# Endometrial Adenocarcinoma, Endometrioid Type, FIGO Grade 1 in a 22-Year-Old Female

Kellyann McClenahan PA-S, Cindy Rossi MHS, PA-C
Quinnipiac University Physician Assistant Program

## Introduction

- Endometrial adenocarcinoma is the most common gynecologic malignancy in females and is diagnosed by endometrial biopsy.[1]
- This malignancy usually presents with abnormal uterine bleeding and is found in the post-menopausal population at a mean age of 63 years.[1]
- Only 2-5% of cases of endometrial cancer occur before age 40.[1]
- Risk factors include conditions with excess endogenous or exogenous hormones such as obesity, diabetes, nulliparity, early menarche and late menopause.[2,3]
- Polycystic ovarian syndrome (PCOS) previously was thought to increase the likelihood of women to develop endometrial carcinoma, but there is no proven correlation other than that both PCOS and endometrial carcinoma share common risk factors.[4]
- Type I endometrial adenocarcinoma has a better prognosis than type II.[1,3]
- Type I consists of low-grade histology, usually endometrioid, which responds well to hormone therapy and has a five-year survival rate of 96% with no lymph node metastasis and 67% with lymph node metastasis.[3,5]
- Type II is made up of high-grade histology including serous cell carcinomas which are estrogen independent and often metastasizes to lymph nodes and surrounding organs. has a five-year survival rate of 35%.[3,5,6]
- Treatment is surgical with a hysterectomy either transabdominally, as an open surgery, or transvaginal, laparoscopically. The five-year survival rate is equivalent for both procedures, but the recovery time is less with less morbidity due to the procedure if done laparoscopically.[7]
- Adjuvant chemotherapy is initiated for high grade endometrial cancers and includes regimes such as paclitaxel with carboplatin or docetaxel with cisplatin.[8]
- Table 1 includes the Federation of Gynecology and Obstetrics (FIGO) staging system to classify endometrial carcinomas.[9]

**Table 1. 2009 FIGO Staging System for Endometrial Carcinoma[1]**

| | | |
|---|---|---|
| Stage I | Tumor confined to uterine corpus | |
| | IA | 0 to <50% myometrial invasion |
| | IB | 50% or greater myometrial invasion |
| Stage II | Tumor involves cervical stroma | |
| Stage III | Tumor with local and/or regional spread | |
| | IIIA | Tumor invades uterine serosa and/or adnexa |
| | IIIB | Vaginal and/or parametrial involvement |
| | IIIC | Lymph node metastases |
| | IIIC1 | Metastases to pelvic lymph nodes |
| | IIIC2 | Metastases to para-aortic lymph nodes |
| Stage IV | Tumor invades bladder/bowel and/or distant metastases | |
| | IVA | Tumor involves bladder and/or bowel mucosa |
| | IVB | Metastases to abdomen and/or inguinal lymph nodes |

## Case Description

***Brief Patient History***

- 22-year-old nulliparous female presents to ED with excessive vaginal bleeding and pelvic pain for 6 months
- Recently discharged from hospital 3 days prior for excessive bleeding, anemia due to blood loss and a pulmonary embolism that she began apixaban
- Past medical history: obesity (BMI 45), PCOS, menorrhagia, abnormal menstrual cycles and anemia
- Patient had recent increase in menstrual bleeding and inter-menstrual cycle bleeding over the past 6 months
- Medication: levonorgestrel-releasing intrauterine device (IUD), apixaban 5mg PO daily
- Family history: breast cancer and cervical cancer on maternal side, ovarian cancer on paternal side
- Social history: no tobacco use, monogamous same-sex relationship
- ROS: denies recent weight change, headache, nausea, shortness of breath or lightheadedness

***Physical Exam***

- Abdominal exam: soft, non-tender, no masses, normoactive bowel sounds
- Speculum exam: cervix visualized with nulliparous os and string from IUD in correct position, bloody discharge noted
- Bimanual exam: external genitalia, and vaginal walls non-tender and within normal limits
  - Uterus mobile, non-tender, anteverted
  - Adnexa non-palpable
- Rectovaginal exam: no cul-de-sac nodularity or tenderness
- No inguinal, supraclavicular or submandibular lymphadenopathy

***Differential Diagnosis***

- Endometrial polyps
- PCOS related menorrhagia
- Coagulation disorder
- Leiomyoma
- Malignancy – endometrial, cervical or ovarian cancer

***Diagnostic Testing and Results***

- CBC: **abnormal**; low hemoglobin and hematocrit consistent with anemia **7.2 g/dL and 24.0%**, slightly elevated white blood count **16.8 thou/uL**
- Chemistry studies: elevated glucose **126mg/dL** and ALT **54 IU/L**
- ECG: no ischemic changes, sinus tachycardia
- Cancer antigen 125 **positive**
- Normal pap-smear, hCG <5mIU/mL
- Transvaginal ultrasound revealed a thickened endometrial stripe measuring **18.8mm**
- Hysteroscopy: abnormal uterine cavity with polypoid endometrium
- Endometrial biopsy revealed final diagnosis
  - **FIGO grade I, endometrioid type, ER positive endometrial adenocarcinoma with atypical endometrial hyperplasia**
- Genetic testing completed, and results were negative

Figure 1: Hospital Course

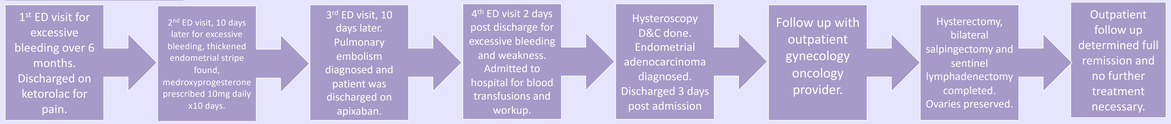
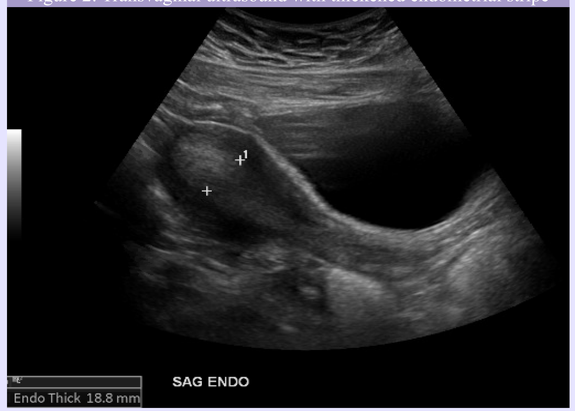



Figure 2: Transvaginal ultrasound with thickened endometrial stripe




## Patient Management

- Patient was admitted to hospital, hysteroscopy dilation and curettage and endometrial biopsy was done, and diagnosis was given.
- Bleeding was controlled and patient was discharged with follow up to outpatient gynecology oncology provider.
- Options for treatment were discussed and patient decided to have a hysterectomy due to her PCOS history, social history and being adamant about never becoming pregnant.
- Genetic testing was done due to family history of cancer, but it returned negative therefore ovaries were preserved during the procedure to avoid inducing menopause.
- Robotic laparoscopic hysterectomy, bilateral salpingectomy and sentinel lymphadenectomy procedure was scheduled and completed successfully with no complications.
- Patient was discharged with close follow up with gynecology oncology provider to determine need for adjuvant therapies.
- Pathology report returned as benign, and no further treatment was necessary.
- Patient was cleared for all activities two months post-op.

## Discussion

- Abnormal uterine bleeding can stem from structural or nonstructural causes and can be remembered using the acronym PALM-COEIN.[1,10]
  - Structural causes include polyps, adenomyomas, leiomyomas or malignancy and hyperplasia (PALM)
  - Nonstructural causes include coagulopathies, ovulatory dysfunction, endometrial, iatrogenic or causes not yet specified (COEIN).
- Structural causes can be seen on imaging including transabdominal or transvaginal ultrasounds as seen in Image 1 where a thickened endometrial stripe is present.
- A normal endometrial stripe at any point in the menstrual cycle is 14mm or less, but if an endometrial stripe is greater than or approaching 20mm there should be concern for malignancy.[1,10]
  - Endometrial stripe greater than 11mm is normal in post-menopausal women
- Since approximately 95-98% of endometrial carcinoma occurs in post-menopausal women, it is not often high on a differential for abnormal uterine bleeding in a 22-year-old female[1]

## Conclusion

- Endometrial adenocarcinoma is uncommon in younger women but should be on a differential to be ruled out as a cause of abnormal uterine bleeding.
- A total hysterectomy with bilateral salpingo-oophorectomy is the most successful treatment but is not the only option for pre-menopausal women who want to preserve reproductive organs.
- Genetic testing helps to determine whether ovaries can be preserved. If so, hormones can continue to cycle and there is a possibility for preservation of eggs for future in-vitro fertilization.
- Adjuvant chemotherapy is used if there is high risk of recurrence, or the pathology report returns with a high-grade carcinoma.
- Regular follow up bi-annually for a 2-3 years is recommended and then will decrease to annual exams.

## References

1. Creasman WT, Miller DS. Adenocarcinoma of the Uterine Corpus. In: DiSaia PJ, Creasman WT, Mannell RS, McMeekin S, Mutch DG, eds. *Clinical Gynecologic Oncology*. 9th ed. Elsevier; 2018.
2. Kaaks R, Lukanova A, Kurzer MS. Obesity, endogenous hormones, and endometrial cancer risk: a synthetic review. *Cancer Epidemiol Biomarkers Prev*. 2002;11(12):1531-1543.
3. Malik TY, Chishti U, Aziz AB, Sheikh I. Comparison of risk factors and survival of type I and type II endometrial cancers. *Pak J Med Sci*. 2016;32(4):886-890. doi:10.12669/pjms.324.9265
4. Barry JA, Azizia MM, Hardiman PJ. Risk of endometrial, ovarian and breast cancer in women with polycystic ovary syndrome: a systematic review and meta-analysis. *Hum Reprod Update*. 2014;20(5):748-758. doi:10.1093/humupd/dmu012
5. Siegel RL, Miller KD, Jemal A. Cancer statistics, 2020. *CA Cancer J Clin*. 2020;70(1):7-30. doi:10.3322/caac.21590
6. Gottwald L, Pluta P, Piekarski J, et al. Long-term survival of endometrioid endometrial cancer patients. *Arch Med Sci*. 2010;6(6):937-944. doi:10.5114/aoms.2010.19305
7. Janda M, Gebski V, Davies LC, et al. Effect of total laparoscopic hysterectomy vs total abdominal hysterectomy on disease-free survival among women with stage I endometrial cancer: a randomized clinical trial. *JAMA*. 2017;317(12):1224-1233. doi:10.1001/jama.2017.2068
8. Nomura H, Aoki D, Michimae H, et al. Effect of taxane plus platinum regimens vs doxorubicin plus cisplatin as adjuvant chemotherapy for endometrial cancer at a high risk of progression: a randomized clinical trial. *JAMA Oncol*. 2019;5(6):833-840. doi:10.1001/jamaoncol.2019.0001
9. Singh S, Raidoo S, Pettigrew G, Debernardo R. Management of early stage, high-risk endometrial carcinoma: preoperative and surgical considerations. *Obstet Gynecol Int*. 2013;2013:757249. doi:10.1155/2013/757249
10. Kriplani A, Srivastava A, Kulshrestha V, et al. Efficacy of ormeloxifene versus oral contraceptive in the management of abnormal uterine bleeding due to uterine leiomyoma. *J Obstet Gynaecol Res*. 2016;42(12):1744-1752. doi:10.1111/jog.13105