Chia-Hsuan Yang **楊佳璇**
(Y10)

Comparison between MUS concurrent with PRS and MUS after PRS in treating stress urinary incontinence

Chia-Hsuan Yang MD[1], Tsia-Shu Lo MD[1,2], Wu-Chiao Hsieh MD[1], Yi-Hao Lin MD[1,2], Alex C Wang MD[1]
[1.] Dept. of Obs. and Gyn., Keelung, /Taipei/, Linko, Chang Gung Memorial Hospital, Taiwan
[2.] Chang Gung University, School of Medicine, Taiwan

Introduction: The goal of this study was to assess the outcomes of patients with symptomatic POP and SUI who underwent either a combined surgery or POP repair first, followed by SUI repair as a second stage. As far as we know, no large-scale study has been performed so far to answer this question.

Material and Methods: This was a comparative retrospective study, performed in a tertiary referral center. The medical records of 2,876 patients with symptomatic advanced POP (POP-Q stage III and IV) were reviewed. The cohort included two groups: first, patients with who were treated with PRS and MUS at the same time. Second, patient who underwent extensive PRS surgery only. According to their post-operative clinical and subjective findings, they underwent secondary MUS. Patients with previous pelvic surgeries or prior mesh installment, or those who were medically unfit for surgery, were excluded. The TVM types include Perigee, Avaulta, PROLIFT, Elevate A, Uphold, Surelift and Calistar-S. The MUS procedures included Gynecare TVT, Monarc , Obtryx ,KIM Miniarc , Ophira, Ajust or Solyx. The primary outcome was objective and subjective cure rates after one year follow-up. Secondary outcome included quality of life, presence of lower urinary tract symptoms (LUTS) and surgical complications.

Results: A total of 478 patients included in the combined-surgery group and 82 were included in the 2-staged group. The objective cure rate in the combined group was 90%, whereas the subjective cure rate was 89.1%. The objective and subjective cure rates in the staged group were lower: 81.7% and 79.3%, respectively. The pre-operative occult SUI sub-group outperformed the overt sub-group in terms of objective cure rate (92.1% vs. 85.8%, respectively, $p = 0.03$) and subjective cure rate (91.8% vs. 84.0%, respectively, $p = 0.012$). Patients in the Staged group were younger and had a higher BMI. Patients in that group had a higher degree of SUI, as evidenced by lower MUCP and FL values, a higher rate of ISD, higher Pad test (27.6 grams vs. 11.8 grams, $p < 0.001$) and worse findings in the urodynamic study (UDS). Patients in the staged group scored lower on the UDI-6, IIQ-7, and POPDI-6 questionnaires, indicating a substantial difference in pre-operative subjective appraisal. However, it was not visible after surgery.

Conclusions: This study shows that combined surgery for treatment of POP and SUI is more efficient than staged one, in 12-months follow-up period. Furthermore, patients with occult SUI had better outcome than those with overt SUI.

Chien-Chien Yu 游千千
(Y11)

Outcomes on mid-urethral sling for Urodynamic stress incontinence following extensive pelvic reconstructive surgery

Chien-Chien Yu MD1, Tsia-Shu Lo MD[1,2], Min-Yu Chen MD[1], Wu-Chiao Hsieh MD[1], Yi-Hao Lin MD[1],
[1] Dept. of Obs. and Gyn., Keelung, /Taipei/, Linko, Chang Gung Memorial Hospital, Taiwan
[2] Chang Gung University, School of Medicine, Taiwan

Introduction and Hypothesis: To assess the outcomes of mid-urethral sling (MUS) procedures for urodynamic stress incontinence (USI) following extensive pelvic reconstructive surgery (PRS) and identify risk factors for persistent USI (P-USI).

Methods: This retrospective study analysed eighty-four women who underwent staged approach of MUS for USI after PRS for advanced pelvic organ prolapse (POPQ III and IV). The primary outcome was objective cure rate, defined by negative urine leakage on UDS and a 1-hour pad test weight of <2 grams. Subjective cure rate was through negative response to question 3 of UDI-6.

Results: The overall objective cure rate was 81.0%. The highest cure rate was observed in de novo USI (MUS-D) (89.7%) compared to women with persistent USD (MUS-P). Patients with overt SUI exhibited lower cure rates than those with occult SUI. Predictive factors for persistent USI were lower preoperative maximum urethral closure pressure (MUCP) ($p = 0.031$) and higher BMI in the MUS-P group compared to the MUS-D group ($p = 0.008$). Subjective improvement was noted especially in the MUS-D group, with a subjective cure rate of 78.6%. Those with MUS-D reported a higher impact on patient well-being post-surgery. No complications observed after MUS surgery at follow up.

Conclusions: Overt USI, low MUCP and high BMI are independent predictors for persistent USI after staged MUS approach after pelvic reconstructive surgery.
Keywords: Mid-urethral sling, pelvic reconstructive surgery, pelvic organ prolapse, de novo stress urinary incontinence, persistent urinary incontinence

Yi-Chi Chen **陳昱綺**
(Y12)

Voiding Dysfunction in Patients with Advanced Pelvic Organ Prolapse and Bladder Outlet Obstruction Following Pelvic Reconstructive Surgery: Urodynamic Profile and Predictive Risk Factors

Yi-Chi Chen[1] MD, Tsia-Shu Lo[1,2] MD, Hui-Yu Hung[1] MD, Wu-Chiao Hsieh[1] MD, Yi-Hao Lin[1,2] MD, Ching-Chung Liang1 MD
[1] Dept. of Obs. and Gyn., Linkou/Taipei/Keelung, Chang Gung Memorial Hospital, Taoyuan, Taiwan
[2] Chang Gung University, School of Medicine, Taoyuan, Taiwan

Study Objective: To determine the outcome of voiding function 1 year following Pelvic Reconstructive Surgery (PRS) in women with Bladder Outlet Obstruction (BOO).

Design: Retrospective cohort study

Setting: Tertiary Referral Hospital

Patients: One thousand eight hundred and ninety-four (1894) women underwent PRS for advanced Pelvic Organ Prolapse (POP) stage III-IV with urodynamic findings of BOO

Interventions: Pelvic Reconstructive Surgery

Measurements: The primary outcome measured was the resumption of normal voiding function, defined clinically and with multichannel urodynamic (UDS) testing at one year post-operatively. The secondary outcomes are to identify the different risk factors for persistence voiding dysfunction 1 year after PRS.

Main Results: Total of 431 women with POP-Q Stage III and IV, UDS of Qmax <15 ml/s and PdetQmax >20cmH20 were included. Resumption of normal voiding function were found in 91% (n=392/431), while 9% (n=39/431) remains to have voiding dysfunction (VD) 1 year post operatively. Those with persistent VD, 20.5%(n=8/39) remains having urodynamic diagnosis of BOO. Univariate and multivariate logistic regression reveals factors associated with post-operative VD are pre-operative maximal cystometric capacity (MCC) >500 ml and PVR > 200ml.

Conclusion: Voiding Dysfunction may persist in women with BOO following PRS, particularly in those with pre-operative MCC >500ml and post-void residual volume >200ml.

Chieh-Ju Lin 林潔如
(Y13)

Predictors of Surgical Failure following Sacrospinous Ligament Fixation using Anchorsure device

Chieh-ju,Lin, MD[1], Kun-Ling Lin, MD[1], Zi-Xi Loo, MD[1], Yi-Jie Song, MD[1] and Cheng Yu Long MD1, PhD[2].
[1] Department of Obstetrics and Gynecology, Kaohsiung Medical University Hospital, Kaohsiung Medical University, Kaohsiung, Taiwan.
[2] Department of Obstetrics and Gynecology, Kaohsiung Medical University, Kaohsiung, Taiwan

Objective: To identify the factors associated with pelvic organ prolapse (POP) recurrence after sacrospinous ligament fixation using Anchorsure device

Study design: Ninety-two women with symptomatic POP stage II to IV were scheduled for Sacrospinous Ligament Fixation. All subjects underwent urinalyses and pelvic examination using the POP quantification (POP-Q) staging system before and after surgery.

Results: Seven (7.6%) of 92 women reported POP recurrence after follow-up time of 12-34 months. We performed a univariate analysis of patients' characteristics to identify the predictors of surgical failure after TVM. There was no difference between two groups as to body mass index, POP stage, hysterectomy, and preoperative urinary symptoms (P>0.05). However, we found the functional advanced cystocele (P=0.01), rectocele (P=0.007), and POP-Q point Bp of >1 (P=0.019) were significant predictors of surgical failure. Multivariate logistic regression showed similar results.

Conclusions: Advanced cystocele, rectocele, and POP-Q point Bp of >1 were significant predictors of surgical failure following sacrospinous ligament fixation with Anchorsure device. POP recurrence remains a risk in untreated compartments following apical suspension, regardless of surgical experience.

Key words: Pelvic organ prolapse, recurrence, surgical failure, sacrospinous ligament fixation, apical prolapse

Aileen Ro 羅艾琳
(Y14)

In Vitro and In Vivo Morphology and Mechanical Properties of Three-Dimensional (3D) Polycaprolactone Stem Cells Coated Compound Mesh: Invention for Pelvic Floor Reconstructive Surgery

Aileen Ro, MD,[a] Tsia-Shu Lo, MD,[ab] Yi-Pin Chen MD PhD,[ab] Steven W. Shaw MD PhD,[ab] Yi-Hao Lin MD[ab], Shih-Jung Liu PhD[ab]

[a]Department of Obstetrics and Gynecology, Keelung/Taipei/Linkou, Chang Gung Memorial hospital, Taiwan

[b]Chung Gung University, School of Medicine, Taiwan

Objective: The usage of transvaginal mesh to restore anatomical structure in the treatment of pelvic floor dysfunction carries significant long-term complications. In the search of an ideal mesh suitable for pelvic reconstructive surgery, this study aimed to develop a biocompatible substitute to improve the tissue function using a printed 3D polycaprolactone (PCL) mesh cultivated with human amniotic fluid stem cells (hAFSC) as a scaffold.

Material and Methods: The longer degradation properties of PCL is chosen to serve as a scaffold and reservoir for hAFSC, in the attempt to achieve a mesh complex with good biocompatibility, biodegradable, with adequate mechanical strength and tissue generation. The PCL mesh was seeded with hAFSC, and its metabolic activity were evaluated in vitro.

Results: Implantation of PCL-hAFSC mesh and PCL mesh were conducted on Spraugue-Dawley rats reveals cell viability and proliferation of hAFSC presents throughout study. There was no local inflammatory reaction to surrounding tissue suggesting its biocompatibility. The biomechanical properties of tissue-mesh complex tension-strength declined over time, showing highest tension strength on the first month, with mesh seeded with hAFSC providing higher strength compared to mesh stand-alone.

Conclusions: This study shed potential of 3D printed PCL cultivated with hAFSC as an ideal mesh for the surgical treatment in pelvic reconstructive surgery.

Yu-Ling Tu 涂育綾
(Y15)

Risk factors of persistent de Novo SUI following TVM surgery and how to treat it?

Yu-Ling Tu[1], MD, Yi-Jie Song[1], MD,. Zi-Xi Loo[1] , MD, Kun-Ling Lin[1], MD, phD, and Cheng Yu Long[2] MD, PhD.
[1] Department of Obstetrics and Gynecology, Kaohsiung Medical University Hospital, Kaohsiung Medical University, Kaohsiung, Taiwan.
[2] Department of Obstetrics and Gynecology, Kaohsiung Medical University, Kaohsiung, Taiwan

Objective: To investigate risk factors of persistent de novo SUI post TVM surgery.

Materials and Methods: Fifty women with symptomatic POP stages II to IV defined by the POP quantification (POP-Q) staging system developed de novo SUI after receiving TVM procedures at our hospital. Amongst them, SUI condition of fifteen women resolved by itself six months later while others remained. The Preoperative and postoperative assessments included POP-Q parameters, multiple validated questionnaires and urodynamic studies were compared between the two groups.

Result: 30% (15/50) of de novo SUI will cure without treatment. POP duration, preoperative pad test and concomitant posterior mesh repair ($P<0.05$) were risk factors associated with persistent de novo SUI six months following surgery. Only 4% of women with persistent de novo SUI require further sling surgery.

Conclusion: Only 4% of women with persistent de novo SUI need additional sling surgery. Vaginal laser may be an alternative method for persistent de novo SUI.

Chien-Tung Lin **林建棟**
(Y16)

Modified Surelift anterior-apical transvaginal mesh for advanced urogenital prolapse: Retrospective surgical, functional and sonographic outcomes at 3 years

[a.] Chien-Tung Lin MD,[a.b.] Tsia-Shu Lo MD,[a.] Ai-Leen Ro MD,[a.] Yen-Ting Chen MD,[a.] Fu-Jie Chu MD,[a.] Wu-Chiao Hsieh MD,
[a.] Yi-Hao Lin MD,
[a.] Dept. of Obs. and Gyn., Keelung, /Taipei/, Linko, Chang Gung Memorial Hospital, Taiwan
[b.] Chang Gung University, School of Medicine, Taiwan

Objective: This study evaluates the outcomes of modified transvaginal mesh (TVM) Surelift in managing advanced pelvic organ prolapse (POP) over a 3-year follow-up period, focusing on surgical success, functional improvement, and sonographic findings.

Methods: A retrospective review was conducted on 99 women who underwent Surelift System surgery for advanced POP Stage III and IV between July 2018 to January 2020. Objective evaluation included Pelvic Organ Prolapse Quantification (POP-Q), multichannel urodynamic (UDS), and introital 2D ultrasonographic measurement. Subjective evaluation uses validated questionnaires of Incontinence Impact Questionnaire-7(IIQ-7), Uro genital Distress Inventory-6(UDI-6), Pelvic Organ Prolapse Distress Inventory 6(POPDI-6), Colorectal Anal Distress Inventory-8(CRADI-8) and Pelvic organ prolapse/ Urinary Incontinence Sexual Questionnaire (PISQ-12). Outcomes were examined at 3 months, yearly and at 3 years postoperative. Secondary outcome included de novo or persistent urodynamic stress incontinence (USI) and surgical complications.

Results: Eighty-five women were included in the final analysis. At 3 years postoperative, the objective cure rate was 94.1 % and subjective cure rate of 91.8 %. Ultrasonography revealed initial mesh elongation and thickening at first year, resolving by the third year, while the distance between the bladder neck and mesh remained stable. Significant improvement in POP-Q components (Aa,Ba,C,Ap,Bp and TVL of $p < 0.001$), UDS ($p < 0.001$) and all validated Quality of Life (QoL) questionnaires ($p < 0.001$) were seen. De Novo USI and persistent USI occurred in 31.5 %. Complications included vaginal mesh exposure requiring excision in 4.7 % of patients, and one intra operative bladder injury corrected promptly.

Conclusion: The Surelift System TVM demonstrates safety and efficacy in treating advanced anterior-apical POP, achieving high cure rates, secured mesh placement, and minimal complications at 3 years post-operative.

Han-Ni Li 李函妮
(Y17)

Efficacy and Safety of Solifenacin with Local Estrogen Versus Combination Treatment with Mirabegron and Solifenacin for Refractory Overactive Bladder in Menopausal Women: A Randomized Clinical Trial

Hui-Hsuan Lau[a,b,c], MD, Jiun-Chyi Hwang[a,b], MD, Tsung-Hsien Su[a,b,c], MD, PhD
[a] Mackay Medical College, New Taipei City, Taiwan
[b] Division of Urogynecology, Department of Obstetrics and Gynecology, Mackay Memorial Hospital, Taipei, Taiwan
[c] Mackay Medicine, Nursing and Management College, Taipei, Taiwan

Objective: Refractory OAB may require multidrug treatments, which can lead to poor compliance due to side effects. This study aimed to compare the outcomes of solifenacin combined with mirabegron or local estrogen for refractory OAB in menopausal women. We hypothesize that topical estrogen can be an effective alternative.
Methods: This randomized clinical trial was conducted between January 2024 and June 2024. Patients who failed to respond to monotherapy were recruited and randomly assigned (1:1) to one of two 12-week treatments: solifenacin 5 mg once daily plus mirabegron 25 mg (Group A) or solifenacin 5 mg once daily plus 0.5 g conjugated estrogen intravaginal cream (0.625 mg/g) twice weekly (Group B). OAB symptoms and quality of life were assessed before and after treatment. Primary endpoints included urgency, frequency, nocturia, and incontinence episodes within 24 hours. Quality of life was evaluated using the short forms of the Incontinence Impact Questionnaire (IIQ-7), Urogenital Distress Inventory (UDI-6), and Overactive Bladder Symptom Score (OABSS). Adverse events were also analyzed. Continuous variables were compared using Student’ s t-tests, while categorical variables were assessed with Fisher’ s exact test or chi-square test. Paired t-tests were used to compare continuous variables before and after treatment.
Results: A total of 90 women were enrolled, with 67 (74%) completing the 12-week treatment. Group A (solifenacin + mirabegron, n=37) showed significant improvements in quality of life (IIQ-7: 9.8±6.4 vs. 7.5±6.3, p=0.015; OABSS: 9.2±3.3 vs. 6.5±3.8, p=0.004) and OAB symptoms, including micturition (10.0±4.6 vs. 7.1±4.8, p=0.004), nocturia (3.1±1.5 vs. 2.1±1.5, p=0.002), and urgency incontinence (2.9±3.0 vs. 1.5±1.7, p=0.021). Group B (solifenacin + estrogen, n=30) showed improvements in UDI-6 (6.9±3.8 vs. 5.3±4.1, p=0.006) and IIQ-7 (7.7±5.9 vs. 5.7±5.3, p=0.013), with marginal improvements in OABSS (7.9±3.5 vs. 6.6±3.8, p=0.051) and micturition (9.2±3.7 vs. 7.7±4.1, p=0.058). No significant differences were found in treatment satisfaction or adverse events between the groups.
Conclusion: Topical estrogen may be a safe and effective alternative to combination treatment for menopausal women with refractory overactive bladder.