

# Modified Burch Colposuspension

## ➤ **Operation Concept:**

Elevation of the vaginal fascia on both sides lateral to the cystourethral junction to suspend the bladder neck. Contrary to the original method of Burch the vaginal fascia will not be completely attached to the Lig. Iliopectinum (=Cooper ligament), you pull the knot only until you create a kind of hammock under the bladder neck. Use only **non**-resorbable sutures. If there is also a prolapse the operative treatment of the incontinence should be part of the operation plan. The open colposuspension is the most effective operative incontinence therapy. This is valid for the primary situation as well as the relapse situation.

## ➤ **Indication:**

A clinical and urodynamically verified stress incontinence with normal urethral tone.

- Relevant patient desire for an operation
- No success with conservative treatment such as pelvic floor exercises and local oestrogen therapy

## ➤ **Contraindication:**

- Usual contraindications for an operative treatment
- Distinctive urge or minor stress incontinence with no psychological pressure
- Hypotonic urethra

## ➤ **Pre-operative Information for the patient:**

- Long-term success subjective 78%, objective 85%
- Risk of urethra- or bladder lesion especially in previously operated women
- Bleeding and infections of the wound especially in the Spaze of Retzius (spatium retropubicum)
- Periostitis of the upper pubic bone
- Pain in the upper pubic bone
- Postoperative bladder drainage with a suprapubic bladder catheter (not obligatory)
- Postoperative urinary dysfunction (self-catheterisation can be necessary)  
Temporary bladder emptying disorder 12,5%, persistent in 3,5%
- Newly developed urge incontinence in 6% of the patients or aggravation of a previously existing urge incontinence
- Increased risk for a later prolapse (mostly rectocele)
- Postoperative no sexual intercourse or heavy weights for four weeks
- Stool regulation with Lactulose or Movicol (No straining)

## ➤ **Operation planning/ selective history:**

- Incontinence history:
  - Birth and the process of birth
  - Previous gynaecological operations
  - Current medication
  - Signs of an hormonal deficit
  - Micturition and drinking behaviour
  - Situations when incontinence occurs

- Is the incontinence getting better without treatment (A patient with prolapse may also experience overflow incontinence, in which urethral "kinking" caused by the prolapse results in incomplete emptying and quicker filling of the bladder)
- Previous treatment
- Individual psychological pressure
- Micturition history
- Micturition frequency (Loss of control when desire to urinate, stress incontinence, nocturia)
- Amount of urine loss ( drops, splashes, stream), during micturition( often, little or greater amounts)
- Urinary stream: targeted, stopping possible
- Micturition occasionally not possible or just with reposition of the prolapse (urethral kinking)

### ➤ **Clinics/diagnosis**

- Gynaecological examination with vaginal-ultrasound, evaluation of the prolapse
- Urogynecological examination (urine analysis, residual urine measurement (pathological = 15% of the capacity or > 50ml)
- Vesicourethral morphology (sonographic measurement): A posterior urethrovesical angle >130° while pressing is a sign for a vertical prolapse with damaged urethral fixation
- Urodynamic measurement:
- Detrusor contractions (partly with loss of urine) and a bladder capacity <300ml is a sign of an urge incontinence
- High closing pressure in resting position is a good prognosis for the operation
- Urethra closing pressure e.g.. whilst coughing <20cm H<sub>2</sub>O is a sign for a stress incontinence
- Urethrocystoscopy (especially urge incontinence)
- Preoperative treatment with local oestrogen for four weeks, such as Ovestin Ovula 1x1 (atrophic vaginal epithelium)
- Perioperative single-shot-antibiotics

## **Operation technique**

Preparation:

After identifying the Space of Retzius (Spatium retropubicum) by blunt dissection, the operator elevates the cystourethral junction with the left index finger. The junction is identified by the catheter balloon.

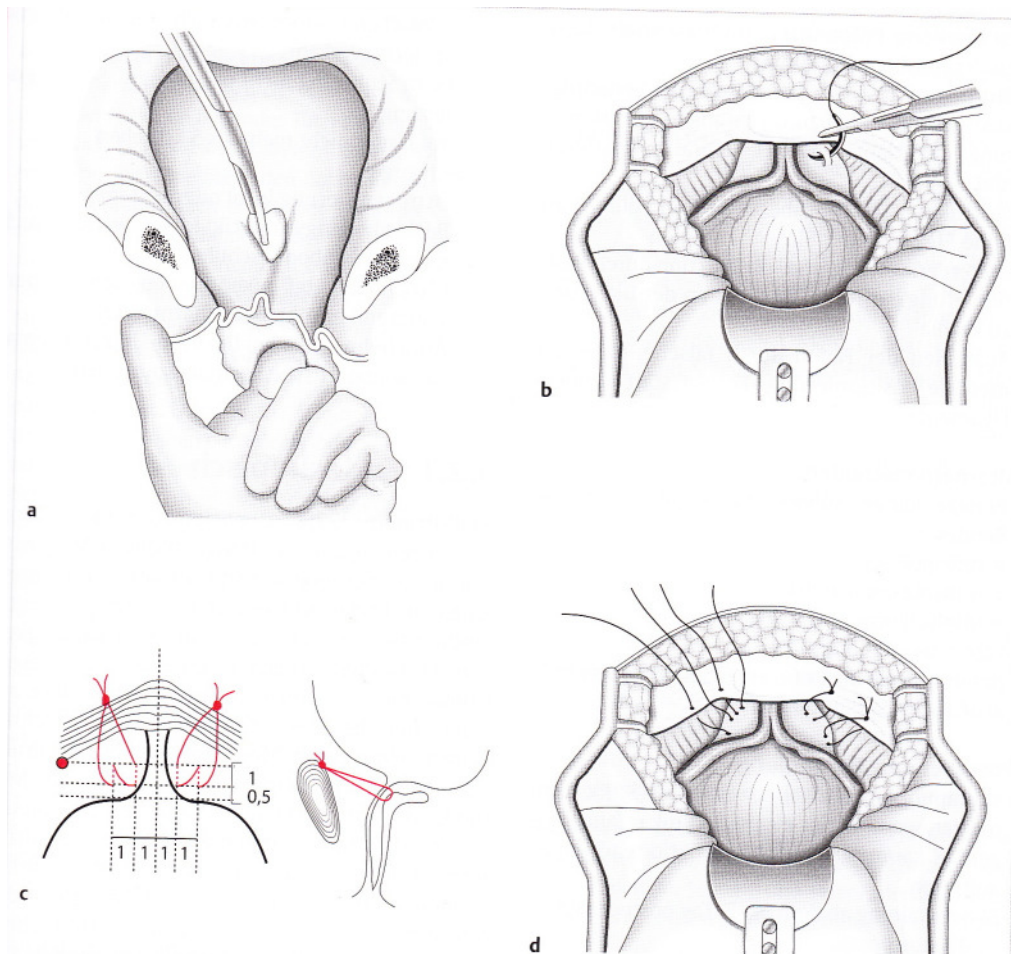
Placement of the sutures on the vaginal fascia:

Elevate the vagina on the right lateral to the cystourethral junction and dissect the vaginal fascia. (Note: bleeding of the paraurethral venous plexus especially when sutures are too close to the urethra). Secure two non-resorbable-threads staggered like roof-tiles in the vaginal fascia over the fingertip. Do not penetrate the vaginal wall. Pull on the thread to check the stability. Same procedure on the left. Remove the finger out of the vagina and change gloves.

Fixation on the Cooper ligament

Find the Lig. Iliopectineum in the area of the insertion of the inguinal ligament. A more lateral fixation has a high risk for vascular injury and has no better therapeutic effect. The threads are stitched through the Cooper ligament and

knotted. The knotting should be carried out under digital control from vaginal to achieve a slight elevation of the cystourethral junction. Overcorrecting has no therapeutic effect and leads to obstructive micturition dysfunction and/or urge incontinence.



- Common mistakes and risks:
  - Too intensive dissection at the bladder neck (Urge incontinence)
  - Bleeding from the paraurethral venous plexus especially when suturing too close to the urethra (dissect and stitch more laterally)
  - Obstructive micturition disorder after too high elevation of the bladder neck
  - Dislocation or obstruction of the ureter after suturing too close to the bladder or too cranially
  - Threads pull out after false or too medial positioning (periosteum instead of Cooper ligament)
- Alternatives:
  - Insertion of an suburethral, alloplastic sling (retropubic, transobturator, Mini-Arc)
  - Fascia lata sling
  - Paraurethral injection of a “bulking agent”
  - Artificial sphincter
- Postoperative treatment:

- Suprapubic bladder catheter (SPC)
- Training of the bladder 3-5. postoperative day
- Clamp the suprapubic catheter, micturition every 2-3 hours, residual urine measurement in the catheter
- Removal of the SPC if residual urine < 100ml
- Bladder emptying disorder
- Diclofenac 2x100mg supp. For local antiphlogistic therapy
- $\alpha$ -receptor-blockade leads to atony of the nonstriated muscles of the bladder neck
  - Dibenzyran 10-60mg/d in creeping increase in the dosage
  - Tamsulosin 0,4mg/d in the morning
- Cholinergics such as Myocholine 25mg 3+2/d (increased muscle tone of the detrusor)
- Micturition in relaxed atmosphere (warm hip-bath)
- No lifting of heavy weights (not more than 5kg) and no sexual intercourse
- Don't strain during defecation
- Aftercare:
- Local or systemic oestrogen
- Pelvic floor exercises
- Myochoilne or operative revision if high residual urine
- Anticholinergics if De-novo-Urge incontinence occurs (ultrasound control of residual urine)

## **Burch. Laparotomy**

- **Operation concept:**
  - Colposuspension with classic access via suprasymphysic abdominal incision.
- **Positioning of patient and cover:**
  - Positioning of the patient in lithotomy position (dorsosacral position). Desinfection of the genital area. With new instrumentarium the abdominal area for laparotomy is then disinfected. The coverage starts with two leg sacks and a caudal cross cloth, which shields the anal region. Then the legs are lowered and two side cloths are fixed over the thighs laterally of the Spina iliaca anterior superior. Above the costal arch, the cranial cloth is fixed. Emptying of the bladder with indwelling catheter, which is blocked with 20ml balloon for a better identification of the bladder neck. After changing gloves, a small cloth is fixed across the symphysis to cover the external genitals.
- **Operation technique:**
  - **Abdominal cross incision.** Cross incision laparotomy is performed in the usual way. In general, a cut length of 10cm is sufficient. The linea alba is divided down to the symphysis, the peritoneum stays closed.
  - **Presentation of the Space of Retzius. The Space of Retzius I prepared** bluntly with fingers or a swab until you see the symphysis, the Mm. obturatorii and the bladder neck (catheter balloon)
  - **Continuing of the operation (above). Digital control.** The rest of the procedure is described above in "modified Burch colposuspension". The surgeon or an experienced assistant takes care for the digital control of the correct elevation, while the other one knots. Bleeding should be stopped in any case and the Retzius space should be supplied with a Redon drainage, as hematomas can call the success of the entire operation in question.

- **Suprapubic indwelling catheter.** Create a suprapubic urinary drainage. Closure of the wound in a conventional manner.

➤ **Problems and solutions:**

- Bleeding from venous plexus especially while preparing the vaginal fascia.
  - Cautious attempt by electrocoagulation
  - Suturing with an atraumatic thread of thickness 2/0
  - Knot the fixation thread when bleeding is due to the puncture of the vaginal fascia

➤ **Common errors and risks:**

- Risk of bladder lesion in previously operated patients. If necessary the filling of the bladder with a blue colored solution is useful.
- Postoperative bleeding. Filling of the bladder with 200ml NaCl and pinching the catheter for two hours in the hope that the usually venous bleeding suspends. If necessary Re-laparotomy and stopping the wound from bleeding.