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BRIEFINGS FROM THE SECTION OF **UROGYNECOLOGY & RECONSTRUCTIVE PELVIC SURGERY**

Enhancing recovery in patients undergoing minimally invasive gynecologic surgery

by Margaret Mueller, MD
Associate Professor,Obstetrics&Gynecology

How can we get patients recovered sooner?

Minimally invasivegynecologic surgery continues to evolve, offering new opportunities to patients who have avoided surgery due to concerns related to lifestyle disruptions. In 2018 Intuitive Surgical introduced the Da Vinci Single Port robotic platform, ***transforming the landscape for both urologic and urogynecologic surgical procedure***s. This technology allows an entire pelvic floor reconstructive surgical procedure to be performed through a 1 cm umbilical incision. Under Dr. Mueller's leadership, the urogynecologic surgeons at UChicago Medicine pioneered single port robotic hysterectomies and reconstructive procedures in 2021 and have seen advantages important to patients, including less pain, and high same day surgery discharge translating to ***faster recovery***. With less pain, and faster recovery, patients are able to resume their activity sooner than with conventional surgery, if they are allowed to.

What about postoperative activity?

Gynecologic surgeons have traditionally restricted thephysical activity of their postoperative patients, related to concerns of potential increases in intra-abdominal pressure leading to adverse outcomes. However, even routine, necessary, every day activities can lead to increases in intra-abdominal pressure. For example, Weir et al. demonstrated that going from sitting to standing, from a standard-height chair (a common activity) results in a similar increase in intra-abdominal pressure as lifting a 13 lb. load from the floor.1 Many fields are reevaluating postoperative activity restrictions, including general and orthopedic surgery. Orthopedic literature suggests that early resumption of activity actually promotes restoration of normal function.2 Extrapolating this theory to pelvic surgery, it is possible that pelvic loading (through activity) may help promote tissue remodeling, thereby strengthening muscle and tissue, ultimately leading to improved surgical outcomes.

Right to left: Drs. Christina Lewicky-Gaupp, Sarah Collins, Kimberly Kenton, and Margaret Mueller in front of the innovative surgical platform.

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Minimally invasive surgical approaches, ERAS, opioid sparing analgesia, and same-day discharge have helped revolutionize gynecologic and POP surgical care, eliminating several barriers to surgery.2, 3, 4,5 To continue this trajectory, guidelines based on evidence and innovations specifically in postoperative care and restrictions are needed. The UCM urogynecologists are among the early adopters to avoid postoperative activity restriction, study the effects of postoperative physical activity and disseminate information to gynecologic surgeons that could potentially have a profound impact on their patient's experiences.

Why does postoperative activity matter?

With increased emphasis on minimally invasive surgical approaches, ERAS, pre-habilitation, and same day surgery, some of the most common questions gynecologic surgeons hear from patients center around resumption of exercise, physical activity and returning to work. Given the lack of clear evidenced-based recommendations, most surgeons rely upon anecdotal instructions passed down from prior surgeons. A recent survey study demonstrated that most gynecologic surgeons placed some restrictions on how much patients could lift after surgery, and 60% recommended that women continue lifting restrictions for at least 6 weeks following a minimally invasive laparoscopic hysterectomy.6 Half of participants recommended a 10-pound weight restriction; for perspective a gallon of milk weighs nearly 10 pounds (8.6 pounds) as do many women's bags. This contrasts with many public health websites that answer common recovery questions for women after a hysterectomy. For example, the Illinois department of public health notes that you can go back to normal activity within 1-2 weeks following a vaginal or laparoscopic hysterectomy.7 It also obviates many of the benefits of minimally invasive surgery including earlier return to work and normal activities. Our lack of consensus regarding postoperative physical activity is a potential source of confusion and deterrent for women contemplating a quality of life enhancing procedure.

Furthermore, this lack of consensus regarding postoperative instruction calls into question the utility or necessity of postoperative activity restrictions. Some investigators have even demonstrated that activity does not differ in patients who are instructed to restrict activity versus those who are allowed to liberally resume activity.8 After randomizing women to liberal versus restricted activity after surgery for POP, Arunachalam et al 16 demonstrated that both groups of women achieved similar activity levels based on accelerometer data and self-reported measures of activity.

Contemporary outcomes data on activity restrictions:

The urogynecologic surgeons at UCM were the first to perform a groundbreaking study evaluating the effect of postoperative activity restriction on patient satisfaction in women undergoing urogynecologic surgery.9 In this multicenter, double-masked study, we randomized women to either liberal or restricted postoperative activity after prolapse repair. Those randomized to liberal activities were instructed to resume activities liberally (including but not limited to running, lifting, strenuous activity, and sit-ups) whereas those in the restricted activities group were instructed to restrict lifting and physical activities. At 3-months, women randomized to liberal activities were similarly satisfied but reported fewer prolapse and urinary symptoms postoperatively compared to those randomized to restricted activities, and short-term anatomic outcomes were not different.9 The study also rigorously evaluated the relationship between pelvic floor symptoms, health-related quality of life outcomes and sexual function. Using Patient-Reported Outcomes Measurement Information System (PROMIS) 19 measures, we found that pelvic floor symptom severity correlated with all domains of health-related quality of life outcomes.10 We also assessed longer-term pelvic floor outcomes, such as prolapse recurrence, in a planned secondary analysis at one-year with an 81% retention rate.11 There were no significant differences in functional or anatomic outcomes in women instructed to resume activity liberally versus those instructed to restrict activity one year following surgery. O'Shea et al reported similar short-term findings in a randomized noninferiority trial of standard versus expedited postoperative activity restrictions after prolapse surgery.12 Three months after surgery, the authors found that expedited activity after POP surgery resulted in noninferior anatomic and symptomatic POP outcomes and concluded that it was reasonable to counsel patients to resume physical activity after POP surgery.

Conclusion:

While innovations in surgical modalities including the use of a single port robotic platform and ERAS have drastically improved recovery in women undergoing gynecologic and urogynecologic surgery, the effect of physical activity restrictions on recovery has been overlooked. Currently there is little evidence to support benefit of physical activity restrictions after gynecologic surgery. As surgeons, supporting optimal approaches to recovery while minimizing harm is an important goal and warrants additional research. To accomplish this, UCM urogynecologic surgeons are leading several national research protocols to study the effect postoperative activity has on recovery.

Our urogynecologists at the University of Chicago Medicine. *Rightto left:Drs. Sarah Collins, Margaret Mueller, Sandra Valaitis, Kimberly Kenton, Christina Lewicky-Gaupp, Shilpa Iyer and Juraj Letko.*

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Meet Our Specialists

Kimberly S. Kenton, MD, MS
Professor of Obstetrics and Gynecology
Chief, Section of Urogynecology and Reconstructive Pelvic Surgery
Vice Chair of Research, Obstetrics and Gynecology

Margaret Mueller, MD
Associate Professorof Obstetrics and Gynecology
Section of Urogynecoloy and Reconstructive Pelvic Surgery

Sarah Collins, MD, FACOG, FACS
Associate ProfessorofObstetrics and Gynecology
Section of Urogynecoloy and Reconstructive Pelvic Surgery

Christina Lewicky-Gaupp, MD
Professor ofObstetricsand Gynecology
Program Director, Urogynecology and Reconstructive Pelvic Surgery Fellowship

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