113年度台灣婦產科醫學會年會

Section: Minimally Invasive Surgery

Enhancing ERAS in Gynecologic Laparoscopy

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Enhanced Recovery After Surgery (ERAS®)

為什麼要談 ERAS

- 因為要評鑑
- 因為有 DRG
- 因為最 Cost-effectiveness

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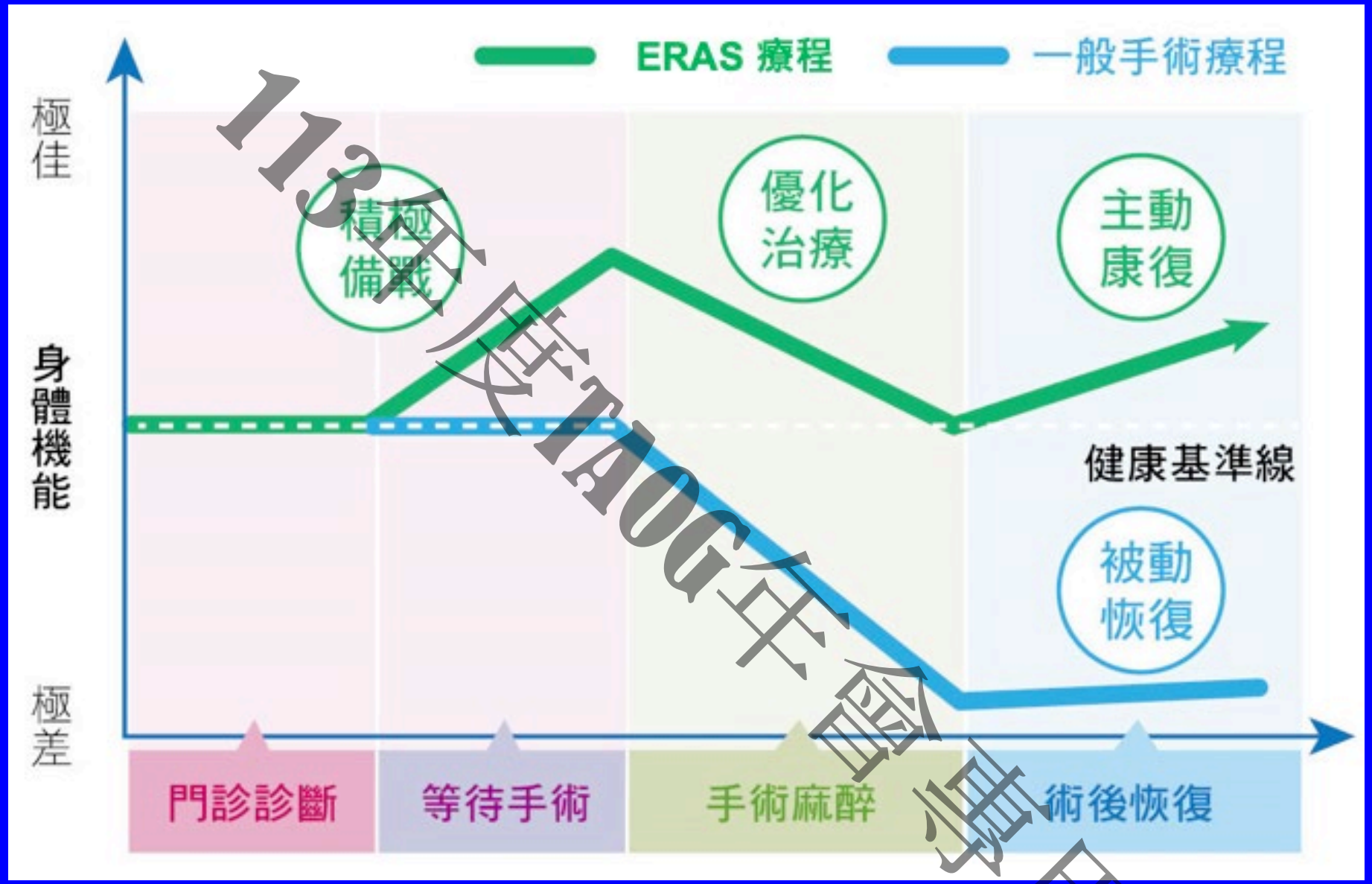
Enhanced Recovery After Surgery
(術後加速康復)

- 「術後加速康復」是一個**以實證醫學為基礎的手術麻醉照護的整合性全人醫療**。
- 其目的是 讓接受大手術之病人，在整個手術醫療的過程中，可以減緩術後不適，加速身體機能康復， 進一步降低手術的併發症。同時，享有輕鬆舒適的恢復品質，儘早回到正常的生活及工作。

全人照護ERAS

- 整合手術病人照護流程，讓病人從門診診斷、等待住院、術前準備、接受手術、術後恢復，甚至是出院追蹤的各個流程中，保持高品質且不中斷的照護水準，減少術後併發症發生，醫療資源有效利用。相較於現行的對於手術病人照護，不論在術前、術中及術後，相關的醫療品質都有明顯改善。
- 術後加速康復療程最大優勢在於：無需大量投資硬體設備，善用原有的專業人力；不影響原有醫療服務運作下，大量運用經實證醫學驗證過的治療方式，大幅提昇手術麻醉安全及病人術後恢復品質。



ERAS 整合手術病人照護流程

ERAS = 手術病人照護流程的改善

A recent study, with the addition of a formal ERAS teaching session and a newly hired “enhanced recovery” nurse, **the ERAS protocol was associated with cost savings of approximately 10%.**

Trowbridge ER, Evans SL, Sarosiek BM, et al. Enhanced recovery program for minimally invasive and vaginal urogynecologic surgery. Int Urogynecol J. 2019;30:313–321.
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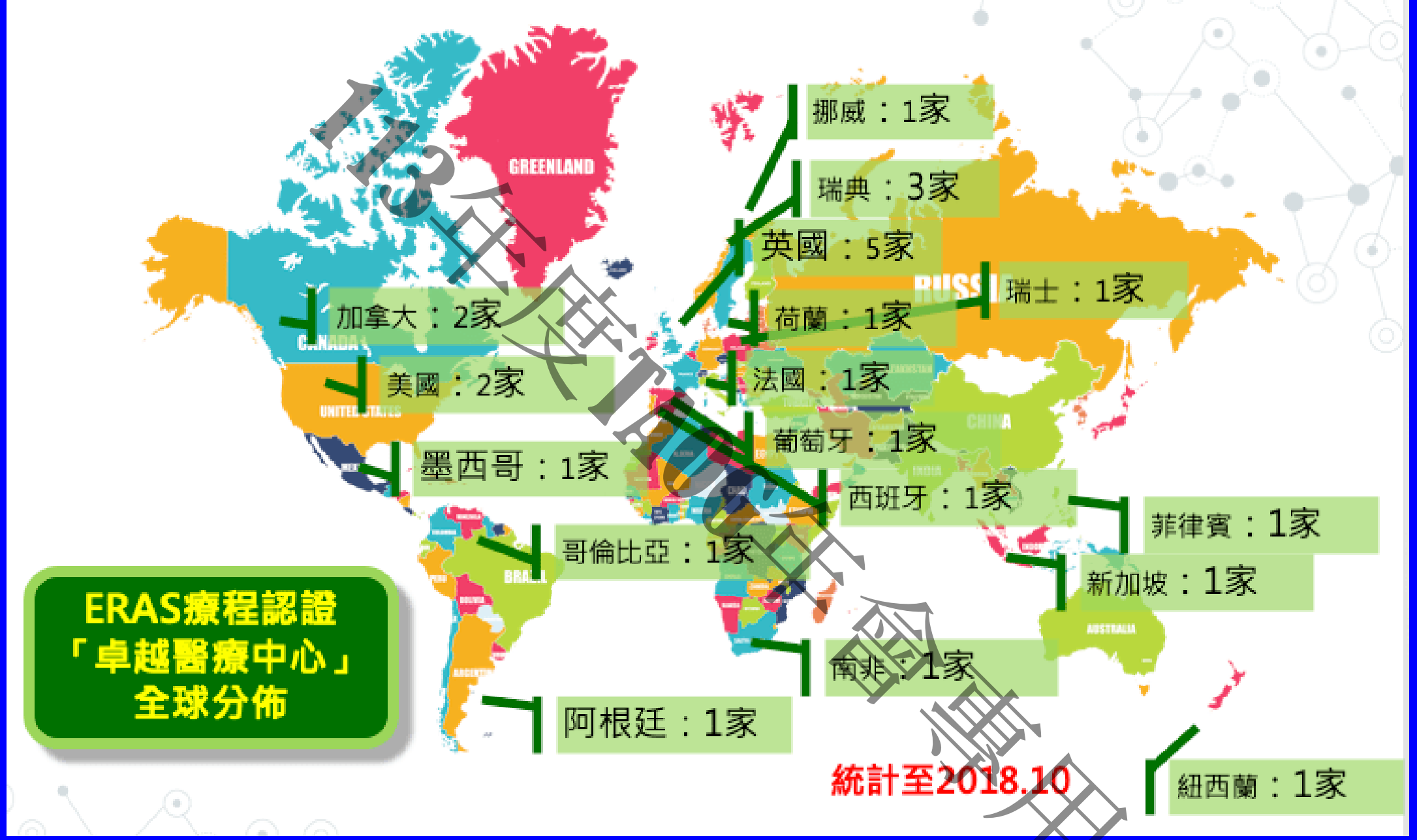


ERAS Center of Excellence

TAIWAN CHAPTER,ERAS SOCIETY

台灣術後加速康復學會

https://tweras.org/

ELSEVIER

JMIG The Journal of Minimally Invasive Gynecology

Special Article

Enhanced Recovery and Surgical Optimization Protocol for Minimally Invasive Gynecologic Surgery: An AAGL White Paper

Rebecca Stone, MD, MS, Erin Carey, MD, Amanda N. Fader, MD, Jocelyn Fitzgerald, MD, Lee Hammons, MD, Alysha Nensi, MD, Amy J. Park, MD, Stephanie Ricci, MD, Rick Rosenfield, MD, Stacey Scheib, MD, and Erica Weston, MD

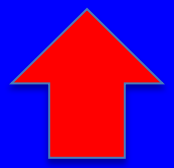
The first Enhanced Recovery After Surgery (ERAS) guideline in MIS. Both Benign and Malignant Gynecology

Journal of Minimally Invasive Gynecology (2020) 00, 1–25.

Triple Aim
The Centers for Medicare & Medicaid Services

Higher Quality Surgical Care

Better surgical outcomes
Lower health-related costs
Improved patient experience

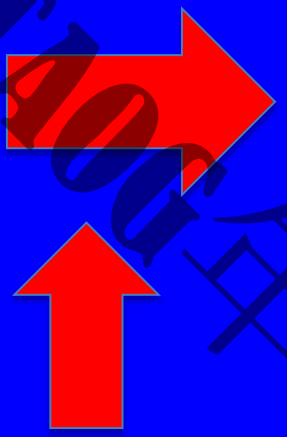


Minimally Invasive Surgery

First ERAS Guidelines for Gynecologic Oncology in 2016

- hospital length of stay (LOS) of 1.6 days
- **32% reduction in complications**
- 20% reduction in readmission
- no change in 30-day postoperative mortality
- mean cost savings of $2129 USD per patient

知道 ---------- 行動

知道  行動

Lecture, Training and Practise

Guideline

Question and Recommendation

Question: Preoperative education and counseling

Recommendation:

This should engage patients in interventions to mitigate modifiable risks, set appropriate expectations for recovery, initiate discharge planning, and provide reassurance through repetition and frequent contact.

實務情況：

(醫院沒有人力)

麻醉科：

手術前訪視

臨床醫師：

手術前諮詢

A recent study, with the addition of a formal ERAS teaching session and a newly hired “enhanced recovery” nurse, **the ERAS protocol was associated with cost savings of approximately 10%.**

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Question: Is perioperative oral intake safe and how can I convince my anesthesiologist?

Recommendation:

In alignment with anesthesiology society guidelines, patients should be encouraged to consume clear liquids until 2 h prior to surgery. Preoperative carbohydrate loading prior to surgery improves patient satisfaction and comfort.

實務情況：

麻醉科：

不能吃東西，藥物除外。

喝了一口水，也不行 。

臨床醫師：

Colon Prepare 三天 (以前)

手術前，飲食衛教 (現在)

Question: PONV prophylaxis

(Post-Operative Nausea and Vomiting)

Recommendation:

3 of the identified risk factors for PONV **are female gender**, **gynecologic surgery**, and **laparoscopic surgery**.

(the SAA consensus guidelines for the management of PONV)

實務情況：

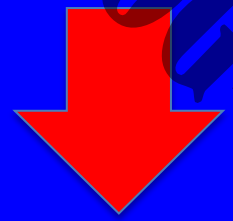
- Kytril 1 PC sent to OR (自費使用)
  (1/2 麻醉後，手術開始前； 1/2 手術結束後，拔管前。
- Prochlorperazine 5mg/mL
  (PRN Q4H if nausea/vomiting)

Granisetron is a serotonin 5-HT3 receptor antagonist used as an antiemetic to treat nausea and vomiting following chemotherapy and radiotherapy.

Question: Infection prophylaxis

Recommendation:

Implement an SSI (Surgical Site Infection) prevention bundle for MIGS.



Laparoscopy Approach Is Best

Question: How do I manage patients with antibiotics

Recommendation:

As less as possible.

實務情況：

- Cefazolin sodium 1GM/vial sent to OR
  (30 min before operation)
- Boost if long operation
  (more than 4 hours)
- Two vials for obese patient
  (more than 80 KG)

實務情況：

- Post-opertion

  On IV (NS 500ml for antibiotics)

  Cefazolin sodium 1GM/vial

  Gentamicin sulfate 80mg/2mL/vial

Question: Analgesia
Preoperative analgesia

Recommendation:

Preoperative administration of nonopioid adjuncts (oral NSAIDs, acetaminophen, and dexamethasone) is synergistic and translates into opioid-sparing effects postoperatively.

The urogesic phenazopyridine may increase voiding trial success.

實務情況：

- Dynastat 1pc IV push before to OR（自費使用)
- Post-operation

  Acetaminophen 500mg/tab

  Nalbuphine 10mg/mL/amp (自費使用)

  (PRN, Q4H, For Pain[疼痛評估>=4分])

- Parecoxib is the first parenteral COX-2 selective inhibitor in pain management.
- Parecoxib, the brand name Dynastat.
- It is approved in the European Union for short term perioperative pain control.

Question: What is the best approach to intraoperative analgesia?

Recommendation:

Techniques such as wound infiltration with local anesthetic and TAP (transversus abdominis plane) block are preferred over TEA (thoracic epidural analgesia) given the potential for complications and side effects.

實務情況：

- 花費太多時間

Laparoscopy Approach Is Best
Offering MIS is the 1st step in "Pain Management"

Question: Analgesia
Intraoperative analgesia

Recommendation:

There are no data supporting the routine use of ketamine, IV lidocaine, and regional blocks.

Consider ketorolac (15 mg IV) 30 minutes before case end and port-site infiltration with local anesthetics.

實務情況：

麻醉科：

太多 Nerve Block Procedure (自費使用)

病人自控式止痛（Patient Controlled Analgesia, PCA）

臨床醫師：

浪費太多時間

病人自控式止痛（Patient Controlled Analgesia, PCA）

Laparoscopy Approach Is Best

Offering MIS is the 1st step in “Pain Management”

Pain Is A Vital Sign

Question: How should I manage urinary drainage?

Recommendation:

Indwelling bladder catheters should be removed as early as possible in the postoperative period (on the day of surgery for MIS, and no later than POD1 for laparotomy) unless contraindications exist.

實務情況：

不裝尿管

何時拔尿管

Spontaneously Void

Bladder Scan

→ **Remove the urinary cather in the coming morning**

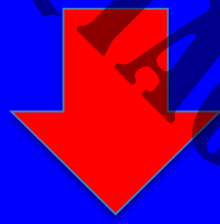
Question: What is appropriate venous thromboembolism (VTE) prophylaxis?

Recommendation:

Patients at increased risk of VTE should receive dual prophylaxis with mechanical compression and chemoprophylaxis, initiated preoperatively. Extended chemoprophylaxis should be prescribed to patients who meet high-risk criteria or undergo laparotomy for gynecologic malignancy. Extended prophylaxis with LMWH (low molecular weight heparin) or DOAC (direct oral anticoagulant) are equally effective and safe. Extended prophylaxis is of limited value in MIS patients.

實務情況：

- **Ovarian cancer cases**
- **Obese patients**



彈繃的使用 (**mechanical compression**)

Question: How do I create a successful same day discharge (SDD) program?

Recommendation:

Multidisciplinary SDD programs should be considered for minimally invasive gynecologic oncology procedures. Implementation requires multidisciplinary collaboration, education, patient and case selection, and ERAS perioperative principles.

實務情況：

- **Case Payment:** 健保給付
- 商業保險給付
- 可以做得到但是病人不願意

Question: Anemia (Pre-operative)

Recommendation:

Pre-operative: HgB > 12

HgB > 10

HgB > 8

HgB < 8

Oral iron taken in conjunction with vitamin C

Evidence does support preoperative correction of anemia with oral iron in elective, nonurgent cases, and with intravenous (IV) iron for a more severe and timely correction.

實務情況：

- 備血 888 (Whole blood, PRBC, Platelet)
- 輸血後直接開刀 ???

Question: Anemia (Intra-operative)

Recommendation:

Intra-operative:

Medical-- Intramyometrial dilute vasopressin

Hemostatic agents

Surgical-- Uterine artery embolization

Paracervical tourniquet

Vascular clamping (temporary or permanent)

(Hemostasis from start to end)

實務情況：

- 什麼都沒做 ???

(Laparoscopic Era has improved much in blood loss during surgery)

Question: Anemia (Post-operative)

Recommendation:

Post-operative: HgB > 12

HgB > 10

HgB > 8

Check vital sign and HgB after operation 4 hours later or coming morning

實務情況：

- **Blood transfusion Leukocyte-Poor RBC**

Question: Pneumoperitoneum

Recommendation:

There are no data supporting use of low-pressure pneumoperitoneum compared with standard pressure (12 mmHg−16 mmHg) or heated gas insufflation, with or without humidification, compared with cold gas in MIGS.

實務情況：

- low-pressure pneumoperitoneum for long duration operation

Question: Constipation prophylaxis

Recommendation:

Senokot 8.6 mg orally daily until back to baseline bowel movement frequency.

實務情況：

需要嗎 ???

順其自然

MgO 2# QID

Question: Time-efficient acute recovery phase

Recommendation:

Discontinue urinary catheter at case end unless contraindicated, consider retrograde fill voiding trial, encourage liberal oral intake and immediate ambulation.

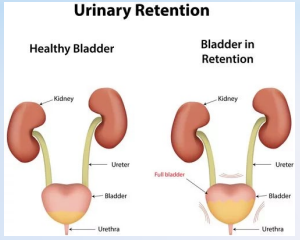
Definition:
"With a retrograde-fill voiding trial, the bladder is filled retrograde via a transurethral catheter to a set volume, typically 300 mL, and then the catheter is removed and the patient is asked to void" (Geller, 2014).

Post-Operative Retrograde Voiding Trial: Does it Help?

Lauren Elizabeth Lee: Senior Nursing Student
UNH Department of Nursing

Introduction

- "With a retrograde-fill voiding trial, the bladder is filled retrograde via a transurethral catheter to a set volume, typically 300 mL, and then the catheter is removed and the patient is asked to void" (Geller, 2014).
- One of the most common concerns following the removal of a Foley catheter post-operatively is that the patient will develop urinary retention. Urinary retention is defined as an inability to empty the bladder completely. Urinary retention can be assessed through the patient's ability to void fully following catheter removal (Urinary Retention, 2014).
- Retrograde voiding trials are a relatively new implementation in comparison to allowing the patient to void without filling the bladder manually. Due to the unfamiliarity of the trial, many seasoned nurses question the intervention and associated benefits.



(Urinary Retention, 2014).

PICOT:

For hospitalized, post-operative patients with a Foley catheter, does the implementation of retrograde voiding trials reduce the occurrences of urinary retention cases in comparison to patients that spontaneously void?

(The MGH, 2011).

Retrograde Voiding Trial Policy at MGH

"Just before the Foley is removed, sterile saline or sterile water is instilled into the bladder through the Foley, and the patient's response, as demonstrated by the ability to retain the instillation briefly followed by near-complete voiding, guides continuing care decisions" (Cronin, 2017).

How is a Backfill Voiding Trial a Nurse Driven Policy?

Nursing Actions	Special Considerations
Teach the patient about the procedure and prepare to implement.	The procedure is ideally implemented in the early morning.
Detach the collection container and attach a 60 mL catheter-tip syringe to distal end of Foley.	Maintain the sterility of the interior catheter and the bladder.
Slowly fill bladder with 300 mL of sterile water or saline through the catheter-tip syringe.	Water or saline may be at room temperature.
Deflate the Foley balloon and remove the catheter immediately.	Do not attach the 10 mL syringe for balloon deflation until after the instillation is complete as the increasing hydrostatic pressure may cause the fluid in the balloon to egress.
Instruct the patient to remain supine for 20 minutes and then ambulate to void.	
Assess and implement follow-up actions within 30 minutes of bladder filling.	
A. If the patient voids 200mL or greater, the patient has "passed" the trial and the catheter remains out.	The catheter may slip out of the bladder before instillation is complete
B. If the patient voids less than	

(Cronin, 2017).

Evidence-Based Practice

A. In a 2007 American Journal of Obstetrics and Gynecology randomized, controlled trial, 55 post-operative patients were either assigned to spontaneously void or undergo a retrograde fill. Of the participants that experienced urinary retention, 61.5% were in the spontaneous voiding group and 32.1% were in the retrograde group (Foster, 2007).

B. In a 2010 randomized, controlled trial, 50 post-operative women were studied. Of the 50 women, 25 were assigned retrograde and 25 were assigned to spontaneously void. 84% of the spontaneous group failed the trial, while 62% of the retrograde trial failed. Further statistics within the study showed the individuals undergoing the trial would choose the retrograde fill method over the spontaneous void (Geller, 2010).

C. In a 2010 prospective, randomized, crossover study, 79 post-operative patients were observed. This study group was divided into a spontaneous void group and a backfill void trial group. 91% of the backfill group passed their voiding trial, while only 56% of the spontaneous void group passed their trial (Pulvino, 2010).

Conclusion

When reviewing the evidence regarding retrograde voiding trials to predict urinary retention in post-operative patients, data shows that retrograde voiding trials reduce the occurrence of urinary retention in comparison to instructing individuals to void spontaneously. Therefore, Massachusetts General Hospital's policy regarding the retrograde voiding trial is supported by sound evidence-based research. Retrograde voiding trials should be implemented on floors that take post- operative patients. This will likely decrease urinary retention rates; therefore, shortening the length of stay for hospitalized individuals. Looking at the bigger picture, this will save the hospital valuable time and finances moving forward.

實務情況：

不裝尿管

何時拔尿管

Spontaneously Void

Bladder Scan

→ **Remove the urinary cather in the coming morning**

Question: IVF goals

Recommendation:

Aim for euvolemia with intraoperative buffered, isotonic crystalloids at a rate of 1 mL/kg/hr to 3 mL/kg/hr.

Do not administer IVF in preop; discontinue IVF at case end.

實務情況：

IV Lock

Laparoscopy Is Best for Gynecological Surgery

Example: Sugammadex

- Sugammadex, sold under the brand name Bridion, is a medication for the reversal of neuromuscular blockade induced by rocuronium and vecuronium in general anaesthesia.
- It is the first selective relaxant binding agent (SRBA). It is marketed by Merck.

- NT 6500 (自費使用)

Exploratory median times to recovery (TOF ratio of ≥0.9) from moderate block pooled across NMBA[11]

1.7
MINUTES
BRIDION ABW
2 mg/kg (n=38)

95% CI:
1.5, 2.1 minutes

3.4
MINUTES
BRIDION IBW
2 mg/kg (n=38)

95% CI:
2.2, 4.4 minutes

34.5
MINUTES
NEOSTIGMINE 5 mg + GLYCOPYRROLATE
1 mg (n=38)
95% CI:
27.0, 67.4 minutes

NMBA = neuromuscular blocking agent


Laparoscopic Surgeon
追求完美 近乎苛求
Thank You
113台灣TAOG年會講義