

# #360 “CENTRAL ROAD” IN THE URINARY BLADDER: THE ROAD TO INCONTINENCE WITH LAPAROSCOPIC SACROCOLPOPEXY



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## Introduction

This is a first report to present an unusual cystoscopic finding, named the “Central Road”, following laparoscopic sacrocolpopexy (LSC).

In 2011, the U.S. Food and Drug Administration (FDA) released a safety communication on mesh-related complications, and transvaginal mesh prolapse operation (TVM) decreased and was replaced by other procedures such as LSC in the U.S. and Europe thereafter. In Asian countries, while TVM remains as a core surgical option due to relatively low reported complication rates, more doctors tend to perform LSC, especially for sexually-active or younger patients [1]. As LSC is increasing, problems associated with LSC are starting to be discovered.

We present a cystoscopic finding (the “Central Road”) caused by excessive tension on the LSC mesh in a woman who had severe mixed urinary incontinence (MUI) following LSC.

## Methods

A 70-year old woman developed severe MUI immediately after LSC. Her cystoscopy revealed an unusual cord-like elevation resembling a “Central Road”.

Patient details were analyzed and examinations including videourodynamics and cystourethrography were done before and after transobturator tape operation (TOT) to treat stress urinary incontinence (SUI).

## Results

She underwent LSC due to stage III uterine prolapse and cystocele. After subtotal hysterectomy, anterior and posterior mesh were fixed to the vaginal walls and the uterine cervix was fixed to the sacrum (promontorium) with mesh. A cough stress test during prolapse reduction was negative preoperatively, so she did not undergo concomitant anti-incontinence surgery.

Although only occasional MUI occurred before LSC, severe MUI developed immediately after LSC: SUI 5-6 times a day, and urgency urinary incontinence (UUI) 1-2 times a day. She had urinary incontinence with coughing, sneezing, walking, and physical exercise such as stretching and jumping. When she coughed successively, she had massive incontinence with urinary urgency. While using 80 cc urinary pads, she had to change them 4 times a day. Anticholinergic medication was effective to decrease the amount of UUI. Then, she underwent a cystoscopy, which revealed no mesh exposure or tumor but a cord-like elevation in the center of the trigon and posterior wall resembling a “Central Road” (Fig. 1).



A cough stress test showed massive leakage synchronized with coughing, and a one-hour pad test showed 44.1g/hr. of leakage. Uroflowmetry was normal: Qmax 23.7 ml/s, voided volume 491 ml, and residual volume 22 ml.



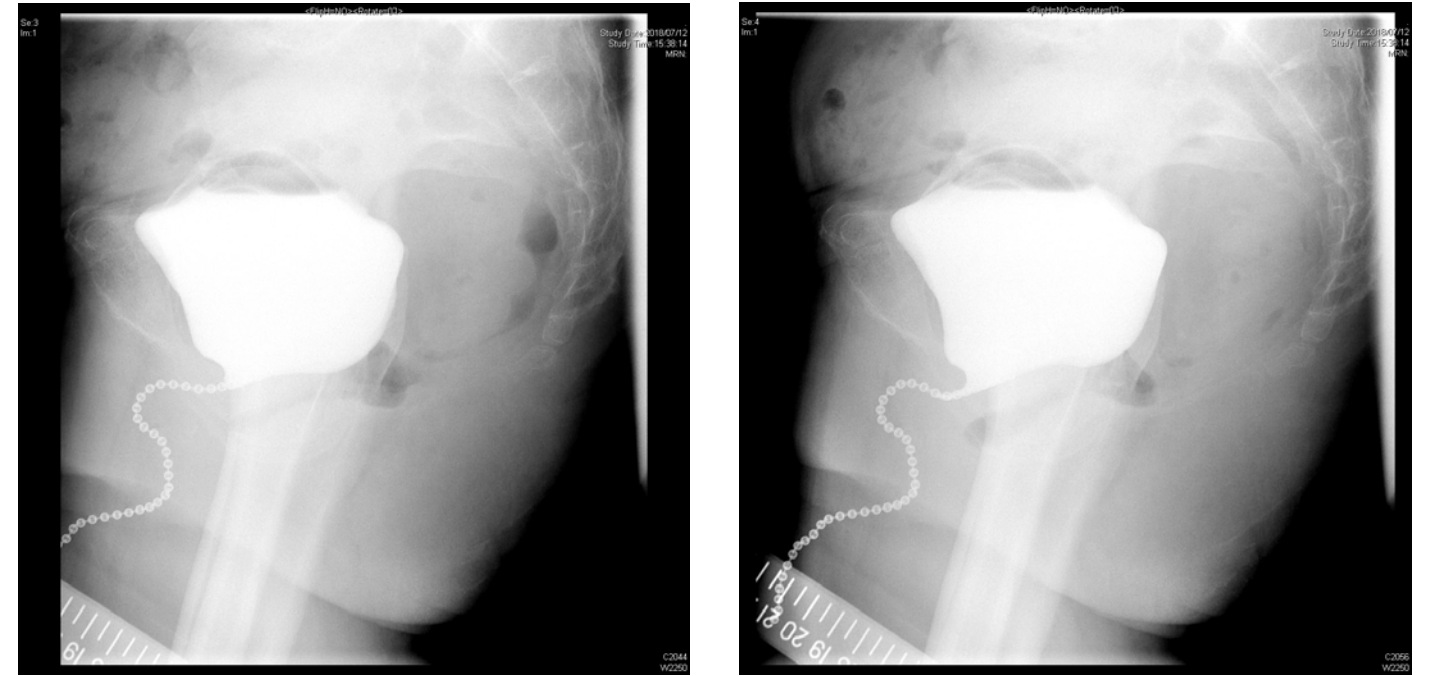
## Compliance with ethical standards

Conflicts of interest: None.

Consent: Written informed consent was obtained from the patient for publication of this case and any accompanying images.

This study was approved by the ethics committee of Japanese Red Cross Nagoya First Hospital.

Videourodynamics showed urodynamically proven SUI (Valsalva leak point pressure 147 cmH<sub>2</sub>O) but no detrusor overactivity under anticholinergic medication. Chain cystourethrography was unusual; the proximal urethra was open, and both upper urethral angle and posterior vesicourethral angle were widened in an atypical way (Fig. 2), which indicated that posterior vesical wall and proximal urethra were pulled excessively in the direction of the sacrum by the LSC mesh.



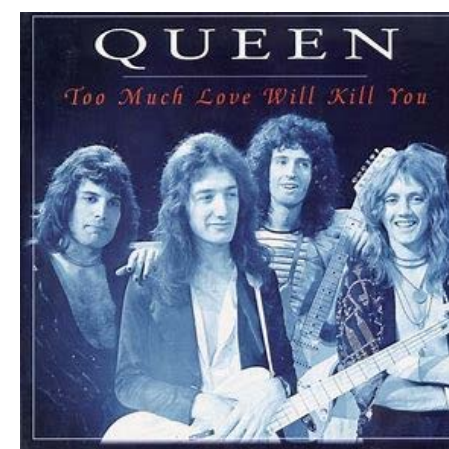
Finally, 18 months after LSC, the patient underwent TOT under general anesthesia. During 6 months of follow-up, both SUI and UUI were completely relieved without medication, and no urinary pads were necessary. Cough stress tests became negative and residual volume remained normal. Videourodynamics showed no urodynamically proven SUI or detrusor overactivity.

## Conclusions

Prolapse operation are known to cause worsened or de novo SUI by relieving the obstruction, but there are also iatrogenic factors including surgical techniques [2]. It has been a topic of discussion among professionals that excessive tension in a prolapse repair predisposes to the opening of the bladder neck and worsened urinary incontinence. LeClaire et al. reported that a greater reduction in point Aa increased the risk of de novo SUI [3]. Miwa et al. reported that the retrovaginal angle (RVA) measured by transperitoneal ultrasound was significantly enlarged postoperatively in patients with worsened SUI [4].

In our case, a “Central Road” cystoscopic finding and cystourethrography indicated that the posterior vesical wall and the proximal urethra were pulled excessively in the direction of the sacrum by the LSC mesh. Such overtensioning can cause straightening (dekinking) and opening of the bladder neck and proximal urethra, thus worsen SUI and possibly UUI (stress-induced instability). Loosening of the LSC mesh might be necessary in some cases though midurethral sling procedure was sufficient to treat MUI in this case.

In conclusion, too much tension on the LSC mesh which connects uterine cervix to the sacrum can cause postoperative worsening of urinary incontinence, and people should be cautious in the adjustment of mesh tension in LSC. The “Central Road” finding on a cystoscope can be a marker of overtensioning.



Too much tension on the MUS tape can cause obstruction and retention.

Too much tension on the LSC mesh can cause dekinking and worsen incontinence.

## References

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