



A Quarterly Newsletter from The National Association For Continence

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## Robotic Surgery for Pelvic Organ Prolapse



**Anthony G. Visco, MD**

*Associate Professor and Chief  
Division of Urogynecology and Reconstructive Pelvic Surgery  
Director of Gynecologic Robotic Surgery  
Vice Chair for Gynecologic Surgical Services  
Department of Obstetrics and Gynecology  
Duke University Medical Center*

More than 200,000 women undergo surgery for pelvic organ prolapse each year.<sup>1</sup> Over the past century, life expectancy has increased substantially to 80 years for a female born in 2004.

As the size of the aging population grows, it is expected that we will see similar increases in the prevalence of conditions associated with age, such as pelvic organ prolapse. Uterine prolapse occurs when the uterus loses its support and comes at least partially out of the vagina. Women who have previously had a hysterectomy may experience vaginal vault prolapse, which occurs when the vagina loses its support and comes out beyond the vaginal opening.

There are several surgical management options for uterine and vaginal vault prolapse including vaginal and abdominal surgery. Vaginal surgical options include sacrospinous ligament fixation, uterosacral ligament suspension, and vaginally placed mesh procedures. These vaginal treatment options have different effectiveness levels and are associated with different risks and/or complications.

Abdominal sacrocolpopexy, a highly effective treatment for uterine and vaginal vault prolapse, was developed at Duke University by Drs. Addison, Timmons and colleagues nearly a half-century ago. Sacrocolpopexy involves using mesh to suspend the vagina to the sacrum. This surgery was traditionally performed through an abdominal incision, and considered by many to be the gold standard procedure for vaginal vault prolapse with success rates of 93–99%. Over the last several years, minimally invasive options have been developed in an effort to decrease post-op discomfort and recovery time. Overall, a traditional laparoscopic approach has not been widely adopted due to the complexity of the procedure. Recently, robotically-assisted laparoscopic sacrocolpopexy techniques have been developed that may allow women to have a gold-standard reconstructive option with a minimally invasive approach. Robotic sacrocolpopexy, similar to open sacrocolpopexy, involves the use of mesh to support the vagina. However, this mesh is placed abdominally with a robotic technique and not vaginally.

Several mesh kits have been marketed over the last few years using mesh placed in the vagina, through a vaginal incision and supporting the tissues to various pelvic ligaments. Mesh augmented vaginal prolapse repairs offer the potential for longer term durability and efficacy as compared to non-mesh augmented repairs, however, there are also potential disadvantages to using this material. In October 2008, the FDA issued a Public Health Notification regarding serious complications associated with transvaginal placement of surgical mesh in repair of pelvic organ prolapse and stress urinary incontinence. The warnings, specific to the use of mesh for prolapse repair, included informing “patients about the potential for serious complications and their effect on quality of life, including pain during sexual intercourse, scarring, and narrowing of the vaginal wall.” More information can be found at <http://www.fda.gov/cdrh/safety/02008-surgicalmesh.html>.

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Robotic sacrocolpopexy is a new and exciting option for patients as it combines the advantages of open sacrocolpopexy (precise dissection and suturing) with the decreased morbidity of laparoscopy (shorter hospital stay, decreased blood loss). We published our data comparing 73 patients that underwent robotic sacrocolpopexy to 05 patients who underwent open sacrocolpopexy and found significantly less blood loss and significantly shorter hospital stay with robotic sacrocolpopexy.<sup>2</sup> The operative times were longer but the patients had similar short-term outcomes in regards to correction of their pelvic organ prolapse.

Given each patient's unique clinical situation, additional procedures such as a sling for urinary incontinence can easily be performed at the same setting. The typical patient has an overnight stay in our 23-hour observation unit and requires minimal oral medication.

A robotic approach combined with the tried-and-true abdominal sacrocolpopexy takes full advantage of all that robotic surgery offers. The robotic instruments afford precise control, three-dimensional vision, muscle tremor reduction, and improved ergonomics for the surgeon. These factors make managing the mesh and suturing – as well as dissecting in the surgical spaces – much easier than with a standard laparoscopic approach.

Overall, sacrocolpopexy performed with the da Vinci<sup>®</sup> Surgical System – the only FDA-approved robotic device for use in gynecologic surgery – offers better access to the pelvis compared to both the open and laparoscopic approaches. I have found I can replicate what I do in an open approach – but with less postoperative pain, less blood loss and scarring, and faster recovery. Robotic sacrocolpopexy can also be combined with some types of hysterectomy for uterine prolapse. In experienced hands, the procedure can be offered to just about any patient to whom one would recommend a sacrocolpopexy.

Surgical control with precise positioning of the mesh and suturing are significant advantages to the robotic approach. Based on our initial experience, my colleagues and I would conclude that robotic-assisted sacrocolpopexy offers a reproducible, minimally invasive technique for vaginal vault and uterine prolapse with similar short-term durability. ❖

1. Boyles SH, Weber AM, Meyn L. Procedures for pelvic organ prolapse in the United States, 979-997. *Am J Obstet Gynecol* 2003;88:08-5.
2. Geller EJ, Siddiqui NY, Wu JM, Visco AG. Short-term outcomes of robotic sacrocolpopexy compared with abdominal sacrocolpopexy. *Obstet Gynecol* 2008;2:20-6.