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Title (type in
CAPITAL
LETTERS)TRANSVAGINAL CULDOSUSPENSION FOLLOWING
HYSTERECTOMY AND ENTEROCELE REPAIR

Aims of Study: In the normal female, the proximal vagina draws its support from the sacrouterine and cardinal ligaments, while the levator ani pulls the distal vagina anteriorly with respect to the proximal vagina. Thus the proximal vagina lies flat over a strong backboard provided by the rectum, prerectal fascia and levator plate, and points toward the S3 and S4 vertebrae. During coughing and straining, contraction of this levator sling accentuates this vaginal angulation, allowing the displacement of intra-abdominal pressure to be directed toward the posterior vaginal wall and levator plate, rather than pushing the vaginal vault out of the introitus.

Following hysterectomy and enterocele repair, prevention of recurrent prolapse depends on providing adequate support to the vaginal cuff, obliterating the cul de sac, and repairing any pelvic floor relaxation. Formation of an enterocele may follow a surgically induced change in vaginal axis, often combined with significant pelvic floor relaxation. With separation of the sacrouterine and cardinal ligaments, and with the proximal vagina displaced anteriorly, the cul de sac becomes exposed to increases in intra-abdominal pressures, thereby predisposing to enterocele formation. Furthermore with a more vertical proximal vagina, intra-abdominal forces will no longer flatten out the proximal vagina against the rectum and levator plate, but will instead tend to evert the vagina, pushing the vault out toward the introitus.

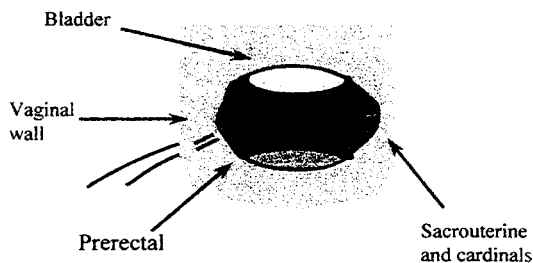
Methods: 104 consecutive patients (mean age 71 years, range 48-90) were treated over a 29 month period by transvaginal culdosuspension in conjunction with enterocele repair (64 patients), vaginal hysterectomy (24 patients), or both procedures (16 patients). After reduction of the herniated bowel and/or removal of the uterus and cervix, culdosuspension is performed by passing a no.1 synthetic absorbable suture through the vaginal wall high on the lateral fornix. The suture is passed through the ipsilateral sacro-uterine cardinal complex, across the midline incorporating the prerectal fascia and contralateral sacro-uterine cardinal complex, and finally reversed across the midline and out the vaginal wall 1 cm distal to the entry site. A similar contralateral suture is placed. The sutures are left untied. The cul-de-sac is obliterated with 2 purse-string sutures, one of which incorporates a Dexon mesh used to reduce the small bowel into the peritoneal cavity. The purse-string sutures and then the previously placed

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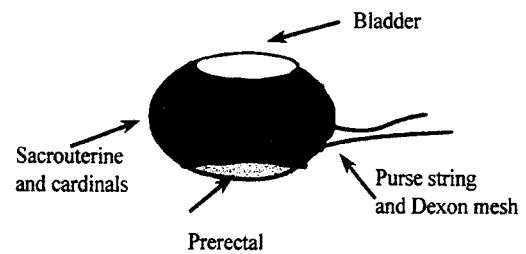
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culdosuspension sutures are tied, pulling the vaginal cuff cephalad and posterior, restoring the normal horizontal vaginal axis and depth.



Culdosuspension Sutures



Pursestring Sutures

Results: 100 patients were available for follow-up (mean 17.3 months, range 6.5-34). Concomitant pelvic prolapse was repaired in 82 patients, including bladder neck suspension in 50, cystocele repair in 45, and rectocele repair in 76. Recurrence of enterocele or vaginal vault prolapse occurred in 4 patients. Complications included ileus in 2, vaginal cuff infection in 2, ureteral obstruction in 1, and prolonged dyspareunia in 1 patient. There were no instances of vaginal foreshortening, urinary retention, vaginal skin necrosis, bladder perforation, or recto-vaginal fistula.

Conclusions: By obliterating the cul de sac, providing vaginal cuff support from below, and repairing any concomitant pelvic floor relaxation, transvaginal culdosuspension provides a safe, effective and durable treatment for repairing an enterocele and for preventing recurrent vaginal prolapse following transvaginal hysterectomy. Compared to transabdominal culposacropexy and transvaginal sacrospinous fixation, this technique has a very low complication rate, and recurrence rate. This novel technique can be performed on an outpatient basis if hysterectomy is not necessary. The restoration of normal vaginal depth and axis leaves a well-supported and sexually functional vagina.