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## Pelvic pain and recurrent urinary incontinence after laparoscopic colposuspension with the endo-stapler

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**Abstract** Laparoscopic colposuspension is one of many new operations for treating female urinary stress incontinence. With initially reported success rates similar to those of the traditional open procedure, it appears to combine the advantages of laparoscopy (such as minimal invasiveness and quicker return to normal activities) with the effectiveness of the standard procedure. Different methods and approaches are used, but endoscopic suture techniques remain difficult and time-consuming. The use of endostapling devices for fixation of alloplastic material has been a tempting alternative. We present a case during which laparoscopic colposuspension was performed using staples and mesh. Incontinence did not improve, and the patient suffered severe chronic pain for 18 months postoperatively. Removal of the alloplastic material and traditional abdominal resuspension led to complete cure.

**Keywords** Endoscopic colposuspension · Long-term outcome · Pelvic pain · Stress urinary incontinence

### Introduction

Abdominal colposuspension for treating urinary incontinence was first described by Marshall and Marchetti in 1949 [1]. Originally, sutures were placed between the bladder neck and the symphysis pubis. In subsequent modifications the fixation of the bladder neck has become more lateral, and the sutures are attached to Cooper's ligaments (Burch) or the obturator fascia (Cowan). These modifications have led to a decrease in complications such as urethral and bladder lesions, osteitis pubica, bleeding, and postoperative urge incontinence, and at the same time

to an increased success rate (95% compared with 78% [2, 3]). Endoscopic colposuspension techniques were introduced in the early 1990s [4]. Laparoscopic and "retziusoscopic" access routes have been compared, as well as different fixation techniques including fibrin sealant, stapler fixation, and conventional suture techniques with one or two sutures [5–8]. The long-term success of the laparoscopic bladder neck suspension remains under investigation [9].

We describe a complicated postoperative course in a patient who underwent the endoscopic approach using endostapling devices.

### Case report

A 48-year-old woman presented to our hospital with a 5-year history of urinary stress incontinence and an 18-month history of chronic pelvic pain and dyspareunia following endoscopic colposuspension. According to the operative report, she had had laparoscopic adhesiolysis, adnexectomy, and Burch colposuspension. The bladder neck had been fixed with two pieces of polypropylene mesh (each 2×0.5 in), which had been attached with metal clips to the Cooper's ligament and the vaginal fascia. The patient reported no improvement of her incontinence after the procedure. Prior to admission the patient had presented to various hospitals for severe and chronic pelvic pain. A previous diagnostic laparoscopy with biopsies from the pelvic and bladder peritoneum had revealed serositis granulomatosa.

The patient's past medical history included three vaginal deliveries, a vaginal hysterectomy for descensus, and two laparotomies for ovarian cysts. Preoperative urodynamic evaluation at our institution confirmed urinary stress incontinence grade I-II with no urge incontinence.

Laparotomy with revision of the cavum retzii was performed, including removal of nine metal clips (Figs. 1 and 2). The endoscopic colposuspension sutures at the time of our procedure appeared asymmetrically placed. On the right side, the metal clips and the prolene mesh were

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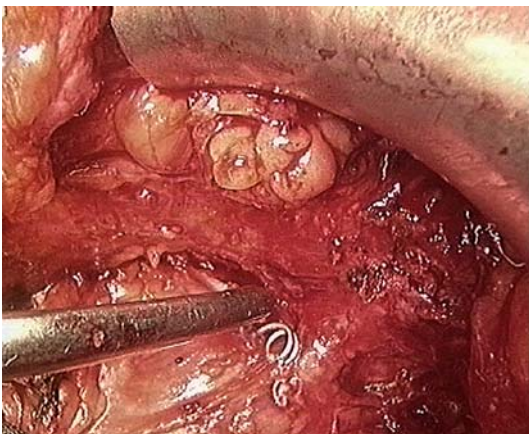
located 3 cm lateral to the bladder neck. Some of the clips had perforated the vesical fascia and the bladder wall. On the right side of the symphysis, only one of the clips was placed correctly through Cooper's ligament; the others were more caudal, some of them perforating the periost. On the left side, the prolene mesh was fixed more closely to the bladder neck but was still too lateral for effective incontinence treatment.

After removal of the fixation material, recolposuspension (fascia obturatoria) and bilateral paravaginal colpo- pexy were performed using permanent sutures. At the time of discharge, the patient showed no signs of stress urinary incontinence and had no pain.

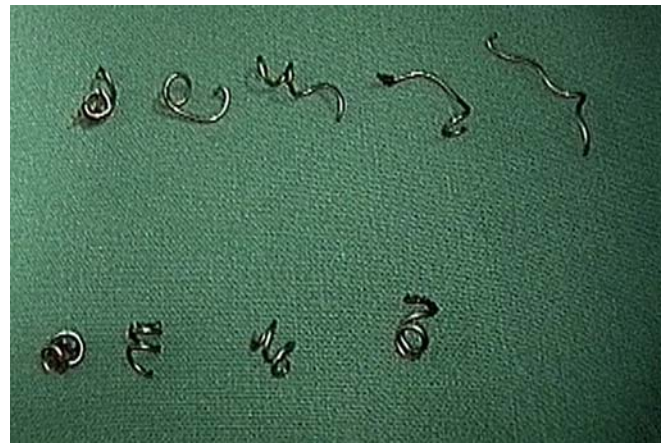
## Discussion

Initial data about endoscopic colposuspension were published in the early 1990s [4–7, 10, 11]. Different endoscopic approaches and fixation techniques were studied, and the results were compared with the established abdominal technique. Endoscopic suspension by means of alloplastic material with stapler fixation appeared to be as effective as endoscopic suture suspension in two smaller studies and was much easier to perform [6, 12]. Two single-bite sutures on each side compared with one double-bite suture resulted in significantly higher success rates [8]. Opinions about colposuspension with fibrin sealant remain controversial [6, 7]. Results of laparoscopically and retziusoscopically assisted techniques are comparable. The laparoscopic approach can create better visualization and more space. The extraperitoneal retziuscopy has the advantage of less need for visceral retraction and has often been considered the first choice in patients with intraperitoneal adhesive disease [6]. First follow-up studies showed comparable cure rates for endoscopic and conventional abdominal colposuspension methods [6, 13]. These studies were limited mostly by short follow-up periods (2–16 months).

Moehrer et al. reanalyzed the data from 487 patients (233 women receiving laparoscopic treatment and 254 women with open colposuspension) derived from five



**Fig. 1** Intraoperative situs: removal of a metal clip



**Fig. 2** Removed clips

studies in a recently published review article [14]. Four of the five trials reviewed data up to a maximum of 18 months. The outcome assessed by the women participating in the four studies (subjective impression of cure) seemed equally satisfactory for both procedures, whereas urodynamically assessed (objective) cure rates were significantly lower after laparoscopy. There was no significant difference between the two groups regarding postoperative urgency or voiding dysfunction. A trend toward higher complication rates, less postoperative pain, shorter hospital stay, and more rapid return to normal function was shown.

Long-term follow-up data are currently available only from one large study [15]. In this trial, the 5-year success rate was significantly poorer after laparoscopic colposuspension compared with open colposuspension. Although both procedure groups improved significantly after surgery, the number of incontinent episodes in the laparoscopic group was approaching preoperative levels after 5 years. This result has to be looked at cautiously because the surgeon in this study had only limited experience in laparoscopic colposuspension before starting the trial.

It is known that there is a definite, relatively steep learning curve associated with the laparoscopic colposuspension technique. Endoscopic suture techniques remain difficult, and the use of the endostapler for fixation of alloplastic material may seem to be an easy alternative. Long-term complications caused by the use of alloplastic material have not been studied so far. This technique should be reevaluated carefully. Both correct positioning of the sutures and the right degree of elevation are necessary for long-term continence. Neither of these factors was accomplished in our described case. Given the recent success of the equally minimally invasive tension-free vaginal tape procedures, some of the advantages of laparoscopic colposuspension appear less distinctive, particularly when alloplastic material is used. However, laparoscopic colposuspension using sutures remains a valid option for a selected subset of patients, including those who do not want alloplastic material placed in their body and still want to benefit from a minimally invasive technique. The optimal endoscopic approach should use the proven suture placements as described for the open procedure.

Both our case report as well as the existing literature raise some questions about endoscopic stapling techniques. Ease of technique does not always lead to the desired clinical results.

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