Management of pelvic floor disorder in a diethylstilbestrol daughter

Christopher P. Chung, MD, Suzanne Cao, DO, Grace Wakabayashi, and Ernest S. Han, MD, PhD

Between 1947 and 1971, the synthetic estrogen diethylstilbestrol (DES) was prescribed to pregnant women to prevent spontaneous abortions. Many studies have demonstrated adverse consequences of prenatal DES exposure. This report describes a DES daughter treated for uterine cancer who presented with a foreshortened vagina of 4 cm and stage III pelvic organ prolapse. She underwent successful vaginal native tissue reconstructive surgery with uterosacral colpopexy and anterior and posterior repair to lengthen her vagina and treat her prolapse. She then developed stress incontinence and underwent periurethral bulking 5 months later. She has been followed for 2 years with no recurrence of prolapse or incontinence.

Here we describe a case of pelvic floor disorder in a woman exposed to diethylstilbestrol (DES) in utero who also had a history of treated gynecologic cancer. Due to the side effects of radiation on vaginal epithelium, special consideration should be taken when performing pelvic floor reconstructive surgery.

CASE DESCRIPTION

A 64-year-old nulliparous known DES daughter had a history of stage III, grade 2 endometrioid adenocarcinoma of the uterus treated by total abdominal hysterectomy and bilateral salpingo-oophorectomy and staging. She received pelvic radiation, brachytherapy, and six cycles of paclitaxel and carboplatin in 2003 (at age 51). She then presented to our service with stage III vaginal vault prolapse (vaginal cuff prolapsing 2 cm outside of hymen) and a foreshortened vagina of 4 cm. She was sexually active and wished to proceed with definitive surgical management for her prolapse. Bladder stress test with prolapse reduction did not demonstrate stress incontinence.

With transvaginal anterior and posterior repair, we were able to lengthen her vagina to 9 cm with high uterosacral colpopexy. Postoperatively, she was instructed to use a vaginal dilator to prevent vaginal stenosis. Five months after her prolapse surgery, she complained of having bothersome stress urinary incontinence, which was confirmed by urodynamic testing. She then underwent periurethral bulking injection with good result. She has been followed for 2 years with no recurrence of prolapse or

incontinence. Her vaginal length decreased to 8 cm, and she has continued use of a vaginal dilator.

DISCUSSION

Pelvic organ prolapse in the general population is common. The prevalence of pelvic organ prolapse is estimated to be as high as 30% to 40%. In the United States, it is estimated that women have an 11% lifetime risk of surgery for pelvic organ prolapse or incontinence (1). However, pelvic floor disorder among DES daughters has not been well described. It is unknown if DES exposure has any impact on a patient's risk of pelvic organ prolapse. DES is a potent teratogen, and prenatal DES exposure can disrupt the differentiation of estrogen target organs, mainly the reproductive organs (2). DES is known to have adverse consequences including clear cell adenocarcinoma of the vagina or cervix and genital tract abnormalities such as transverse cervical and vaginal ridges, vaginal adenosis, and hypoplastic and "T-shaped" uterus (3). Many studies have demonstrated that DES daughters also have poor reproductive histories and commonly experience infertility, premature delivery, and recurrent abortions.

Careful and extensive consideration was given in approaching this patient's prolapse surgery due to her foreshortened vagina (4 cm) and history of uterine cancer and pelvic radiation. Abdominal sacral-colpopexy with mesh was discussed with her. Due to the risk of mesh-related complications including erosion and fistula formation, the patient elected to proceed with vaginal native tissue reconstructive surgery. We elected to proceed with high uterosacral ligament colpopexy due to the ability to preserve and lengthen her vagina.

Radiation is a common treatment modality for gynecologic cancers. Treatment with radiation has been associated with adverse side effects including shortening and stenosis of the vagina, decreased lubrication, and atrophy. There was an extensive discussion with the patient about the possibility of the recurrence of a short vagina as well as vaginal stenosis. Therefore, our patient was instructed to use a vaginal dilator and resume

---

From the Division of Gynecologic Oncology, Department of Surgery, City of Hope Medical Center, Duarte, California.

Corresponding author: Christopher Chung, MD, 1500 E. Duarte Road, Duarte, CA 91010 (e-mail: chchung@coh.org).

normal sexual relations with her husband 2 months after her index surgery. The treatment options for stress incontinence were also discussed with her extensively. She elected to have periurethral bulking due to the ease of this procedure and to avoid possible mesh complications.

-
1. Blandon RE, Bharucha AE, Melton LJ III, Schleck C, Babalola E, Zinsmeister A, Gebhart J. Incidence of pelvic floor repair after hysterectomy:

a population-based cohort study. *Am J Obstet Gynecol* 2007;197(6):664.e1–664.e7.

2. Swan SH. Intrauterine exposure to diethylstilbestrol: long-term effects in humans. *APMIS* 2000;108(12):793–804.
3. Kaufman RH, Adam E, Binder GL, Gerthoffer E. Upper genital tract changes and pregnancy outcome in offspring exposed in utero to diethylstilbestrol. *Am J Obstet Gynecol* 1980;137(3):299–308.