F, Deprest J, De Ridder D. Surgical Treatment of female stress urinary incontinence: Do tapes stand the test of time? *Eur Urol* 2017;72(4):592–593.
- [11] Burkhard FC, Bosch JLHR, Cruz F, et al. EAU guidelines on urinary incontinence in adults. ISBN 978-94-92671-07-3. EAU Guidelines Office, Arnhem, The Netherlands, 2020.

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