The Rapid Evolution of Vaginal Mesh Delivery Systems for the Correction of Pelvic Organ Prolapse, Part II: Clinical Recommendations

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Note: This article is a continuation from the April issue in which 7 vaginal mesh systems were described.

Mesh systems were developed to create effective and highly reproducible vaginal prolapse procedures. However, the paucity of long-term clinical data regarding these systems places the burden of choosing whether to use them squarely on the surgeon-gatekeeper.

The old adage "never be the first or last one in the community to adopt a new technology" aptly applies to mesh systems. The adage is based on the drawbacks of each approach: early adopters will need to work out any problems with a new technology, and late adopters will have missed an opportunity to provide optimal patient treatment.

Early adopters provide a valuable service to the medical community, however, by sorting out the utility of new devices and making recommendations about their nuances. These recommendations gradually become adopted as common practice when using the new technology.

This article will discuss some of the surgical nuances developed by high-volume users of mesh delivery systems. Obviously, none of these tricks and tips can replace careful adherence to surgical principles and thorough knowledge of pelvic anatomy. Before using any vaginal mesh delivery system, surgeons should obtain specialized training for each particular device, and fully inform the patient of the special risks inherent in the procedure.

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FOCUSPOINT

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CHOOSING A SYSTEM

First, choose a particular system and match it to the right patient. Since the anterior compartment tends to be the most common site of failure after prolapse repair, it would make sense for the surgeon to choose an anterior mesh system as the first kit they use. Mesh delivery systems are associated with shorter operative times and less blood loss than traditional repairs, so higher-risk surgical candidates will benefit from mitigation of overall risk from the shorter, less-invasive mesh procedure. For example, many surgeons are now treating stage 3 or greater uterine prolapse using these systems without performing concomitant hysterectomy. In many cases, doing so can provide patients with excellent quality of life without subjecting them to a long surgical operation.

Of course, a patient's postoperative quality of life is relative to their preoperative lifestyle.

FOCUSPOINT

When using delivery systems that incorporate mesh arms, the surgeon should take great care to ensure none of the arms pull tight.

Therefore, in order to decrease the risk of recurrent prolapse or mesh-related pain, it may be prudent to initially reserve placement of these mesh delivery systems in patients who do not participate in high levels of physical or sexual activity. Use of a vaginal mesh delivery system can transform an otherwise long and complicated operation into a relatively short and simple one while providing excellent results.

TECHNIQUE, PLACEMENT, AND EVALUATION

Most high-volume users of vaginal mesh delivery systems employ a "thick" vaginal dissection technique that is optimally initiated through liberal hydrodissection. These techniques are best taught in a cadaveric lab and/or in the operating room setting. It is important to remember that incorporating the "thin" vaginal dissection technique traditionally used during anterior and posterior repairs seems to predispose the development of mesh erosions. Using a either a 22-gauge spinal needle or a standard epidural needle, the full thickness of the vaginal epithelium can be easily hydrodissected off underlying layers, thus developing the "true" vesicovaginal or rectovaginal spaces. Placing the mesh into these spaces seems to mitigate both epithelial and visceral erosions.

Another important concept is that the mesh should not be placed under significant tension. It should lie as loose as possible within the vaginal compartment without being allowed to bunch up. When using delivery systems that incorporate mesh arms, the surgeon should take great care to ensure none of the arms pull tight. If the arms are tight enough to pluck like a guitar string, they should be loosened.

Only a minimum of vaginal epithelium should be trimmed at the end of the surgery. In fact, many cases are best completed with no trimming at all. Most mesh erosions tend to occur at the vaginal suture lines; therefore, placing these suture lines under extra tension through trimming can predispose to erosion. Many experts believe use of intravaginal estrogen therapy both pre- and postoperatively will further cut down mesh erosion rates.

Patients should be evaluated postoperatively at regular intervals for at least 1 year to ascertain that neither prolapse recurrence nor mesh-related complications have developed. As the surgeon becomes more comfortable with the functionality of each type of mesh system, patients with a greater degree of prolapse can be chosen as appropriate surgical candidates.

CONCLUSION

As more is learned about these procedures, the products are sure to continually improve. Each year, more and more women with prolapse are requesting surgery to improve their quality of life. How long should we wait before incorporating a seemingly beneficial tool for these patients? Certainly both factions of gynecologic surgeons—the mesh users and mesh avoiders—would agree that industry should make every effort to set up rigorous clinical studies of each new product even after they have been approved through the FDA's 510(k) system.

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