Case report

A case of laparoscopic surgery for endometrial cancer in a patient previously treated with a transvaginal mesh procedure for pelvic organ prolapse

Kiyoshi Yoshino a,*, Eiji Kobayashi a, Masayuki Endo a, b, Mamoru Kakuda a, Aiko Okada a, Takuji Tomimatsu a, Kenjiro Sawada a, Masahiko Takemura b, Tadashi Kimura a

a Department of Obstetrics and Gynecology, Osaka University Graduate School of Medicine, Osaka, Japan
b Department of Obstetrics and Gynecology, Osaka General Medical Center, Osaka, Japan

ARTICLE INFO

Article history:
Received 23 February 2017
Received in revised form
1 March 2017
Accepted 7 March 2017
Available online 15 April 2017

Keywords:
endometrial cancer
laparoscopic surgery
pelvic organ prolapse
transvaginal mesh

ABSTRACT

Transvaginal mesh (TVM) surgery is an effective treatment option for women with pelvic organ prolapse (POP). Because the TVM procedure preserves the uterus, it is possible for endometrial cancer to occur at a later date. We herein present the first report of such an endometrial cancer, diagnosed well after TVM surgery for POP, and the use of laparoscopic surgery to conduct a simple total hysterectomy to treat it.

Introduction

Because it preserves the uterus, transvaginal mesh (TVM) surgery is an effective and desirable treatment option for women with pelvic organ prolapse (POP).1 However, even with careful preoperative evaluation of the uterus before TVM, cryptic uterine malignancies may be present, or they may occur at a later date. The presence of the TVM mesh could present a surgical problem during a hysterectomy. We present here the first known case of occurrence and successful treatment of endometrial cancer diagnosed well after a TVM surgery for POP.

Case Report

A 68-year-old female (gravida 4, para 3) presented with POP symptoms. Urogynecologic evaluation using the Pelvic Organ Prolapse Quantification system revealed a Stage 4 prolapse. Her body mass index was 24.1 kg/m². She was being medicated with a thyroid drug due to hypothyroidism. She had no known family history of malignancies. She denied being on any hormonal replacement therapy. On examination, there were no palpable masses or genital spotting. In favor of a definitive and long-lasting treatment for her POP, she was counseled about TVM.

After confirmation of a normal clinical examination, including normal endometrial thickness, observed using transvaginal ultrasonography (Figure 1A), and normal endometrial cytology, she underwent anterior and posterior TVM and perineorrhaphy. During the surgery, two polypropylene meshes (Polyform Synthetic Mesh, Boston Scientific, Marlborough, MA, USA) were cut to an appropriate size to cover the whole cystocele and rectocele, leaving two tabs on each side for cystocele and one tab on each side for rectocele, respectively. The meshes were then placed in paravaginal spaces, tension free, without stitches using the ProLift System (Gynecare, Somerville, NJ, USA). The patient had a quick recovery, and was doing well at her 3-month postoperative visit, with no recurrent prolapse.

Thirteen months later, the patient presented with painless vaginal spotting. At that point, her endometrial thickness was 20 mm, measured by transvaginal ultrasonography (Figure 1B). Endometrial cytology suspected endometrioid adenocarcinoma. Biopsy of the endometrium showed endometrioid adenocarcinoma, Grade 1. The magnetic resonance imaging showed myometrial invasion.
We offered the patient laparoscopic surgery for her endometrial cancer. Because TVM was performed previously (Figure 2A), we expected the surgery to be difficult due to the mesh, and we planned accordingly. During surgery through the peritoneum, the mesh was observed in the vesicovaginal space and the pouch of Douglas (Figures 2B and 2C). Because no cervical stromal invasion by the tumor was detected by magnetic resonance imaging, there was no need to resect the parametrium. Therefore, we removed the uterus in a simple total hysterectomy manner, without peeling off or cutting the mesh. Prior to colpotomy, a vaginal fornix was delineated using VAGI PIPE (Hakko Medical, Nagano, Japan). When the outline of vaginal fornix was visible at the attachment of uterosacral ligament, the circumference of the vaginal wall was cut from the anterior vaginal wall using a Harmonic Ace scalpel (Ethicon, Somerville, NJ, USA) until the cervix is separated. Although the vaginal stroma appeared to have yellowish fibrous scar tissue (Figure 2D), there was no problem in suturing it.

A frozen section of the uterus revealed a Grade 1 endometrioid adenocarcinoma, with deep myometrial invasion. Pelvic washings were obtained upon the initial abdominal entry. The uterus, both fallopian tubes, and both ovaries were resected. Pelvic and paraaortic lymph nodes were also removed laparoscopically, using an Endowiper (Osaki Medical, Nagoya, Japan) to prevent lens obstruction due to a contaminated camera port. Operation time was 345 minutes; blood loss was 290 mL. She recovered well and her postoperative course was uneventful.

The final pathological diagnosis was of endometrioid adenocarcinoma Grade 1, World Health Organization (2014) pT1bN0M0, International Federation of Gynecology and Obstetrics (2014) Stage IB, ly(0), v(0), no metastases in 55 resected lymph nodes, negative for washing cytology. The patient underwent adjuvant combination chemotherapy with paclitaxel, carboplatin, and epirubicin thereafter. She was doing well, without recurrence of cancer or POP symptom, at her 15-month follow-up.

**Discussion**

TVM is a highly effective surgical option for women with advanced POP. By placing the mesh anteriorly in the vesicovaginal connective tissues and posteriorly in the rectovaginal connective tissues, the mesh provides support for the pelvic organs. This approach minimizes the risk of recurrence and POP symptom.
operative endometrial sampling is recommended. Although rare, endometrial cancer can occur following the TVM procedure. When a simple total hysterectomy is selected as a treatment option in such cases, laparoscopic surgery can be performed safely. Presumably, a radical hysterectomy, which removes the parametrium, should be more difficult to conduct, due to stenosis of the connective tissues in the vesicovaginal and rectovaginal spaces.

Acknowledgments

The authors thank H. Abe for her excellent assistance of creating figures of this paper.

References

1. Takeyama M. Basic procedures in tension-free vaginal mesh operation for pelvic organ prolapse. Int J Urol. 2011;18:555–556.
2. Kobayashi E, Kakuda M, Tanaka Y, et al. A novel device for cleaning the camera port during laparoscopic surgery. Surg Endosc. 2016;30:330–334.
3. Renganathan A, Edwards R, Duckett JR. Uterus conserving prolapse surgery—what is the chance of missing a malignancy? Int Uрогynecol J. 2010;21:819–821.
4. Frick AC, Walters MD, Larkin KS, Barber MD. Risk of unanticipated abnormal gynecologic pathology at the time of hysterectomy for uterovaginal prolapse. Am J Obstet Gynecol. 2010;202:507.e1–e4.
5. Ramon O, Gleason JL, Segal S, Antosh DD, Kenton KS. Utility of preoperative endometrial assessment in asymptomatic women undergoing hysterectomy for pelvic floor dysfunction. Int Uрогynecol J. 2012;23:913–917.
6. Mahnert N, Morgan D, Campbell D, Johnston C, As-Sanie S. Unexpected gynecologic malignancy diagnosed after hysterectomy performed for benign indications. Obstet Gynecol. 2015;125:397–405.
7. Tohyama A, Yoshimura K, Nishimura K, Kawagoe T, Hachisuga T. A case of uterine endometrioid adenocarcinoma diagnosed after laparoscopic supracervical hysterectomy and sacrocolpopexy for pelvic organ prolapse. Jpn J Obstet Gynecol Obst Endosc. 2015;31:178–181 [Article in Japanese].
8. Hosoi A, Ueda Y, Shindo M, et al. Endometrial thickness measured by ultrasonography in postmenopausal patients with endometrial carcinoma has significance, irrespective of histological subtype. Int J Gynecol Cancer. 2013;23:1266–1269.