MASTER CLASS

Rectocele Repair Evolves

BY CHARLES E. MILLER, M.D.

Unfortunately, as an avid endoscopic surgeon and infertility specialist, I must admit that the most exciting arena in gynecologic surgery at present belongs to the urogynecologist. Until now, there has been little innovation within the subspecialty, even though it was well known that long-term results were compromised by weakened tissue and external factors. However, on the heels of our increased knowledge of the anatomy of the pelvic floor and the pathophysiology of incontinence and prolapse, techniques are being introduced that attempt to increase efficiency and thus decrease recurrence and the necessity of a second surgery.

I have asked Dr. Neeraj Kohli, chief of the urogynecology division at Brigham and Women's Hospital, Boston, to discuss the nuances of the use of mesh or grafts to augment rectocele repairs. A urogynecologist in the department of obstetrics, gynecology, and reproductive biology at Harvard Medical School. Dr. Kohli will make the case for the use of mesh or grafts in selected patients who in the past would have been treated via site-specific defect repair. I am certain that you will find Dr. Kohli's Master Class in gynecologic surgery to be both intriguing and thought provoking.

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Using Mesh or Grafts to Augment Repair

The use of mesh or grafts to augment rectocele repair is still in its early stages. Although it's not yet possible to encourage widespread adoption or make universal recommendations, we can say with certainty that mesh or grafts should be used in carefully selected patients, and that the art of rectocele repair today involves making a clinical judgment about when to augment traditional techniques.

NEERAJ KOHLI, M.D.

The concept of using grafts or mesh for rectocele repair—as well as for other hernias of pelvic organ support—makes sense. Their use can restore correct anatomical support by recreating and/or augmenting the fascial layer, enabling us to provide additional stability to traditional repairs of the posterior vaginal wall that too often may incorporate weak tissue.

Our general surgery colleagues have reduced their failure rate for hernia treatment by almost 50% by augmenting their procedures with mesh or grafts.

It was reported almost a decade ago that women have an 11% risk of needing surgery for prolapse or urinary incontinence by age 80 years—and that at least one-third will need a second surgery. Over the last 5 years, new surgical procedures for incontinence have raised our incontinence success rates to nearly 90%. Our success rate for prolapse using traditional techniques, meanwhile, remains in the 50%-70% range.

We're looking for a better mousetrap, and mesh or graft augmentation is likely to be it. Certainly, it is worth considering.

The Shortcomings of Our Traditions

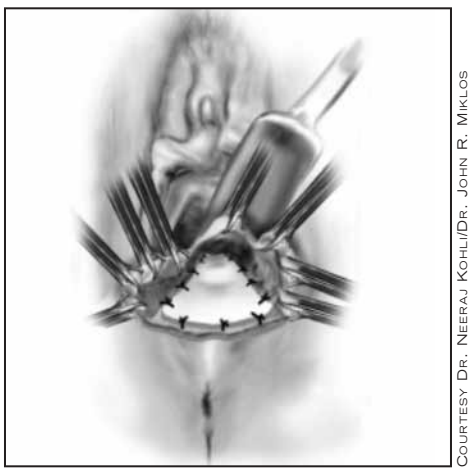
Our underlying concepts of prolapse have changed. We used to think of prolapse strictly as the result of weakness in the vaginal wall and subsequent stretching. Our traditional repair technique was, simply put, to tighten the weakened tissue and narrow the vaginal wall.

The next stage in our thinking was that we were actually dealing with hernias—that is, with discrete breaks (site-specific defects) in the tissue. Our practice then progressed to opening up the vaginal mucosa, finding the defect, and closing it. This was the origin of the anterior paravaginal repair for cystocele and the posterior site-specific repair for rectocele.

There are pros and cons to both traditional ways of thinking. For instance, finding the defect and closing it are theoretically fine, but our assumption here is that the intact tissue is strong. That's not always the case. Sometimes it's hard to find the defect. And sometimes we may even create it.

Often when we're looking for better tissue to use for a central repair, we gravitate toward more lateral tissue and end up bringing too much tissue to the midline, causing dyspareunia. Or we move up in our search for tissue—that is, into the enterocele tissue—and we do our best with tissue that often is of poor quality. This may well result in a recurrence, which we often attribute to "poor protoplasm" or failure of the patient to adhere to our postoperative instructions.

And in either case, with traditional plication techniques or traditional site-specific techniques, we usually are not altering the patient's underlying risk factors for prolapse or for recurrence after surgery. Constipation; obesity; nerve or muscle damage; and occupational risk factors, such as heavy lifting are among the many remaining factors that, without strong tissue and stability, can put our repair in jeopardy.



COURTESY DR. NEERAJ KOHLI/DR. JOHN R. MIKLOS

Mesh or graft placement for rectocele/enterocele repair is shown.

Our most recent evolution in thinking, therefore, has been to look at our general surgeon colleagues' use of mesh and grafts to more successfully treat hernias, and to think that maybe we can do the same thing.

Choosing Donor or Synthetic Grafts

The use of grafts or mesh alleviates many of the challenges we have faced with our traditional techniques. One real benefit, for instance, is that we can extend mesh up into the enterocele and create strong tissue in a place where we previously would have worked with weak peritoneum.

A variety of graft and mesh products is available to the clinician. (See box.) The question of which materials are better is still much debated among physicians, however. The advantage of donor grafts, of course, is that they are biologic, which should significantly alleviate or even eliminate problems of erosion and rejection. The downside is that the materials are expensive and can contract over time. We also do not yet fully understand the in vivo response to these grafts. In some cases, the body may chew up the graft; in other cases, the graft may be encapsulated through an inflammatory reaction.

The advantage of synthetic meshes is that they are readily available, have more consistent material strength, and are permanent. There also is a great variety of materials to choose from—something that we should certainly view as a benefit and take advantage of. Synthetic meshes come in different weaves, with various degrees of pliability, strength, softness, and thickness. Such variables are important to consider, because the mesh we use in the vagina must be both strong enough to maintain the integrity of our repairs and flexible enough to accommodate sexual function.

The downside of synthetic meshes relates to its permanence. The mesh will be with our patient for the rest of her life, during which time rejection, infection, and especially erosion can occur. Whereas dyspareunia and failure are the major complications of traditional repairs, erosion—or exposure, as it is more frequently called today—is the primary complication associated with the use of mesh.

Our Judgment Call

At this time, we do not have enough data on rectocele repair with grafts or mesh to either uniformly recommend or uniformly reject this new type of repair. We need more evidence-based information to document its long-term efficacy.

However, these augmented procedures are now established in many settings—with observed short-term success—and I believe they should be considered for our more challenging cases.

The key to doing good rectocele repair, I believe, is first being able to identify the anatomy, and second, being able to make the clinical judgment about when and when not to use a mesh or graft. In my practice, for instance, we generally use mesh in patients with recurrences, in patients with very advanced prolapse and poor-quality tissue, and in women with a high risk for recurrence, such as those with chronic constipation, obesity, or jobs that require heavy lifting.

With mesh augmentation, we've taken our success rate to 85%-90% for all vaginal wall repairs, and to 90% for rectocele repair. The erosion rate for rectocele repair probably is about 10%. Most erosions can be managed conservatively, and few require reoperation if identified early. The

Continued on following page

Graft/Mesh Materials Available for Pelvic Prolapse Repair

Biologic Grafts

Trade Name	Material	Company
InteXen	Porcine dermis	American Medical Systems Inc.
Repliform Matrix	Human dermis	Boston Scientific Corp.
Xenform Matrix	Bovine dermis	Boston Scientific Corp.
Pelvicol/Pelvisoft	Porcine dermis	C.R. Bard Inc./Bard Nordic
Surgisis	Porcine collagen	Cook Inc.
Axis Tutoplast	Human dermis	Mentor Corp.
Suspend Tutoplast	Human fascia lata	Mentor Corp.

Synthetic Meshes

Trade Name	Material	Company
IntePro	Polypropylene	American Medical Systems Inc.
Polyform	Polypropylene	Boston Scientific Corp.
Pelvitex	Polypropylene/ porcine collagen	C.R. Bard Inc./Bard Nordic
Gynemesh	Polypropylene	Gynecare
Novasilk	Polypropylene	Mentor Corp.

ELSEVIER GLOBAL MEDICAL NEWS

Continued from previous page

dyspareunia rate is harder to get a handle on and is something we are still evaluating.

Newer Techniques, Getting Started

Some experienced physicians are now using new needle-guided mesh techniques. These procedures are quick, and some physicians value the fact that the materials come in convenient kits.

In these new techniques, needles are inserted through the transobturator approach and brought out near the ischial spine. The needles are then attached to the arms of the mesh, and the mesh is pulled through. The main disadvantage to this technique lies in the blind passage of needles through fairly long distances and critical areas where the potential for complications could include rectal injury, nerve injury, and bleeding. Another disadvantage is that the kits are relatively expensive.

I would rather attach mesh to a suture that I can see, although—in the right hands—needle-guided mesh techniques are probably safe and may result in better mesh application. Certainly you would want substantive experience and a sound knowledge of pelvic anatomy before proceeding.

Needle-guided techniques aside, the skills needed for mesh and graft augmentation of rectocele repair are logical extensions of the ob.gyn's current skill set. It is helpful, though, to revisit the anatomy in a cadaver lab, to talk with physicians who have had experience with grafts and mesh, and even to arrange preceptorships or visit the operating room to see the techniques performed. Then, as with many surgical procedures, success will depend on your skill, comfort level, and clinical judgment. ■

Tips for Success

The use of mesh or grafts is not without risk, and part of our technique and surgical process should involve a thorough effort to minimize risk. Here are some tips for avoiding complications:

▶ **Cut the mesh or graft to an appropriate size and do not lay it in too tightly.** Remember that mesh and grafts can contract. Adjust the material loosely and remember that its role is to prevent descent of the prolapse, not to elevate or support the tissue. A little movement of the mesh is preferred and will minimize the risk of erosion and dyspareunia.

▶ **Make sure the mesh or graft lies flat, and always consider apical support.** Folds in the mesh will increase the risk of erosion. The risk of complications will also increase if too few or too many sutures are used to secure the mesh. The Capio ligature device (Boston Scientific Corp.) is a good tool for placing apical sutures without extensive dissection, but it is just one of a variety of tools you can use.

▶ **Ensure good hemostasis.** I recommend packing the vagina for 24 hours after a mesh procedure to reduce the risk of hematoma and subsequent abscess or erosion, as well as to help the vaginal epithelium bond to the underlying mesh. We use a standardized vaginal packing with estrogen cream.

▶ **Use adequate estrogenation.** Both pre- and postoperative vaginal estrogen is recommended. We usually begin vaginal estrogen cream at the 2-week postoperative visit and continue it for at least 3 months.

When you start your dissection, keep it thick. The strength of the repair is dependent on the mesh, not on the patient's own tissue, so it is better to keep a thicker vaginal skin. As a result, you will reduce the risk of erosion.