LAPAROSCOPIC BURCH COLPOSUSPANSION
PROCEDURE

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ABSTRACT
Using minimally invasive techniques in urogynecologic procedures have been on the increase. One of these procedures is Burch colposuspension which is used widely for stress urinary incontinence. Laparoscopic colposuspension procedure was described with tips and tricks of technique in this manuscript.

Key Words: Burch colposuspension, Stress urinary incontinence, Laparoscopy

INTRODUCTION
Urinary incontinence is a common problem among women and its incidence is 10-70% (1). One type of urinary incontinence is the stress urinary incontinence that is the involuntary leakage of the urine with coughing, sneezing and laughing (2). It results from urethral hypermobility and intrinsic sphincter dysfunction (3). Open Burch colposuspension procedure has been used for treatment of stress urinary incontinence due to comfortable results for a long time (4). First laparoscopic burch colposuspension procedure was described by Vancaill et al at 1991 (5). It is used with an increasing rate owing to advantage of minimally invasive procedures such as less postoperative pain, less postoperative hospital stay and less intraabdominal adhesion without any apparent compromise in short-term and long term outcomes (6).

PATIENT
A 51 year-old women who had suffered from stress urinary incontinence for 10 years and her complaint had increased last two years. She has had two vaginal deliveries and she is in perimenopause period. The patient was evaluated to determine the type of urinary incontinence by department of urogynecology. She described urinary incontinence after coughing and sneezing. No infection was diagnosed in patient’s urine culture. Stage I prolapse according to POP-Q system and paravaginal defect were diagnosed. Positive stress test and 75 degree Q type test were determined in urogynecologic examination. Urodynamic examination result was interpreted as type II stress urinary incontinence without internal sphincter deficiency. Laparoscopic Burch Colposuspension operation was decided for treatment.
SURGICAL PROCEDURE

Surgical procedure was performed under general anesthesia and at dorso-lithotomy position. A 16-Fr Foley catheter was inserted and catheter balloon was expanded with 10cc saline. Operation was performed intraperitoneally. Veress needle was introduced through umbilicus and CO2 insufflation was performed and pneumoperitoneum was established. Intraabdominal pressure was set at 13-15 mmHg. Then, 10 mm optic trocar was inserted through umbilicus and three 5 mm trocars were inserted into both lower abdominal quadrants and left para-umbilicus. Observation of pelvic and upper abdomen was done in terms of adhesions before surgery. After bladder was expanded with 300 cc saline, transverse peritoneal incision was performed by harmonic scalpel (Ethicon US, LLC) between two umbilical ligaments and 3 cm over vesico-peritoneal fold (Figure 1). Pre-vesical space was reached (retzius space). The peri-vesical and para-urethral fat tissues were dissected and cooper ligaments, pubic bone and bladder neck were revealed (Figure 2). Para vaginal tissues were elevated by assistants’ fingers which were put into the lateral vaginal fornix and uretra-vesical junction was noticed (Figure 3). First, paravaginal fascia was stitched with non-absorbable 2-0 polypropylene sutures (Ethicon US, LLC) and it was paid attention not to stitch vaginal mucosa. The first stitch is inserted at the level of the lower pole of the catheter balloon (Figure 4). Second, cooper ligament was stitched for two times in order to fix suture there (Figure 5). Last, suture was tied while trying not to elevate vagina too much in such a manner that tension free by laparoscopic intracorporal technique was achieved and overcorrection was avoided. The

Figure 1: Transverse peritoneal incision.
Figure 2: After dissection of the peri-vesical and para-urethral fat tissues.
Figure 3: Elevated paravaginal tissues and uretra-vesical junction.
Figure 4: Stitching of paravaginal fascia.
sutures were tied with minimal tension resulting in a 2- to 4-cm suture bridge between the vagina and iliopubic ligament. Another suture was placed on the same side, the nearest point on the ipsilateral iliopubic ligament performed with same steps (Figure 6). Also two permanent sutures was placed on other part of the pre-vesical space. Complete apposition of the vaginal fascia and the ligament was avoided. After close of the peritoneum cystoscopy was performed and no complication was observed and operation was finished (Figure 7). Estimated operation time was 90 minutes and amount of the bleeding was not taken account. The Foley catheter was removed 24 hr after the operation and the post-void residual urine volume was controlled and it was lower than 50 ml.

**TAKE HOME MESSAGES**

1. Laparoscopic Burch procedure is suitable for alternative option according to laparotomy method due to less incision scar, pain and hospital stay.

2. Effectiveness of laparoscopic Burch technique is comparable with laparotomy technique. Laparoscopic suture experience is crucial for performing this technique.

3. Laparoscopic magnification and comprising expansion by carbon dioxide gas provide view well.

4. The short-term and long-term laparoscopic burch colposuspension outcomes are comparable with the open technique.

**REFERENCES**


