

MODIFIED BURCH PROCEDURE (TANAGHO)

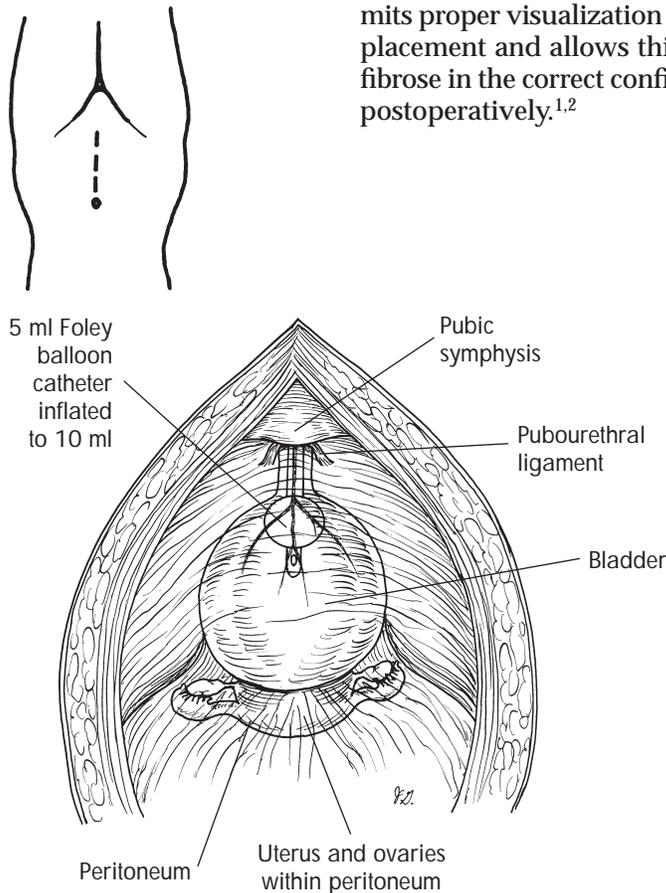
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The clear advantage of the modified Burch procedure is that while correcting the stress incontinence, the surgeon is simultaneously correcting a medium-sized cystocele. In addition, it is unusual to overcorrect the defect using the modified approach.¹ The time required for this procedure and the number of days of hospitalization are similar to those for the Raz procedure.

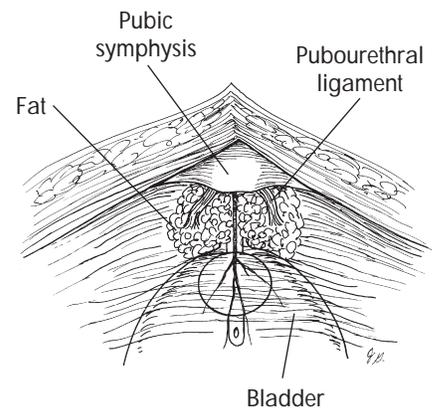
EXPOSURE

FIG. 16-1. A straight midline incision from the pubis toward the umbilicus provides the best exposure of the pubourethral ligaments, endopelvic fascia adjacent to the proximal urethra, and bladder neck.

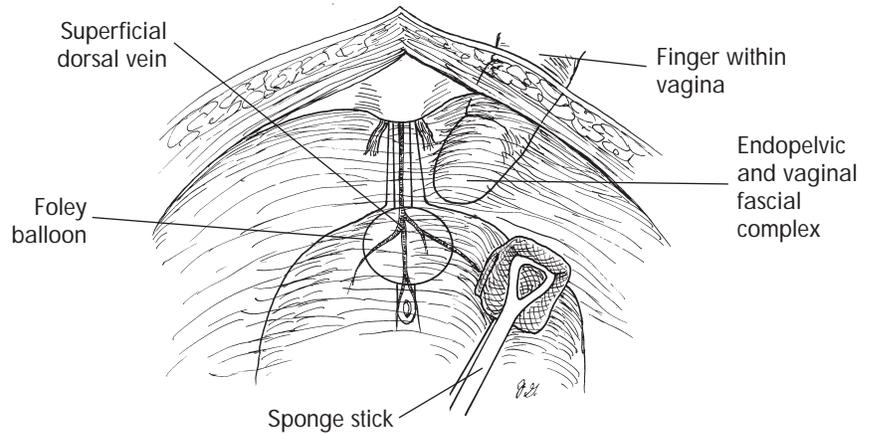
FIG. 16-2. After a Balfour retractor is placed and the retropubic space is exposed, the periurethral fat around the pubourethral ligaments and endopelvic fascia should be removed. Defatting this area permits proper visualization for stitch placement and allows this area to fibrose in the correct configuration postoperatively.^{1,2}



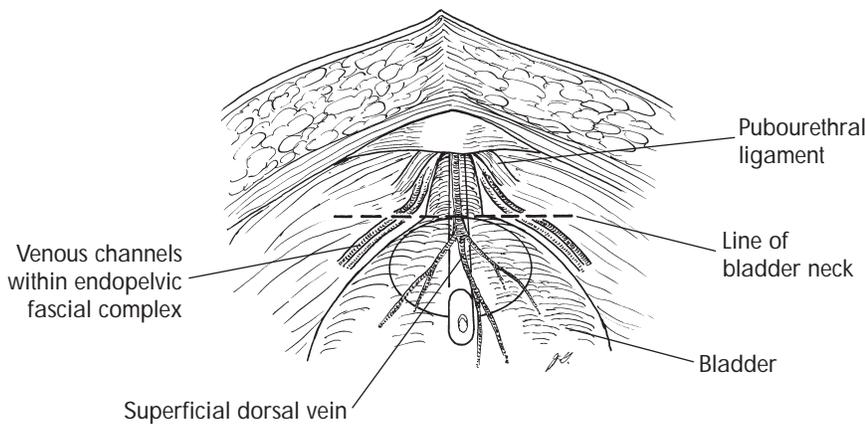
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16-2



16-3



16-4

BLADDER NECK STITCH PLACEMENT

FIG. 16-3. A 5 ml Foley balloon catheter (instead of a 30 ml balloon catheter) is inflated to 10 ml. An assistant maintains gentle traction so that the catheter stays at the bladder neck and does not migrate cephalad in the bladder.

With the left index finger in the vagina, the surgeon can lift up and palpate the urethra medially and the Foley balloon superiorly, thus locating the bladder neck.

The assistant must apply proper traction with the sponge stick, depressing the bladder medially and cephalad, to obtain maximum exposure of the endopelvic and vaginal fascial complex for stitch placement.

FIG. 16-4. The venous channels adjacent to the urethra and the bladder neck are potential bleed-

ing sites. Therefore the three stitches should be placed *lateral* to this area in the endopelvic and vaginal fascial complex. Each stitch is tied and left on hemostats to arrest any venous bleeding.

FIG. 16-5. We prefer to use a No. 3 Mayo needle that has been bent into a U shape and threaded with 1-0 Vicryl suture for placing these stitches. This modified needle offers better maneuverability in a small pelvic space and allows deep but not wide bites to be taken into the pelvic fascia.

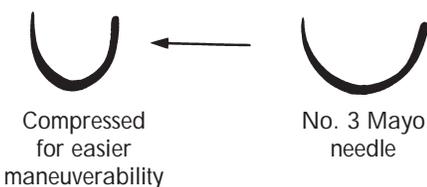
FIGS. 16-6 AND 16-7. When driving the U-shaped Mayo needle into the pelvic fascia, the surgeon can determine the depth of each bite by the feel with the left index finger. The bites exclude the outer vaginal epithelial layer.

FIG. 16-8. The stitches are placed 1 to 1.5 cm lateral to the bladder neck. The first stitch is aimed at the imaginary horizontal line at the bladder neck.

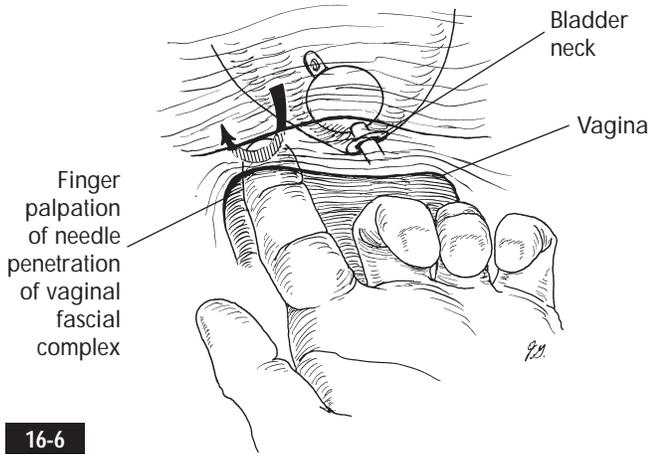
The second stitch is placed 0.5 cm distal to the first stitch. The surgeon must use judgment with regard to how far distally to place the second stitch. If it is *too distal*, the patient may have an obstructive problem postoperatively.

The third stitch is placed 1.5 cm proximal to the second. This stitch, more than the other two, is responsible for cystocele correction.

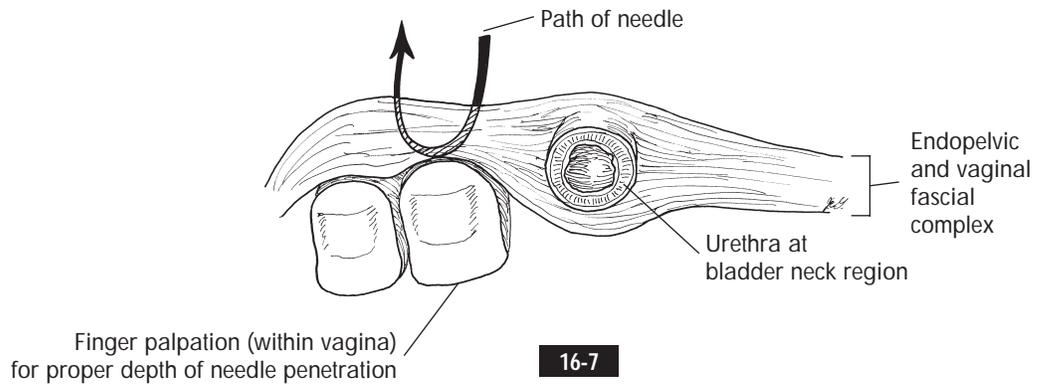
FIG. 16-9. All three stitches are tied and clamped with hemostats.



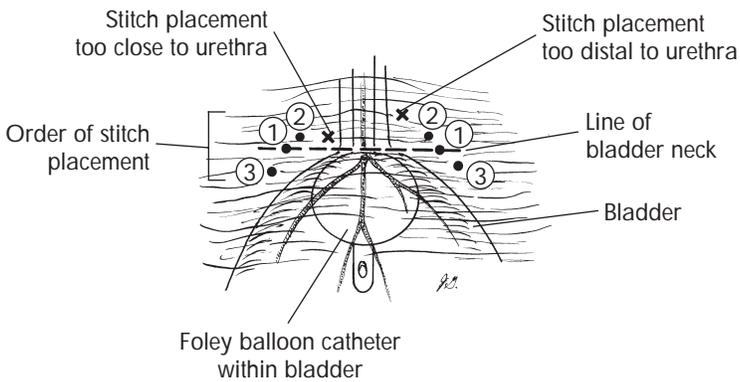
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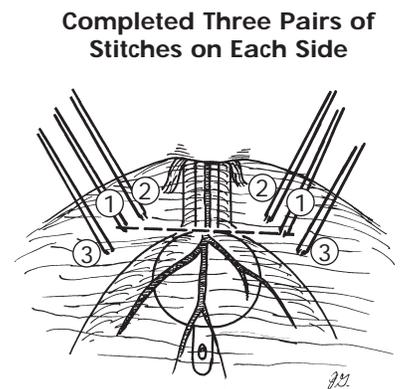
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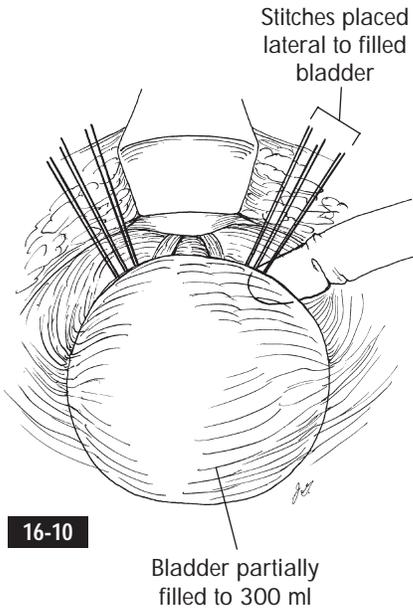
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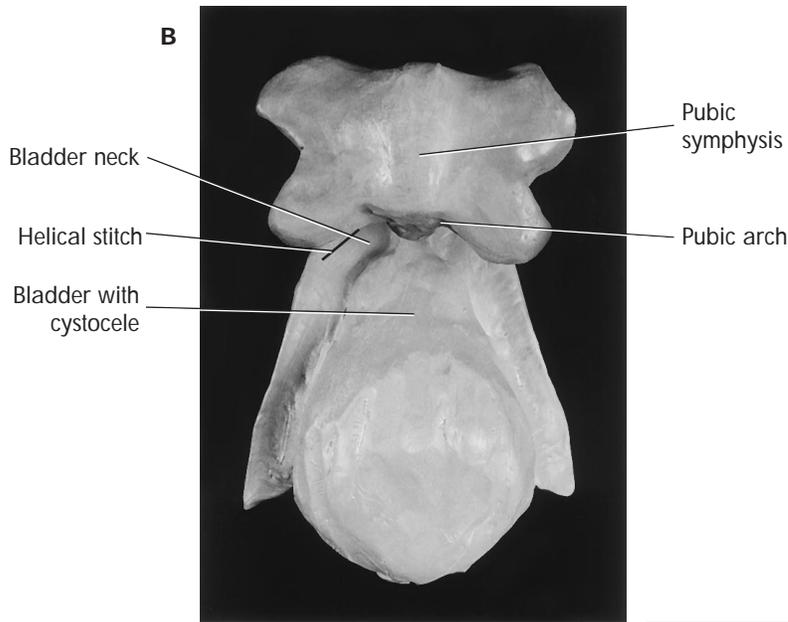
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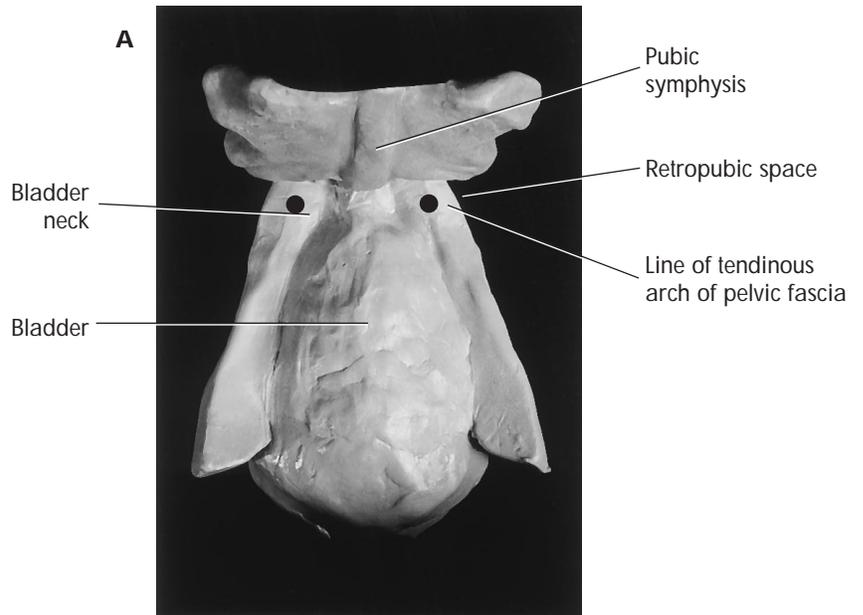
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**Raz Procedure
(View from Vagina)**



**Modified Burch Procedure
(Top View)**



Lateral View

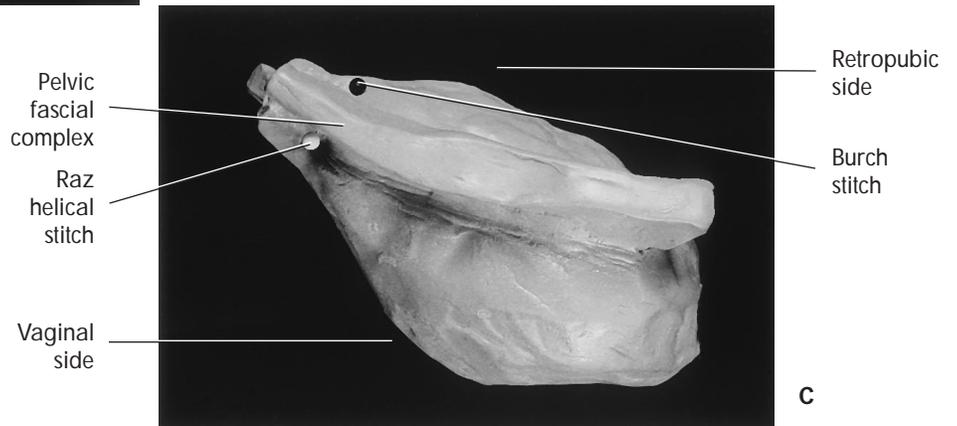
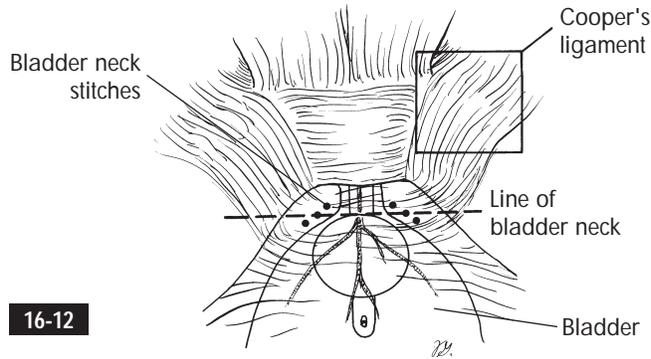


FIG. 16-10. After the bladder is filled with 300 ml of saline solution, the surgeon palpates the stitches to ensure that they are lateral to the bladder neck. If unsure, the surgeon should perform cystoscopy to rule out vesical injury.

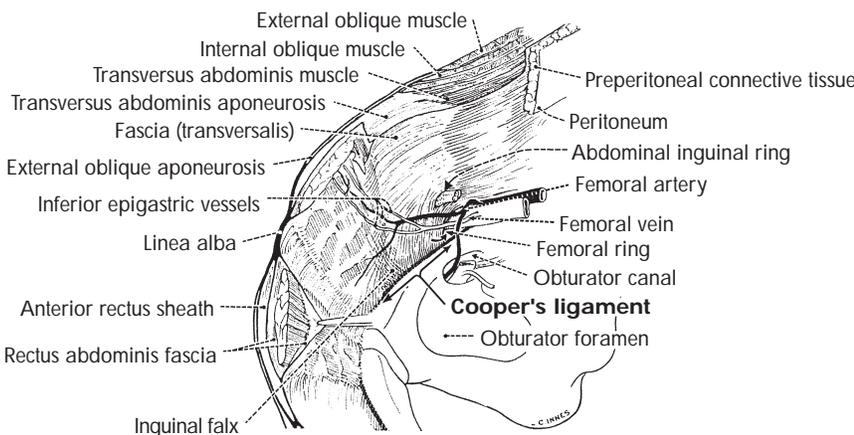
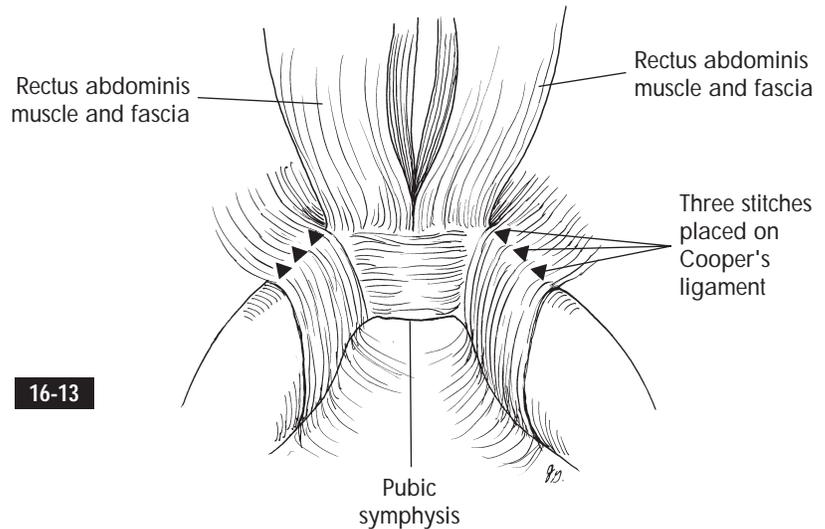
FIG. 16-11. When the modified Burch procedure (from the retro-pubic space) and the Raz procedure (from the vaginal space) are compared, stitch position is similar. Because the stitches are anchored to the more lateral Cooper's ligaments in the Burch procedure, medium-sized cystoceles are corrected in the repair.



COOPER'S LIGAMENT SUTURE PLACEMENT

FIGS. 16-12, 16-13, AND 16-14. The Cooper's ligament is a dense ligament lateral to the pubic insertion of the rectus abdominis muscle. The surgeon can clear this area of fatty tissues and define a fascial segment about 4 to 5 cm wide.

Retropubic View



McVay CB: *Davis-Christopher textbook of surgery*, ed 9, Philadelphia, 1968, WB Saunders.

FIG. 16-15. The surgeon must be aware that the femoral vein is located on the other side of the fascia. The femoral vein is closest at the lateral, not medial, portion of the ligament.^{1,3}

Small accessory venous structures lying on the Cooper's ligament can be pushed laterally for better exposure.

Three stitches are placed in this area about 1 cm apart, tied, and left on hemostats uncut. These three stitches should be aligned with the corresponding ipsilateral bladder neck stitches.

APPROXIMATION OF CORRESPONDING PAIRS OF STITCHES

FIG. 16-16. The three stitches at the bladder neck can be paired with and tied to the corresponding three on the ipsilateral Cooper's ligament.

The assistant places the fingers in the vagina and lifts the vaginal wall while the surgeon ties the three pairs of stitches on each side. When tying from the vaginal fascia to the Cooper's ligament, the surgeon ties the paired stitches tightly but *without* attempting to pull the two fascial layers to-

gether. With this modification, postoperative urinary retention is rare.¹

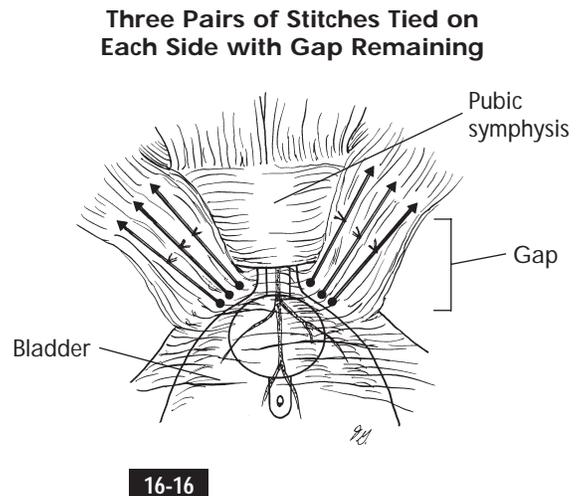
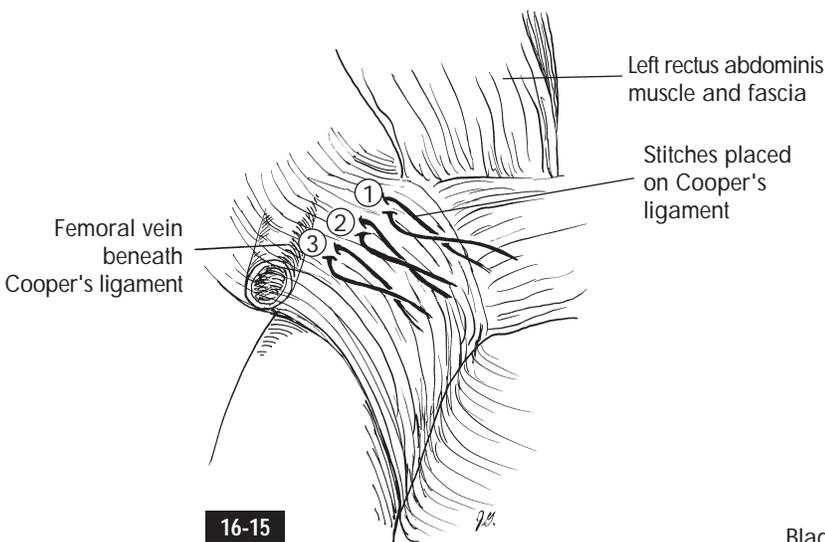
We tie the paired stitches together leaving a gap of about 3 to 5 cm between the elevated vaginal fascia and the Cooper's ligament.

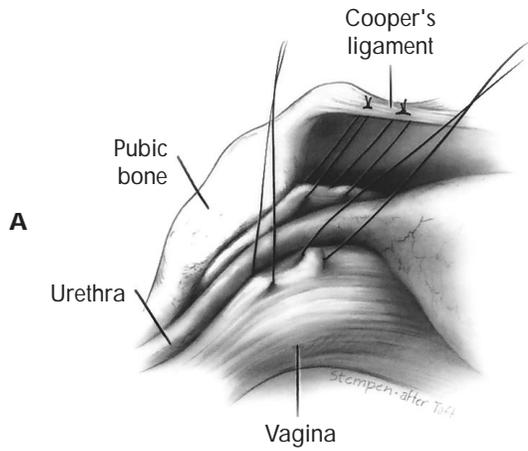
Scarring of the region takes place before the Vicryl stitches degenerate.

The three stitches on each side of the bladder neck region are pulled further laterally by tying them to the Cooper's ligament. This lateral pull rarely causes urethral compression, and it easily corrects medium-sized cystoceles.

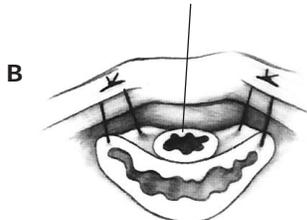
FIG. 16-17. The modified Burch procedure described by Tanagho¹ uses one stitch on each side. Note the placement of the stitches without approximation of the endopelvic and vaginal fascial complex to the Cooper's ligament.

FIGS. 16-18 AND 16-19. With the original Burch procedure, the endopelvic and vaginal fascial complex is approximated to the Cooper's ligament.⁴ However, it is not necessary to go to such extremes to achieve continence. In addition, it is nearly impossible to approximate the two fascial layers together, no matter how large the cystocele.

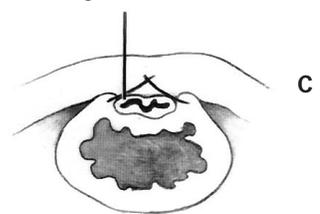
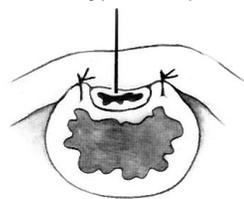




Modified Burch procedure—urethra free in spacious retropubic space



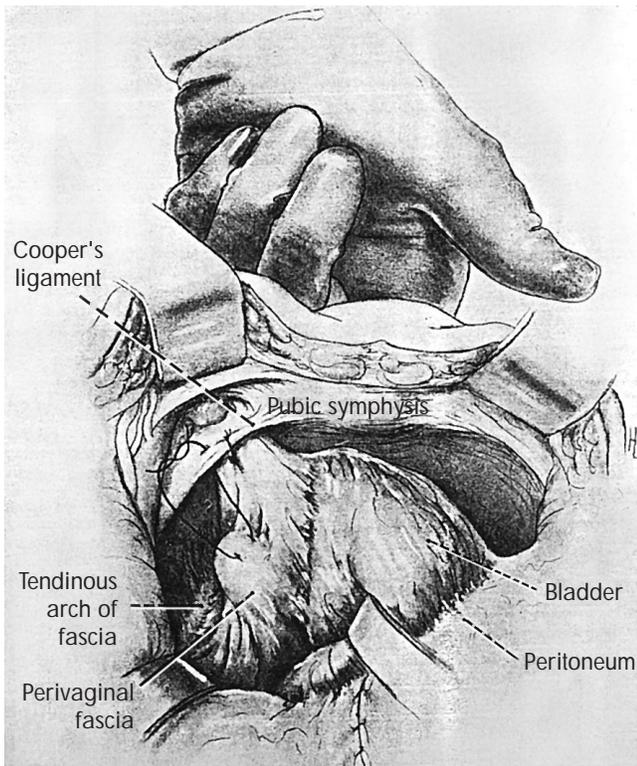
Other types of repairs—compressed and strangulated urethra



From Tanagho EA: Colpocystourethropey, *AUA Update Series*, lesson 27, vol XII, Houston, 1993, American Urological Association, Inc.

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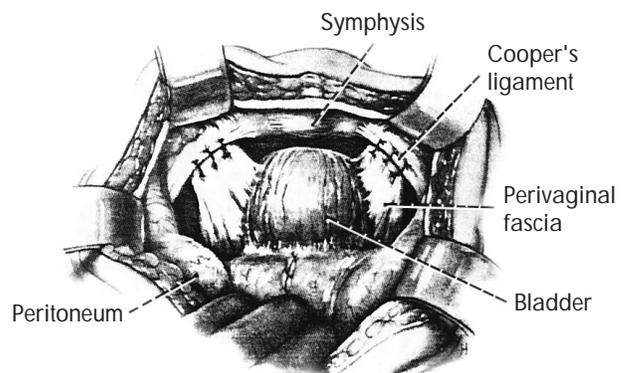
Classic Burch Procedure



From Burch JC: *Am J Obstet Gynecol* 100:764, 1968.

16-18

Classic Burch Procedure



From Burch JC: *Am J Obstet Gynecol* 100:764, 1968.

16-19

KEY POINTS

- A 5 ml Foley balloon catheter is inserted and inflated to 10 ml.
- With an index finger, the surgeon palpates the urethra and the Foley balloon catheter and thus locates the bladder neck.
- Three stitches are placed in the endopelvic and vaginal fascial complex 1 to 1.5 cm lateral to the imaginary horizontal line at the bladder neck.
- Proper exposure of the Cooper's ligament is obtained and precautions are followed to avoid injuring the femoral vein.
- When the Cooper's ligament and the endopelvic and vaginal fascia complex are approximated, the six pairs of stitches are tied without any attempt to pull the vaginal fascia next to the Cooper's ligament. The three pairs of stitches are tied on each side, leaving a 3 to 5 cm suture gap after all pairs are tied.

POTENTIAL PROBLEMS

- *Bleeding at site of endopelvic and vaginal fascial stitches:* Tie the sutures → later, suspension will arrest the bleeding
- *Stitch is too distal to bladder neck region:* Remove and place another stitch
- *Accidental placement of stitches through vaginal epithelium:* Stitches will pull in, and the vaginal epithelium will overgrow the sutures
- *Frozen endopelvic and vaginal fasciae from previous surgery:* Consider a sling procedure
- *Femoral vein puncture:* Manually compress the Cooper's ligament → start over at a different, more medial area of the Cooper's ligament
- *Cooper's ligament is scarred, weak, or destroyed from previous surgery:* Consider use of anterior rectus fascia for the anchoring stitch

REFERENCES

- 1 Tanagho EA: Colpocystourethropexy: the way we do it, *J Urol* 116:751, 1976.
- 2 Bergman A, Koonings PP, Ballard CA: Primary stress urinary incontinence and pelvic relaxation: prospective randomized comparison of three different operations. *Am J Obstet Gynecol* 161(1):97, 1989.
- 3 Edwards EA, Malone PD, MacArthur JD: *Operative anatomy of abdomen and pelvis*, Philadelphia, 1975, Lea & Febiger, pp 37-44.
- 4 Burch JC: Cooper's ligament urethrovesical suspension for stress incontinence, *Am J Obstet Gynecol* 100:764, 1968.

SUGGESTED READINGS

- Marshall VF, Marchetti A, Krantz K: Correction of stress incontinence by simple vesicourethral suspension, *Surg Gynecol Obstet* 88:508, 1949.
- Mostwin JL: Current concepts of female pelvic anatomy and physiology, *Urol Clin North Am* 18(2):175, 1991.
- Rutledge RH: Cooper's ligament repair: A 25-year experience with a single technique for all groin hernias in adults. *Surgery* 103(1):1, 1988.
- Rutledge RH: Cooper's ligament repair for adult groin hernias, *Surgery* 87(6):601, 1980.
- Wheless CR: *Atlas of pelvis surgery*, ed 2, Philadelphia, 1988, Lea & Febiger.