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

Video-urodynamics showed urodynamically proven SUI (Valsalva-leak point pressure 147 cmH2O) 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.

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]. Mika 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 straining (dekinking) and opening of the bladder neck and worsened urinary incontinence, thus worsen SUI and possibly UUI (stress-induced incontinence). Losing mesh 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.

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.

References