Sacropinous Vaginal Vault Suspension: Variations on a Theme

Vaginal vault prolapse is one of the most frequently occurring types of pelvic organ prolapse, and with our aging population, it is more adroit with vaginal surgery, sacropinous vaginal vault suspension also offers a safe and effective remedy for this disorder. As a review, the ischial spine is located approximately halfway between the pubic bones and the sacrum. Posterior to the spine is the sacropinous ligament with the overlying coccygeus muscle. The sacropinous ligament marks the posterior limit of the pelvic diaphragm.

Because he is a nationally recognized expert in the vaginal approach to pelvic floor prolapse, I have asked Dr. Peter Sand to discuss vaginal vault suspension, the evolution of the procedure, and the prevailing literature that compares this technique with abdominal sacrocolpopexy.

Dr. Sand is currently a professor of obgyn at Northwestern University, Chicago, and the director of urogynecology and reconstructive pelvic surgery at Evanston (Ill.) Northwestern Healthcare. Dr. Sand is a prolific researcher and much-sought-after lecturer. As this year’s scientific program chairman of the American Association of Gynecologic Laparoscopists’ Global Congress of Minimally Invasive Gynecology, I invited Dr. Sand to present a surgical tutorial on the vaginal approach to prolapse. Just as the participants found his discussion interesting and informative, I am sure our readers will feel the same.

BY PETER SAND, M.D.

Sacrospinous vaginal vault suspension also offers a vaginal vault incision, perforation of the rectal pillars, and blunt dissection of the pararectal space anterior to the ischial spine. A short Breisky-Navratil retractor can then be placed at the 10 o’clock position, resting on the ischial spine. By maintaining your right index finger against the ischial spine, you can then insert a long Breisky-Navratil retractor directly opposite the short retractor over the ventral surface of your finger, against the ischial spine with its posterior edge just anterior to the coccygeus muscle.

Sweeping this long retractor counter-clockwise immediately across the coccygeus muscle, keeping its posterior blade in contact with the muscle throughout, will mobilize the rectal and pararectal fat medially and expose the coccygeus muscle and sacropinous ligament. This retractor should be held at approximately the 2 o’clock position, creating a 60- to 90-degree angle with the other Breisky-Navratil retractor. (The exact angle will depend on the angle of the pubic arch.)

At this point, the right-angle Haney retractor can be placed at approximately the 7 o’clock position over the coccygeus muscle and then, posterior traction, withdrawn distally until it pops down in front of the coccygeus muscle, exposing this muscle and sacropinous ligament.

A Deschamps ligature carrier then can be inserted through the middle of the coccygeus muscle and rotated clockwise to expose its tip around the sacropinous ligament. The initial bite should be placed 1 cm medial to the ischial spine to avoid the pudendal complex. A second suture can then be placed 1-2 cm away from the first suture in the same fashion. Care needs to be taken to identify the posterior end of the suture and differentiate it from the anterior end. This may be accomplished through the use of a straight hemostat on one end and the placement of a curved hemostat across both ends of the suture.

(When we perform the surgery, we use a straight hemostat to identify the posterior end of suture on the patient’s right side, or the lateral suture, and a straight Kocher clamp to identify the posterior end on the patient’s left side.)

The Breisky-Navratil retractors can then be slowly withdrawn one at a time to allow for observation of the entire para-vaginal space and assessment for any bleeders, which can be easily grasped and electrocoagulated or sutured.

The suture can then be placed on the undersurface of the apex of the vagina by use of a free Mayo needle. The anterior arm of the lateral suture can be placed approximately 1-2 cm away from the right apex of the vagina in a figure-eight fashion, and this one arm of the suture can be tied to itself with a loose surgeon’s knot.

The same process can be followed with the left or medial anterior arm of the second sacropinous suture, 1-2 cm away from the left apex of the vagina, and tied down in the same fashion. Care needs to be taken on the patient’s left side to place...
Continued from previous page

the suture approximately 0.5 cm further away from the apical edge of the vagina, as this is a smaller distance to reach the sacrospinous ligament. Now the sutures can be retracted anteriorly, and a rectocoe repair can be performed as needed. After successful completion of such repairs, excess vaginal epithelium and smooth muscle can be resected as indicated. The posterior vaginal wall is closed with either interrupted sutures or a running, locking suture approximately halfway down the posterior vaginal wall. At this point, the sacrospinous sutures should be tied down, with the suture on the patient’s right lateral side tied down first. The posterior arm of the sacrospinous suture should be taken in the nondominant hand, and slow traction should be applied while the suture is held in place. Once the suture is guided back into position in the pelvis, toward the right sacrospinous ligament. Once the excess slack is taken up by mobilization of this suture, the suture may be tied down, with care taken to leave no gap between the vaginal apex and the sacrospinous ligament. This suture is then held while the second suture is mobilized in the same fashion and then tied down similarly. Retraction of the undersurface of the closed posterior vaginal wall will allow for visualization of the sacrospinous sutures, which can be cut approximately 1 cm above the knot. The posterior vaginal wall may be closed, and perineorrhaphy performed as indicated.

The choice of sutures is left to the individual operator. Although Dr. Nichols originally described using delayed-absorbable sutures, later in his career he changed to using one Gore-Tex suture and one polyglycolic acid suture. He informed me that he uses this suture when the permanent suture would offer longer-lasting strength, whereas the absorbable suture would be more inflammatory response and possibly offer longer-lasting strength, whereas the permanent suture would

Anterior sacrospinous suspension is an approach that we have pursued and described in order to address possible shortcomings or limitations of the conventional pelvic organ prolapse repair techniques. The sacrospinous ligament is a key anatomical reconstruction of the vaginal vault, and may avoid deviation of the vagina to the right or the left side. Instead of placing two sutures on one sacrospinous ligament approach—chiefly to place the suture on the right sacrospinous ligament at its midpoint and on the left sacrospinous ligament at its midpoint. These sutures are attatched to the right and left apex of the vagina, respectively. This approach, the thinking goes, allows for a wider width of the vaginal apex in the posthysterectomy patient, as well as go good lateral support. Often, a bilateral sacrospinous ligament suspension may be augmented by bilateral paravaginal defect repairs performed through the vagina, with or without the use of an adjuvant graft. The dissection for placement of these sutures is identical to that for the anterior approach, except that it also can be performed on the patient’s left side, with care taken to mobilize the rectum medially (which is often a more challenging task on the patient’s left side). The choice of suture material to the sacrospinous ligament has not, however, been compared directly to unilateral sacrospinous vaginal vault suspension. Sometimes, when scarring exists in the midline of the vagina, the surgeon may prefer vaginal hysterectomy, or when an enterocoe repair has been performed, the incision is made in the midline of the vaginal vault, creating a somewhat Y-shaped vagina. In a report published in 1997, Dr. J.F. Pohl and Dr. J.L. Prattarelli concluded that bilateral suspension is feasible in many patients, but that it requires significant intraoperative judgment. It is feasible to the vault suspension without tension (Am. J. Obstet. Gynecol. 1997;177:1356-61).

In our practice, we tend to prefer right-sided vaginal vault suspensions in which we utilize either an anterior approach or a posterior approach, with a left-sided ilioinguinal approach. The authors described the Schutt device, which also delivers a suture from anterior to posterior in a defined arc to improve the safety and speed of the proce-