台灣婦產科醫學會
Taiwan Association of Obstetrics and Gynecology

POP Surgery: Should the uterus be removed or retained, and what should be considered?

A Multidisciplinary Perspective
Comprehensive Approach

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Choosing the **“right”** treatment strategy for uterine prolapse, whether surgical or nonsurgical, should take into consideration the individual patient's **sexual and reproductive activity**, **personal feelings**, **sites and degrees of pelvic prolapse**, **concurrent pelvic pathology**, and **overall health status**.

Roger P. Goldberg and Nani P. Moss, Chapter 87 Uterine Preservation and Hysteropexy, Textbook of Female Urology and Urogynecology, p.945-957, DOI: 10.1201/9781003144243-95

Outline

- **Introduction**
- Definition of Pelvic Organ Prolapse (POP)
- Prevalence and Risk Factors
- Overview of Surgical Management
- **Key Considerations in Surgical Decision**
- From multi-specialists' Views
- Anatomical and Surgical Considerations
- Patient-Centered Approach

Introduction

- Definition of Pelvic Organ Prolapse (POP)
- Prevalence and Risk Factors
- Overview of Surgical Management

Pelvic Organ Prolapse

- **Definitions: The descent of one or more of the genital organs below their normal position.**
- Etiology:

• Advancing **age**

• Pregnancy and vaginal delivery

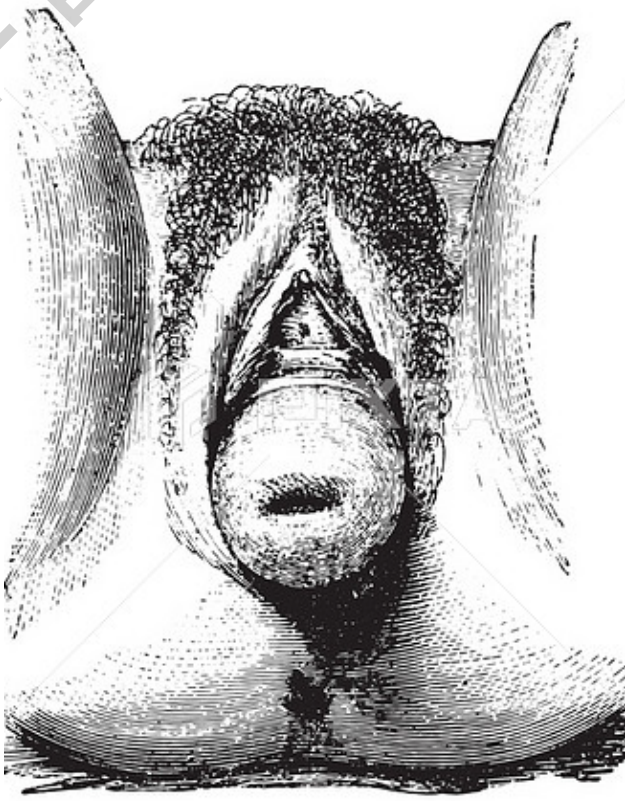
• Family history

• Racial predisposition: Hispanic or white race

• Intra-abdominal pressure: **Obesity** and overweight, Chronic constipation, Chronic cough, Repeated heavy lifting

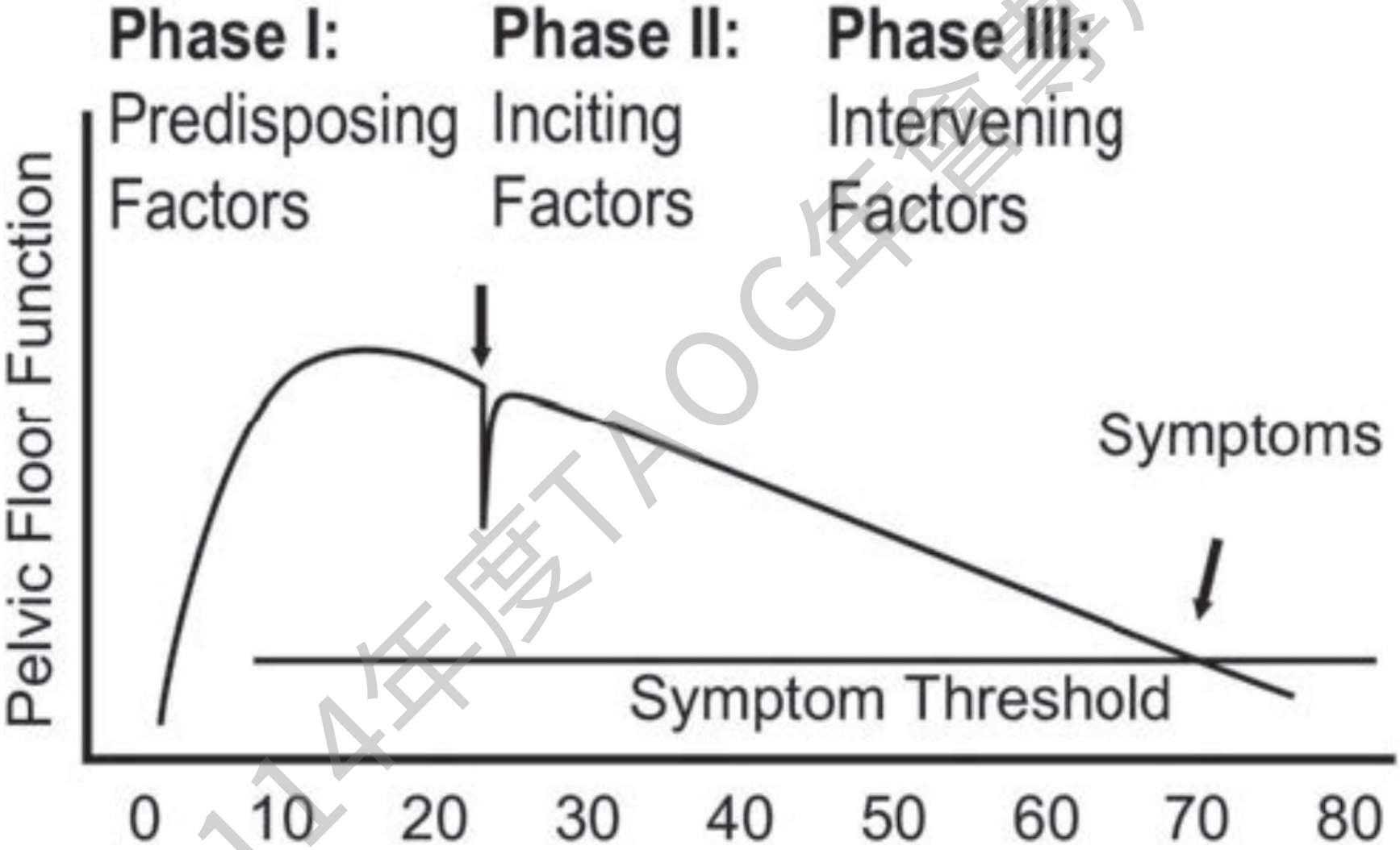
• Connective tissue disorders

• Prior pelvic surgery



Steven E. Swift and Joel D. Winer, Chapter 81 Classification and Epidemiology of Pelvic Organ Prolapse, Textbook of Female Urology and Urogynecology, p.880-888, DOI: 10.1201/9781003144243-89

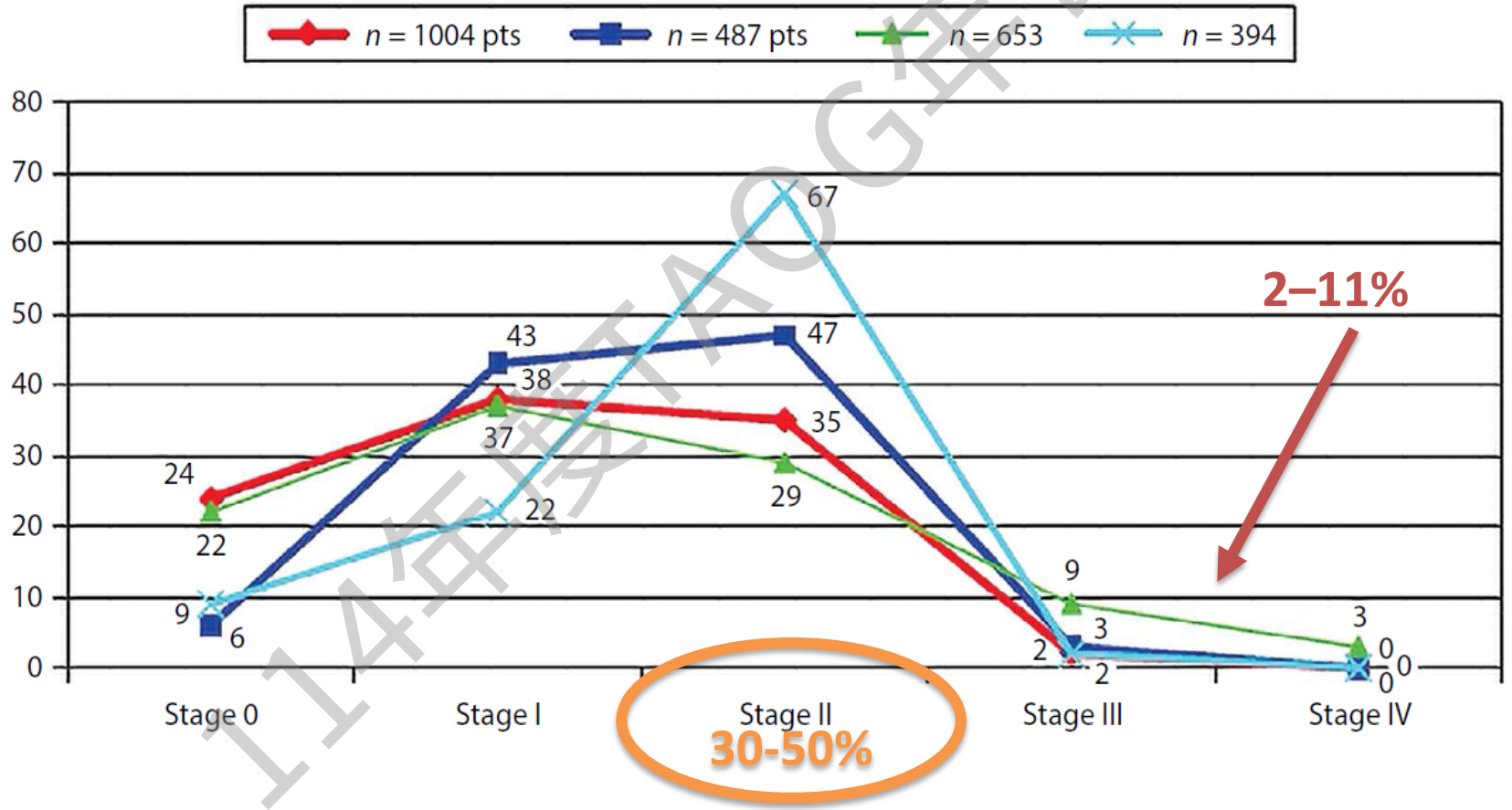
Lifespan Analysis of Pelvic Floor Function



Delancey JO, Kane Low L, Miller JM, et al. Graphic integration of causal factors of pelvic floor disorders: An integrated life span model. Am J Obstet Gynecol 2008;199[6]:610.e1–610.e5

Epidemiology of POP

- Incidence and Prevalence in Different Age Groups
- Risk Factors: Parity, Aging, Obesity, Genetic Predisposition



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Pathophysiology of POP

- Weakness of Pelvic Floor Muscles
- Role of Connective Tissue, Nerve Damage, and Hormonal Influence

Clinical Symptoms of POP

- Common Symptoms: Vaginal Bulge, Urinary Incontinence, Bowel Dysfunction
- Impact on Sexual Function and Quality of Life

Symptoms of POP

❶ Bulge symptoms

Bulge symptoms tend to get worse toward the end of the day or after prolonged standing:

- *Pelvic heaviness:* which gets worse toward the end of the day
- *Vaginal bulge:* the patient feels or even sees a bulge outside the vagina on straining that disappears on lying flat

❷ Urinary symptoms

- *Urinary frequency:*
  - Diurnal frequency: due to residual urine in prolapsing bladder pouch (incomplete emptying)
  - Diurnal and nocturnal: due to bladder irritation and cystitis
- *Sense of incomplete bladder emptying:* due to residual urine. Emptying of the bladder may require positioning and splinting of the anterior vaginal wall
- *Urinary retention:* due to urethral kinking

❸ Bowel symptoms

- *Incontinence:* of flatus, liquid, or solid stool
- *Feeling of incomplete emptying:* of the rectum. Splinting of the vagina or perineum may be needed to start or complete defecation

❹ Sexual symptoms

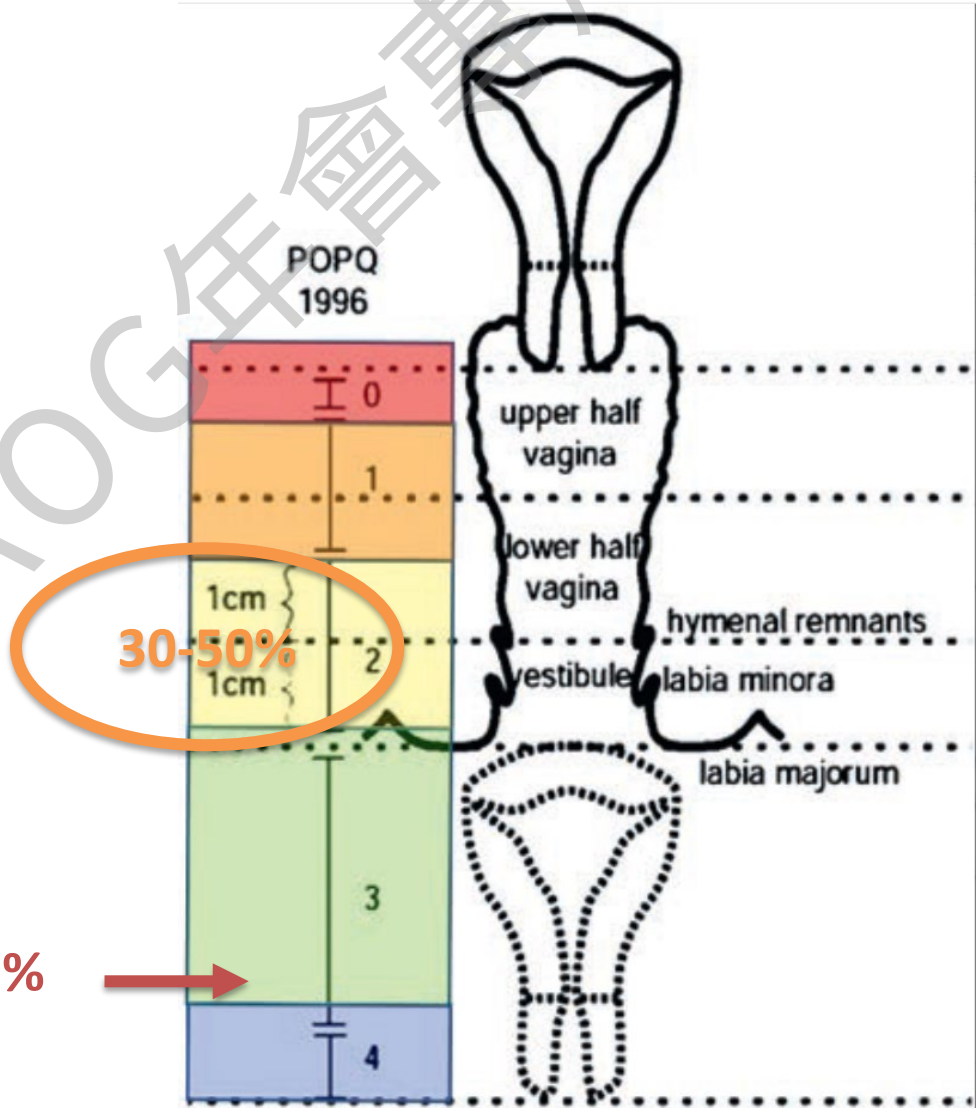
- *Dyspareunia:* due to the presence of vaginal mass and mucosal dryness due to exposure

❺ Pain symptoms

- *Chronic pelvic pain:* may be caused by pelvic congestion and anatomical distortion
- *Low back pain:* due to traction on uterosacral ligaments

Diagnosis of POP

- Physical Examination and Staging (POP-Q System)
- Imaging Techniques: Ultrasound, MRI, Urodynamic Studies

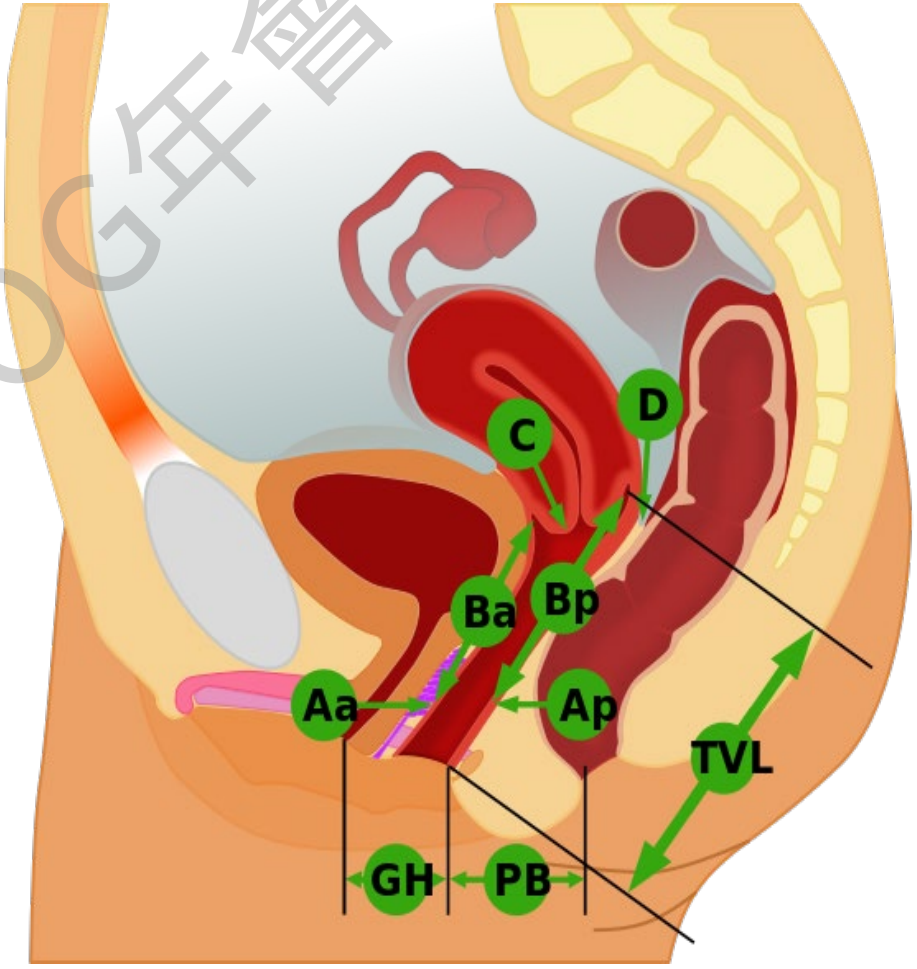


Haylen BT, de Ridder D, Freeman RM, et al. An International Urogynecological Association [IUGA]/International Continence Society [ICS] joint report on the terminology for female pelvic floor dysfunction. Int Urogynecol J 2010;21[1]:5–26.

Pelvic Organ Prolapse - Classification

- **Pelvic Organ Prolapse Quantification (POP-Q)**

Anterior vaginal wall points		Total vaginal length	Posterior vaginal wall points	
Point Aa	An anterior vaginal wall midpoint, 3 cm proximal to the urethral meatus	Total vaginal length (TVL) is the greatest length of the vagina when prolapse is fully reduced	**Point Ap**	A Midline posterior vaginal wall, 3 cm proximal to the hymenal ring
Point Ba	A midpoint between Aa and anterior fornix		**Point BP**	A midpoint between Ap and posterior fornix (cuff)
	Apical vaginal points			
Point C	Edge of the cervix or vaginal cuff			
Point D	Posterior fornix			
	Perineal points			
gh	The genital hiatus (gh): the middle of the urethral meatus to the posterior hymenal ring			
pb	The perineal body (pb): the posterior margin of the genital hiatus to the middle anus			



Pelvic Organ Prolapse - Treatment

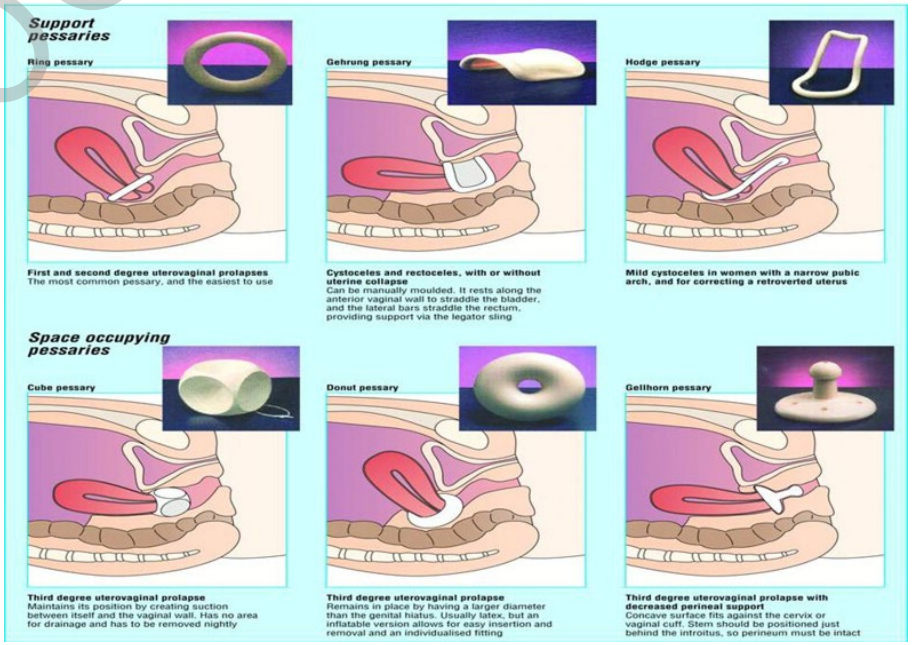
- **Conservative management**

— Reassurance and education

— Lifestyle modification: Weight loss and Pelvic muscle exercises (Kegel's exercise)

— Local or systemic estrogen

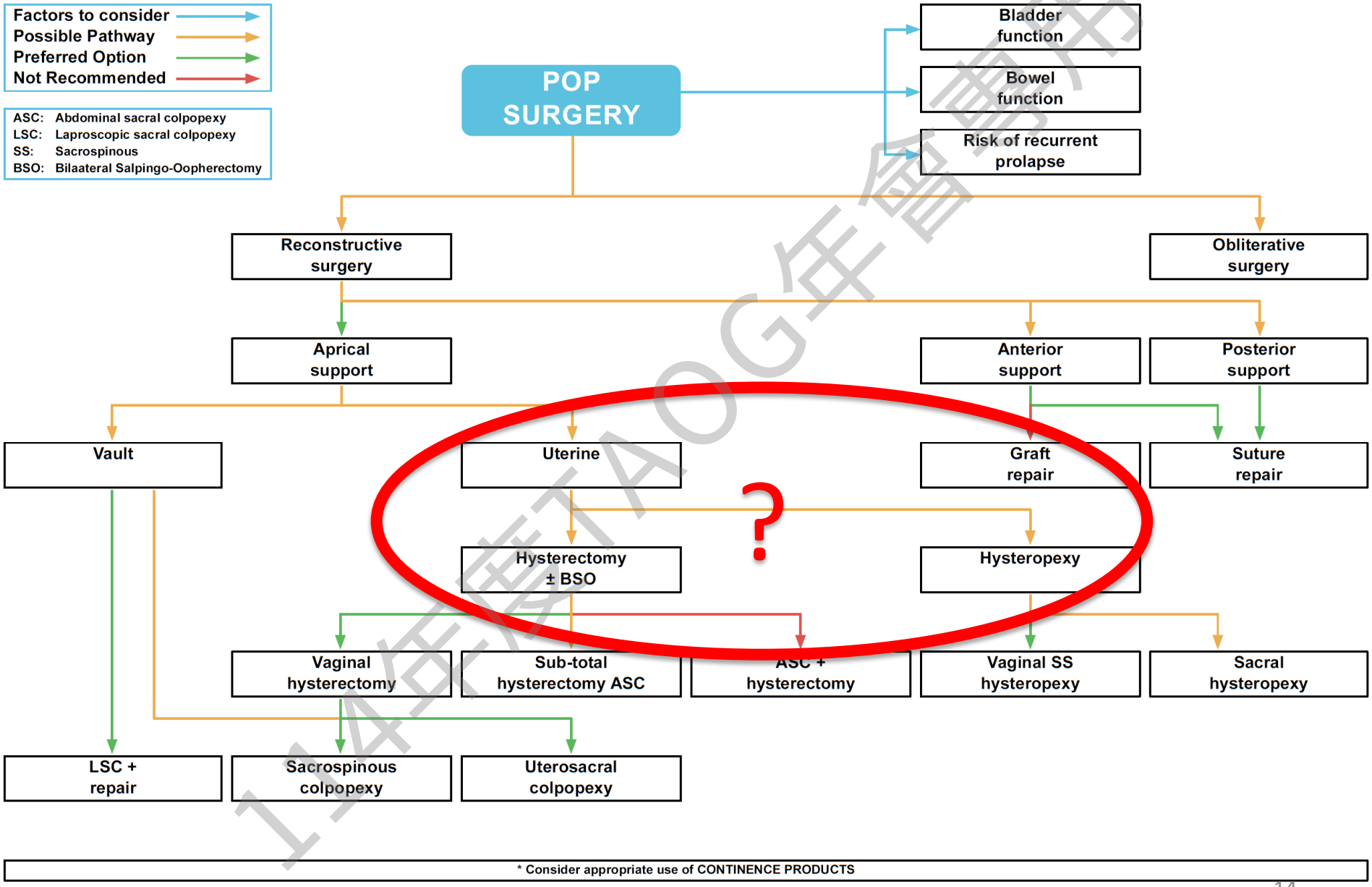
— Vaginal pessary



Key Considerations in Surgical Decision

- From Multi-Specialists' Views
- Anatomical and Surgical Considerations
- Patient-Centered Approach

ICI 2021 SURGICAL TREATMENT OF PELVIC ORGAN PROLAPSE



Urogynecological Considerations

- Pelvic Support Mechanisms
- Recurrence Risk After Different Surgical Interventions

Anatomy of pelvic organ support

Three levels of vaginal support (De Lancey)

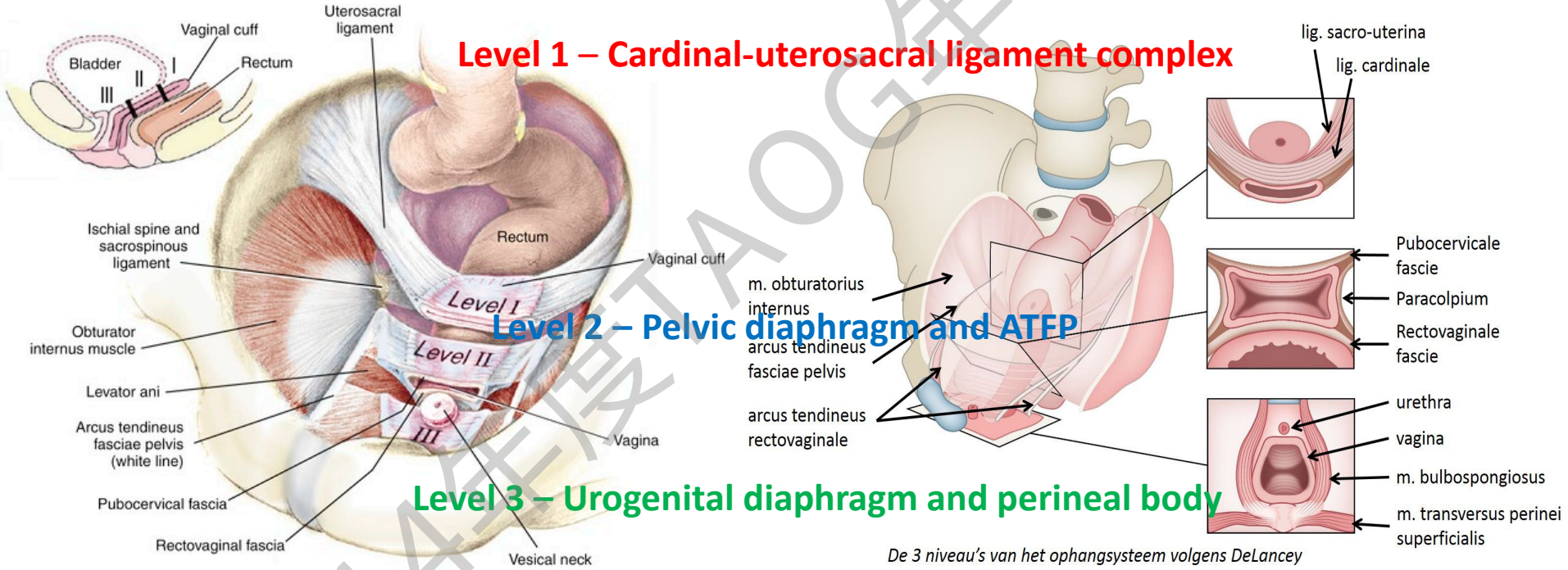
- **Level 1** – **Cardinal-uterosacral ligament complex** holds the uterus and upper vagina to the sacrum and lateral pelvic walls. Loss of support at this level contributes to the prolapse of the uterus and vaginal apex.

- **Level 2 – Pelvic diaphragm (levator ani muscles, coccygeus muscles, the fascia covering the muscles)** and **the arcus tendinous fascia complex** support the middle part of the vagina. Loss of support at this level causes anterior vaginal wall prolapse (cystocele) and paravaginal prolapse.

- **Level 3 – Urogenital diaphragm and perineal body** provide support to the lower part of the vagina. Loss of support anteriorly will result in urethrocele. Posteriorly, it will cause a rectocele.

Anatomy of pelvic organ support

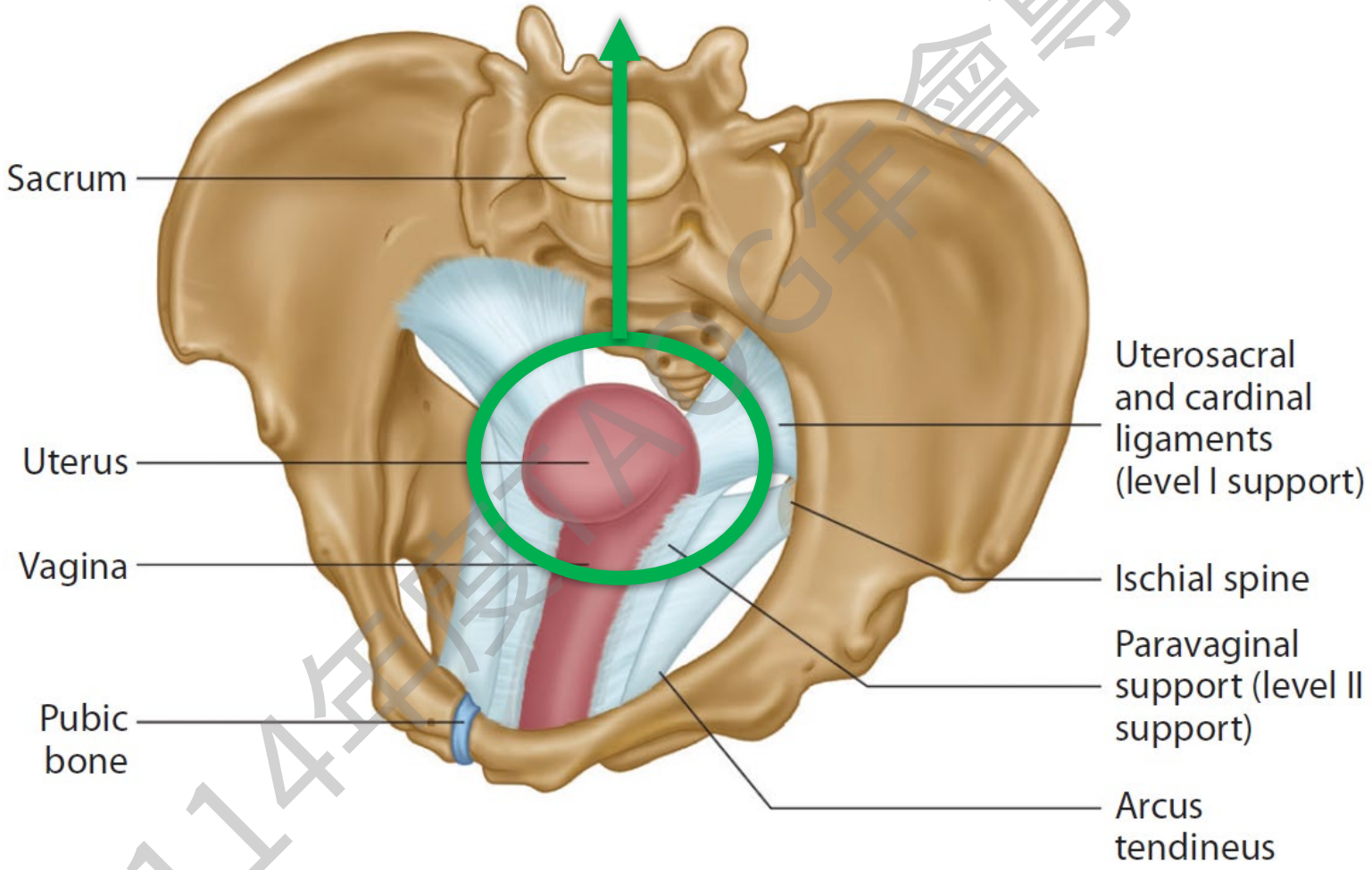
- Three levels of vaginal support (De Lancey)



De 3 niveau's van het ophangsysteem volgens DeLancey

DeLancey JO. Anatomic aspects of vaginal eversion after hysterectomy. Am J Obstet Gynecol 1992;166[6 Pt 1]:1717–1728.

It‘s all about the apex !!



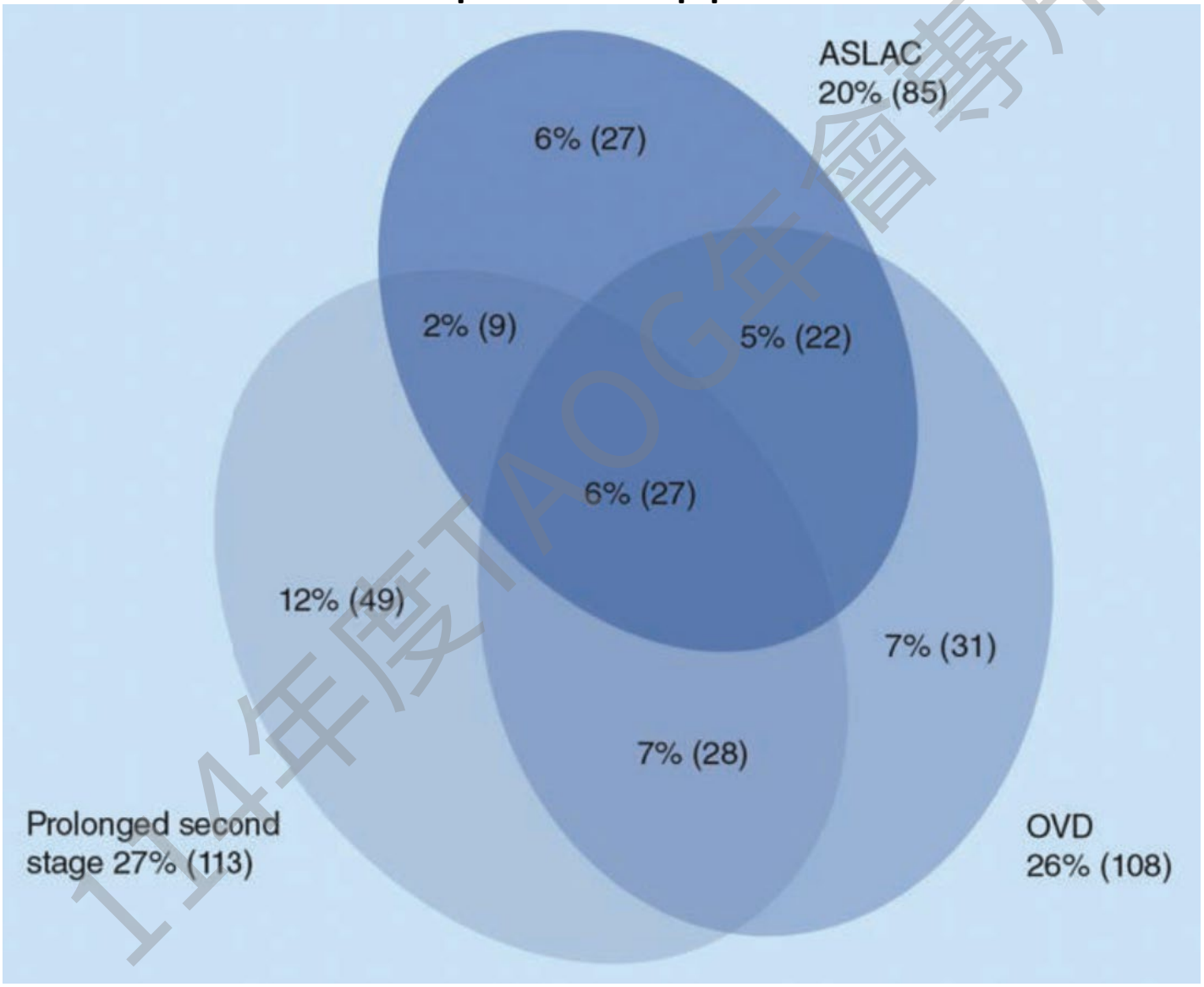
Seitz M, Goldberg RP, Uterine prolapse, in Cardozo L, Staskin D, eds, Textbook of Female Urology and Urogynecology, 4th ed., CRC Press, 2017

Obstetric and **Gynecological** Perspectives

Impact of POP Surgery on Fertility

Hormonal Considerations and Sexual Function

The **levator ani complex** provides a foundation of pelvic support!!



Memon HU, Handa VL. Vaginal childbirth and pelvic floor disorders. Womens Health [Lond] 2013;9[3]:265–277

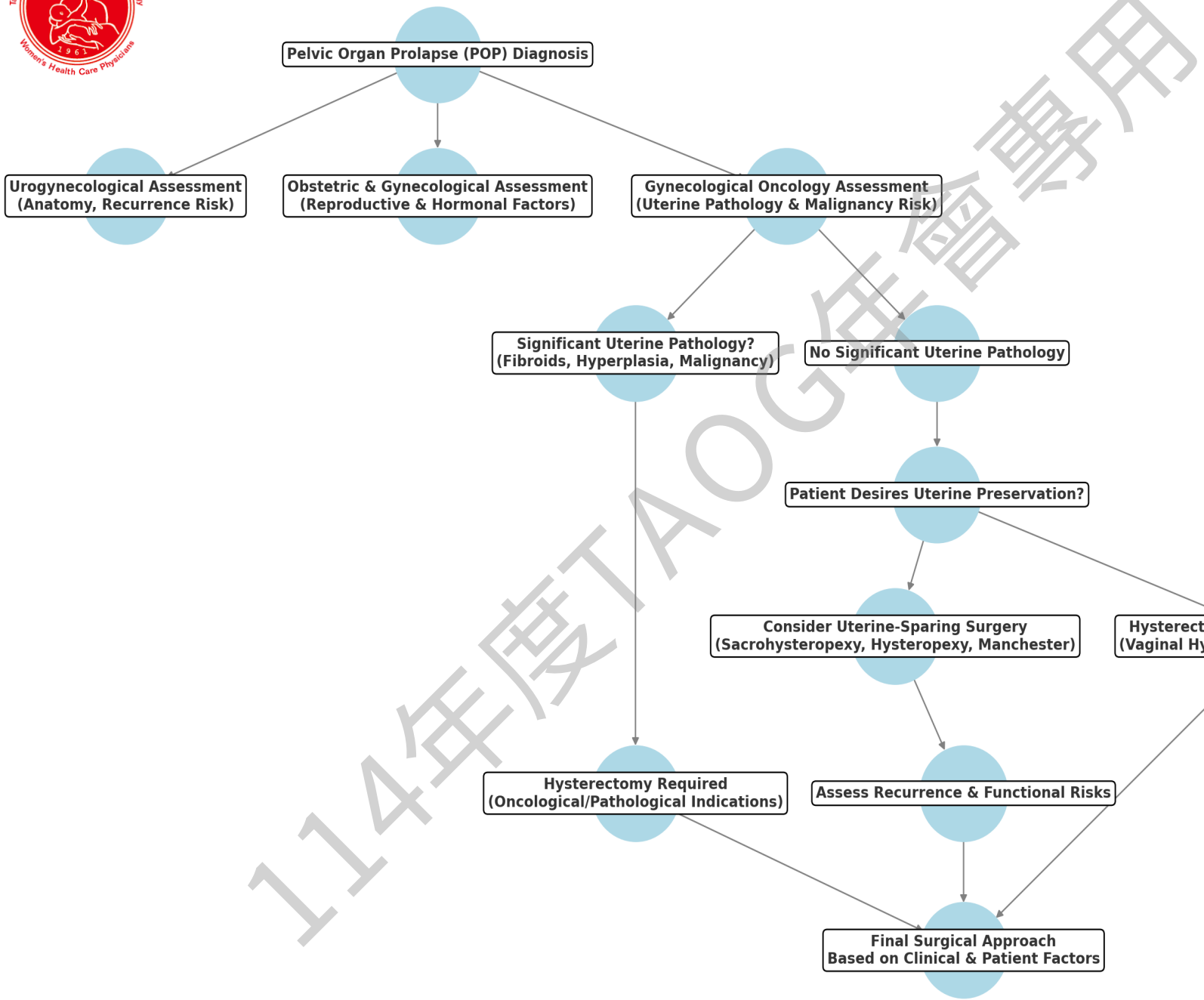
Gynecological Oncology

Considerations

Risk of Uterine Pathologies

When to Consider Hysterectomy for Oncological Reasons

Improved Multidisciplinary Decision-Making Flowchart for POP Surgery



Perceived and Studied Advantages and Disadvantages of Uterine Preservation at the Time of Prolapse Surgery

Advantages	Disadvantages
Reduction in surgical time and blood loss	Fewer surgical outcome data available
Maintenance of fertility	Maintenance of fertility
Natural menopausal timing	Small, ongoing risk for cervical or endometrial cancer
Avoidance of an unnecessary procedure	Subsequent hysterectomy may be difficult
Perceived role of the uterus and cervix in pelvic stability and sexual satisfaction	Continuation of menses
Less invasive	Ongoing surveillance of cervix and endometrium (which may be difficult)
Association with a quicker recovery	Colpopexy may be easier for surgeon after hysterectomy
Decreased blood loss	Worse POPQ C point
Decreased risk of mesh exposure	
Similar short-term outcomes	
Patient preference	
Longer total vaginal length on POPQ	

POPQ, Pelvic Organ Prolapse Questionnaire.

Hysterectomy-Based Repairs

- Vaginal Hysterectomy with Vault Suspension
- Laparoscopic/Robotic Hysterectomy with Mesh Augmentation

■ **Vaginal hysterectomy for uterovaginal prolapse**

1. McCall cudolplasty at hysterectomy
2. Sacrospinous fixation at hysterectomy

■ **Vaginal repair of post-hysterectomy vault prolapse (PHVP)**

1. High uterosacral ligament suspension (HUSLS)
2. Intraperitoneal uterosacral-cardinal ligament complex vault suspension
3. Extraperitoneal uterosacral-cardinal ligament complex vault suspension
4. Sacrospinous fixation for PHVP
5. Iliococcygeus vault suspension for PHVP

■ **Obliterative procedures**

1. Total colpocleisis
2. Le Fort partial colpocleisis

Uterine-Sparing Techniques

- Sacrohysteropexy, Sacrospinous Hysteropexy, Manchester Procedure

Contraindications for Uterine Preservation

Pregnancy
Postmenopausal bleeding
Current or recent cervical dysplasia
Familial cancer syndrome (*BRCA1* and *BRCA2* mutations, HNPCC, etc.)
Tamoxifen therapy
Symptomatic uterine abnormalities
Fibroids, adenomyosis, abnormal endometrial sampling
Abnormal uterine bleeding
Inability to comply with routine gynecologic surveillance
Cervical elongation (relative contraindication)

HNPCC, Hereditary nonpolyposis colorectal cancer.

Chapter 22 Uterine preservation in pelvic organ prolapse surgery, Walters & Karram Urogynecology and Reconstructive Pelvic Surgery, 5th, 2022

Anatomical and Surgical Impact

Uterine prolapse is primarily caused by **weakness in pelvic support structures** (cardinal-uterosacral ligament complex), not uterine pathology itself.

Hysterectomy involves disrupting these key supports, which may predispose to vaginal vault prolapse (reported incidence up to 43%) and increase the difficulty of future repairs.

Uterine-sparing procedures like hysteropexy **maintain the integrity of apical supports** and may better preserve vaginal architecture.

suspending rather than transecting

Robinson D, Thiagamoorthy G, Cardozo L. Post-hysterectomy vaginal vault prolapse. Maturitas. 2018 Jan;107:39–43.

Patient Preference and Sociocultural Factors

Uterine preservation is often driven by personal, cultural, religious, and reproductive preferences.

Factors such as educational level, income, and premenopausal status are associated with a higher likelihood of choosing uterine preservation.

Women who view the uterus as integral to their identity are significantly more inclined toward uterus-sparing options.

Korbly NB, Kassis NC, Good MM, et al. Patient preferences for uterine preservation and hysterectomy in women with pelvic organ prolapse. Am J Obstet Gynecol. 2013;209(5):470.e1–470.e6.

Surgical Outcomes and Recovery

Compared to hysterectomy, hysteropexy is associated with **shorter** operative time, **less** blood loss, and **faster** recovery.

Studies show **lower complication rates** in uterus-preserving surgeries.

However, **future pregnancies** remain a grey area—most reported cases involve cesarean delivery, and patients should ideally complete childbearing before POP surgery.

Maher CF, Carey MP, Slack MC, Murray CJ, Milligan M, Schluter P. Uterine preservation or hysterectomy at sacrospinous colpopexy for uterovaginal prolapse? Int Urogynecol J Pelvic Floor Dysfunct. 2001;12:381–4.

Sexual Function

Hysterectomy may **negatively** affect sexual function through nerve disruption, scarring, or anatomical alterations.

Research on sexual outcomes is conflicting: some studies show better scores in hysteropexy groups, while others find no significant difference or even a decline in orgasm frequency postoperatively in both groups.

Both approaches can lead to improvements in sexual function, though individual results vary.

Nager CW, Visco AG, Richter HE, et al. Effect of vaginal mesh hysteropexy vs vaginal hysterectomy with uterosacral ligament suspension on treatment failure in women with uterovaginal prolapse: a randomized clinical trial. JAMA. 2019 Sep 17;322(11):1054–65.

Oncological Considerations and Pathology

Hysterectomy may be preferred to eliminate future risk of uterine **pathology** (e.g., fibroids, hyperplasia, cancer).

Studies reveal a small but notable rate **(2.6%-0.3%)** of unexpected **premalignant** or **malignant** findings in hysterectomy specimens from POP surgeries.

Uterine-sparing is contraindicated in patients with **abnormal bleeding, high-risk pathology, or inability to comply with routine surveillance**.

Gutman RE. Does the uterus need to be removed to correct uterovaginal prolapse? Curr Opin Obstet Gynecol. 2016;28(5):435–40.

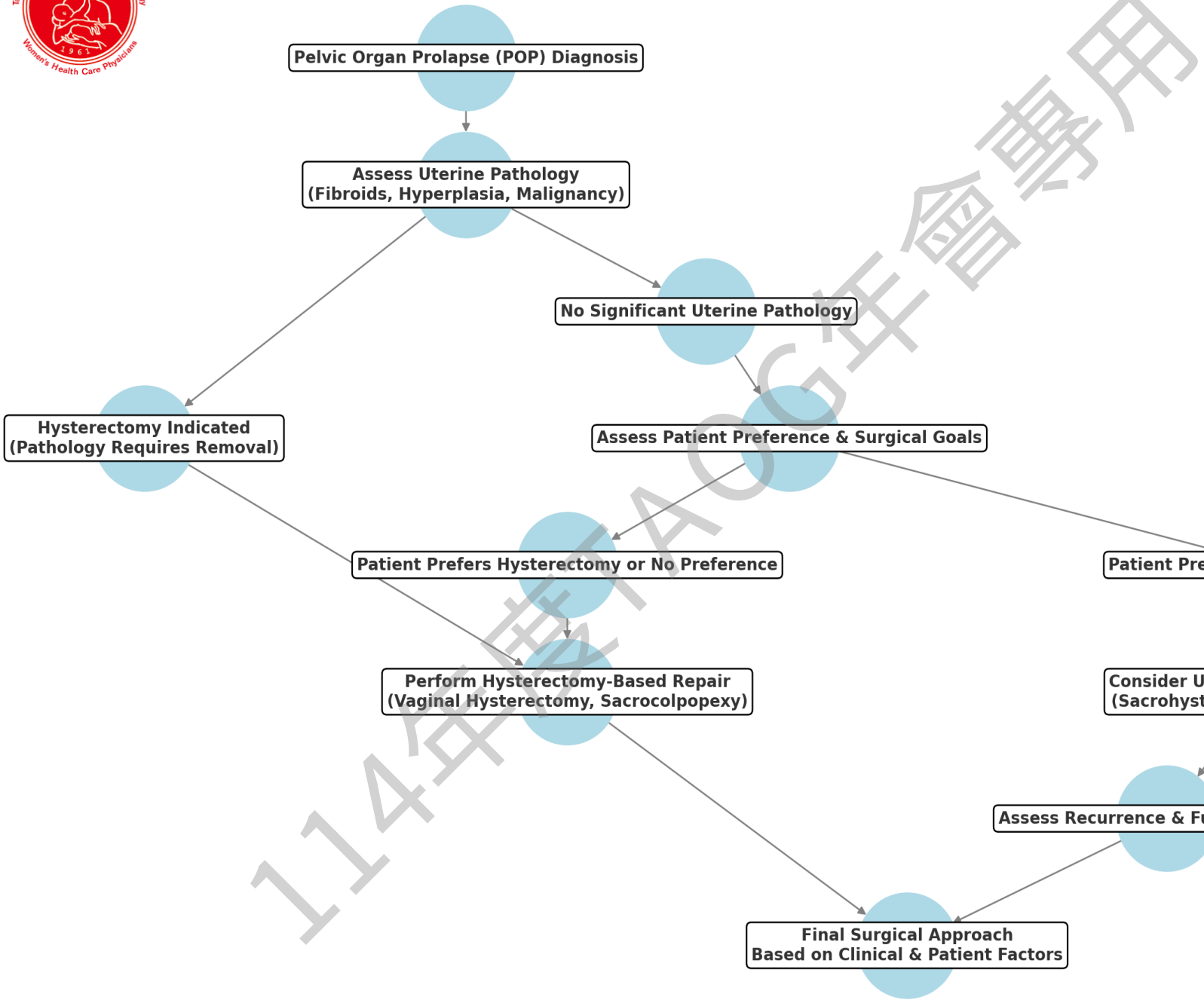
Procedure Types and Clinical Recommendations

Uterine preservation can be **reconstructive** (e.g., sacrospinous hysteropexy, uterosacral hysteropexy, Manchester procedure) or **obliterative** (e.g., LeFort colpocleisis).

Preoperative screening (e.g., Pap smear, endometrial biopsy) is essential to rule out hidden pathology.

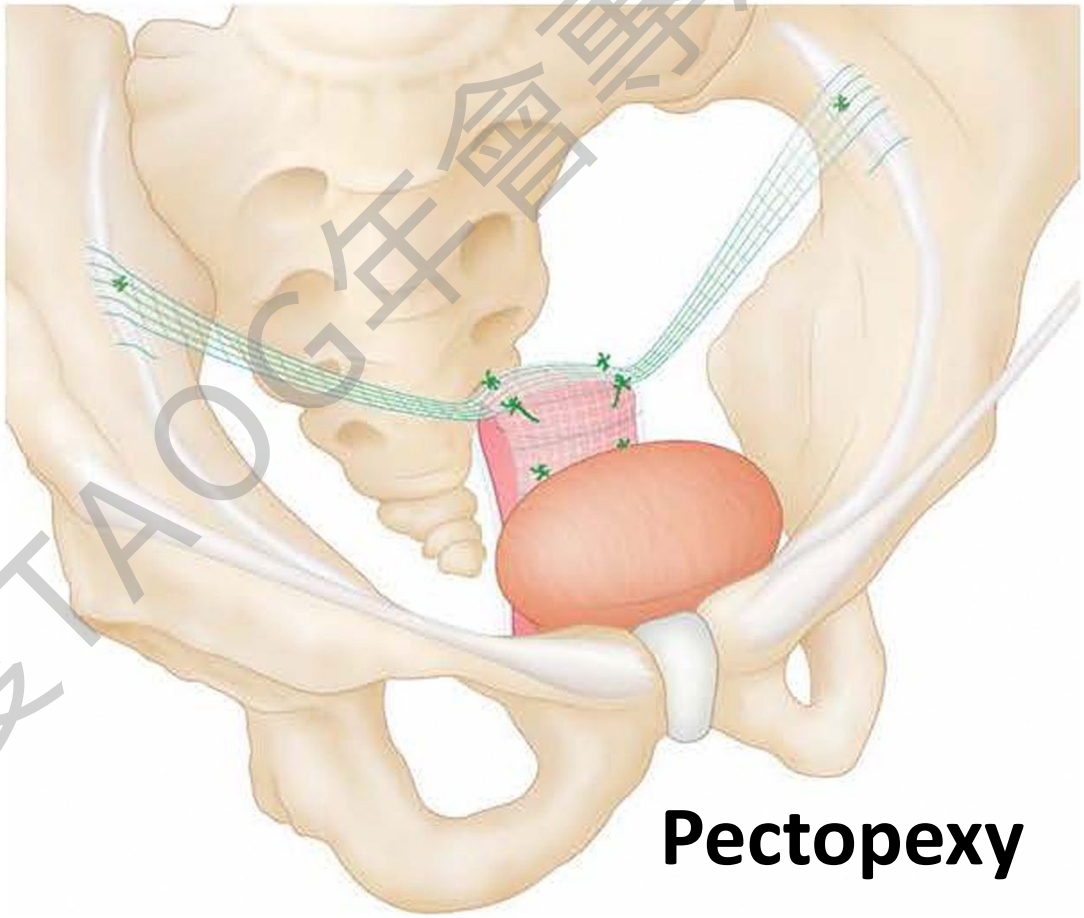
Decision-making should be individualized, weighing risks, anatomy, pathology, reproductive goals, and personal values.

Structured Decision-Making Flowchart for POP Surgery



Future Research and Developments

- Innovations in Pelvic Reconstructive Surgery
- New Techniques in Uterine-Sparing Approaches



Pectopexy

Heusinkveld. Pectopexy vs sacrocolpopexy. Am J Obstet Gynecol Glob Rep 2023.

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婦女骨盆機能醫學中心啟用

- **婦女骨盆機能醫學中心**設置於**5樓中央走道(鄰近婦產部門診)**，**於113年10月23日舉行揭牌啟用儀式**，提供女性患者更專業且全面的骨盆健康診療服務，從婦產科出發，結合多專科領域團隊的力量，提升女性骨盆機能相關疾病的治療效果，促進婦女健康照護領域的品質量能。

Thanks for your attention~!!

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