Case report

Endometrial carcinoma in a 14-year-old: A case report

Hajime Uda⁠a, Miho Kitai⁠b,⁎, Ai Kogiku⁠b, Anna Kobayashi⁠c, Toshiko Sakuma⁠c, Shoji Nagao⁠a, Satoshi Yamaguchi⁠a

a Department of Gynecologic Oncology, Hyogo Cancer Center, 13-70 Kita-Oji, Akashi, Hyogo 673-8558, Japan
b Department of Obstetrics and Gynecology, Nishikobe Medical Center, 5-7-1 Kojidai, Nishi-ku Kobe, Hyogo 651-2273, Japan
c Department of Pathology, Hyogo Cancer Center, 13-70 Kita-Oji, Akashi, Hyogo 673-8558, Japan

ARTICLE INFO

Keywords:
Endometrial carcinoma
Juvenile
MPA
Fertility-sparing

1. Introduction

Endometrial carcinoma (EC) has been increasing in Japan. Various reasons have been offered for this change, including late marriage accompanying women’s social advancement, more women who forego having children, and increased obesity and diabetes due to Westernization of diet (Sugawara et al., 2018). EC accounts for more than half of gynecological malignancies among women in their 50s and 60s but has shown an increase in occurrence in women of reproductive age, among whom its incidence rate is about 5%–25% (Crissman et al., 1981; Gallup and Stock, 1984; Kaku et al., 1993). In the report of the Gynecologic Malignancy Committee of the Japanese Association of Obstetrics and Gynecology, EC among reproductive-age women roughly tripled, from 161 cases (5.8%) in 1999 to 507 cases (4.5%) in 2016. Standard treatment of low-risk EC (such as grade 1–2 endometrioid adenocarcinoma and cancer limited to endometrium) is surgical staging with total hysterectomy, bilateral salpingo-oophorectomy, and pelvic lymph node evaluation. The 5-year survival rate of low risk EC is 90% or more, which is a very good prognosis. However, for reproductive-aged women who wish to preserve fertility, fertility-sparing therapy is needed. Progestin therapy is a common approach for low-risk EC in women who wish to preserve fertility (Ushijima et al., 2007; Qin et al., 2016).

Here, we present a case of juvenile EC in a 14-year-old girl, who was successfully treated with medroxyprogesterone acetate (MPA).

2. Case presentation

This patient was a 14-year-old girl. She was not sexually active. Her menarche occurred at the age of 10 and her menstrual cycle was regular. She was 153 cm tall, and weighed 52.3 kg (body mass index: 22.3). Her family had no known history of EC. Because of abnormal uterine bleeding, she visited a nearby gynecological clinic. As abdominal ultrasonography showed highly thickened endometrium, she was directed to a larger hospital for review and treatment. At the time of consultation, she was found to be severely anemic (Hemoglobin: 7.7 g/dL) because of sustained vaginal bleeding, and was admitted to the hospital for examination and treatment. Pelvic magnetic resonance imaging (MRI) confirmed a thickened endometrium; lesions were not observed in the muscle layer, but a solid portion with a contrast effect was found in the thickened endometrium. The diffusion-weighted image showed a high signal and decreased apparent diffusion coefficient (ADC), so endometrial hyperplasia and partial malignancy were diagnosed (Fig. 1). Petechial magnetic resonance imaging (MRI) confirmed a thickened endometrium; lesions were not observed in the muscle layer, but a solid portion with a contrast effect was found in the thickened endometrium. The diffusion-weighted image showed a high signal and decreased apparent diffusion coefficient (ADC), so endometrial hyperplasia and partial malignancy were diagnosed (Fig. 1).

She underwent a diagnostic endometrial curettage under anesthesia. Pathology of the endometrium showed total hysterectomy, bilateral salpingo-oophorectomy, and pelvic lymph node evaluation. The 5-year survival rate of low risk EC is 90% or more, which is a very good prognosis. However, for reproductive-aged women who wish to preserve fertility, fertility-sparing therapy is needed. Progestin therapy is a common approach for low-risk EC in women who wish to preserve fertility (Ushijima et al., 2007; Qin et al., 2016).

Here, we present a case of juvenile EC in a 14-year-old girl, who was successfully treated with medroxyprogesterone acetate (MPA).
and was prescribed antibiotic treatment. After confluence at the end of the MPA course conduction revealed an atypical endometrial hyperplasia, so the MPA was judged to require a hysterectomy if preservation treatment were not successful, and her parents’ informed consent included the possibility that she would receive a bilateral salpingo-oophorectomy, but as this patient was 14 years old, we intended to perform minimum endometrial curettage under anesthesia.

The standard treatment for early-stage EC is total hysterectomy and bilateral salpingo-oophorectomy with pelvic lymph node evaluation. However, for young women who desire fertility preservation, progestin therapy is an acceptable treatment option. A meta-analysis has reported that the rate of remissions by progestin therapy is 82.4% (Qin et al., 2016). In Japan, MPA is the only available oral form of progestin. It has latent side effects, such as thrombus formation, dysmenorrhea, headache, weight gain, chest pain and the like. We treated this patient with MPA at a dose of 600 mg/day, and aspirin at 100 mg/day to prevent thrombus formation. Progestin-releasing IUD is another option for progestin therapy in worldwide and, along with oral progestin agents, they are associated with an overall complete remission (CR) rate of 87.5% (Kim et al., 2013). Progestin-releasing IUDs combined with oral progestin is expected both to improve the CR rate, and to provide strong therapeutic choice for patients who do not desire immediately to conceive a pregnancy. In particular, in very young patients who need long-term treatment to avoid recurrence, progestin-releasing IUD is an adequate maintenance treatment with low risk of adverse effects. In Japan, progestin-releasing IUD (levonorgestrel IUD) can be used for women who complain of hypermenorrhea or dysmenorrhea. We hope that a progestin-releasing IUD is immediately approved as a continuing therapy in Japan for young EC patients who receive fertility-sparing therapy and achieve CR. The KOGO study group demonstrated that, after achieving CR, the recurrence rate is 30.4% for patients with stage IA, grade 1 EC (Park et al., 2013). Women who have achieved CR are recommended to receive long-term follow-up by endometrial evaluation and imaging, such as MRI or CT. In this case, the patient is a virgin, for whom office endometrial biopsies are difficult. Therefore, she receives endometrial curettage under anesthesia every 4 months. Frequent endometrial curettage carries a risk of inducing endometrial adhesion and consequent infertility. We intend to perform minimum endometrial curettages after confirming the absence of EC recurrence after one year.

4. Conclusion

We present a case of juvenile patient with EC who desired fertility preservation. She was treated by progestin therapy for 26 weeks and achieve CR. Although juvenile EC is extremely rare, it should be considered among juveniles with sustained abnormal uterine bleeding, even if they have no risk factors. Furthermore, fertility preservation in juvenile patients (who presumably do not want to become pregnant for many years) requires a longer time frame than for older patients; during this time, maintenance treatments that avoid EC recurrence with low adverse effects are needed after achieving CR of disease.

Ethics approval and consent to participate and consent for publication

Written informed consent was obtained from the patient and...
parents, and this case report was approved by the Institutional Review Board of Hyogo Cancer Center according to the ethical standards laid down in the Declaration of Helsinki.

Conflict of interests

The authors declare no conflicts of interest.

Author contribution

HU and MK wrote the main manuscript body. HU, MK and AK were in charge of the presented patient and treated her endometrial cancer with conservative management. AK and TS were responsible for evaluation in pathology. SN and SY read the article and gave the first author suggestions to improve the manuscript.

Acknowledgements

This study was partially supported by Hyogo Cancer Center. We also thank Marla Brunker, from Edanz Group (www.edanzediting.com/ac), for editing a draft of this manuscript.

References

ACOG Committee Opinion No.651, 2015. Menstruation in girls and adolescents: using the menstrual cycle as a vital sign. Obstet. Gynecol. 126, e143.

Crisman, J.D., Azoury, R.S., Barnes, A.E., et al., 1981. Endometrial carcinoma in women 40 years of age or younger. Obstet. Gynecol. 57, 699–704.

Gallup, D.G., Stock, R.J., 1984. Adenocarcinoma of the endometrium in women 40 years of age or younger. Obstet. Gynecol. 64, 417–420.

Hampel, H., Frankel, W.L., Martin, E., et al., 2005. Screening for the Lynch syndrome (hereditary nonpolyposis colorectal cancer). N. Engl. J. Med. 352, 1851–1860.

Kaku, T., Matsuo, K., Tsukamoto, N., et al., 1993. Endometrial carcinoma in women aged 40 years or younger: a Japanese experience. Int. J. Gynecol. Cancer 3, 147–153.

Kim, M.K., Seong, S.J., Kim, Y.S., et al., 2013. Combined medroxyprogesterone acetate/levonorgestrel-intrauterine system treatment in young women with early-stage endometrial cancer. Am. J. Obstet. Gynecol. 209 (3/4).

Lee, N.K., Cheung, M.K., Shin, J.Y., et al., 2007. Prognostic factors for uterine cancer in reproductive-aged women. Obstet. Gynecol. 109 (3), 655.

Park, J.Y., Kim, D.Y., Kim, J.H., et al., 2013. Long-term oncologic outcomes after fertility-sparing management using oral progestin for young women with endometrial cancer (KGOG 2002). Eur. J. Cancer 49, 868–874.

Qin, Y., Yu, Z., Yang, J., et al., 2016. Oral progestin treatment for early-stage endometrial cancer: a systematic review and meta-analysis. Int. J. Gynecol. Cancer 26, 1081–1091.

Shia, J., 2008. Immunohistochemistry versus microsatellite instability testing for screening colorectal cancer patients at risk for hereditary nonpolyposis colorectal cancer syndrome. Part I. The utility of immunohistochemistry. J. Mol. Diagn. 10, 293–305.

Sugawara, Y., Sugiyama, K., Tomata, Y., et al., 2018. Age at first birth and the risk of endometrial cancer incidence: a pooled analysis of two prospective cohort studies among Japanese women. J. Cancer 9 (23), 4422–4429.

Ushijima, K., Yahata, H., Yoshikawa, H., et al., 2007. Multicenter phase II study of fertility-sparing treatment with medroxyprogesterone acetate for endometrial carcinoma and atypical hyperplasia in young women. J. Clin. Oncol. 25, 2798–2803.

Fig. 2. Histological findings of endometrial specimen. (a) Tumor cells show atypical hyperplasia. (hematoxylin and eosin, ×40). (b) Cellular and structural atypia in an endometrioid adenocarcinoma, grade 1 (hematoxylin and eosin, ×200).

Fig. 3. Hysteroscopy found no obvious proliferative lesion in the patient’s uterus.