

Endometrial Cancer

Topic- based Uworld Questions

Block 1, 2, 7, 8



A 39-year-old woman, gravida 1 para 0 aborta 1, comes to the office for follow-up after an abnormal Pap test that showed atypical glandular cells. Two years ago, the patient had a first-trimester spontaneous abortion after conceiving via ovulation induction. Since then, she has had menses every 2-3 months with frequent intermenstrual spotting. The patient is not using contraception because she is trying to conceive. She does not use tobacco, alcohol, or illicit drugs. Vital signs are normal. BMI is 41 kg/m². Physical examination shows dark, velvety lesions on her neck folds and axilla. A urine pregnancy test is negative. Colposcopy and endocervical curettage are adequate and benign. Endometrial biopsy shows atypical endometrial hyperplasia. This patient's biopsy results are most closely associated with which of the following?

- A. Chronic human papillomavirus infection
- B. In utero diethylstilbestrol exposure
- C. Malignant transformation of a leiomyoma
- D. Proliferation of persistent trophoblastic tissue
- E. Unopposed estrogen exposure

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- A. Chronic human papillomavirus infection (2%)
- B. In utero diethylstilbestrol exposure (1%)
- C. Malignant transformation of a leiomyoma (0%)
- D. Proliferation of persistent trophoblastic tissue (2%)
- E. Unopposed estrogen exposure (94%)

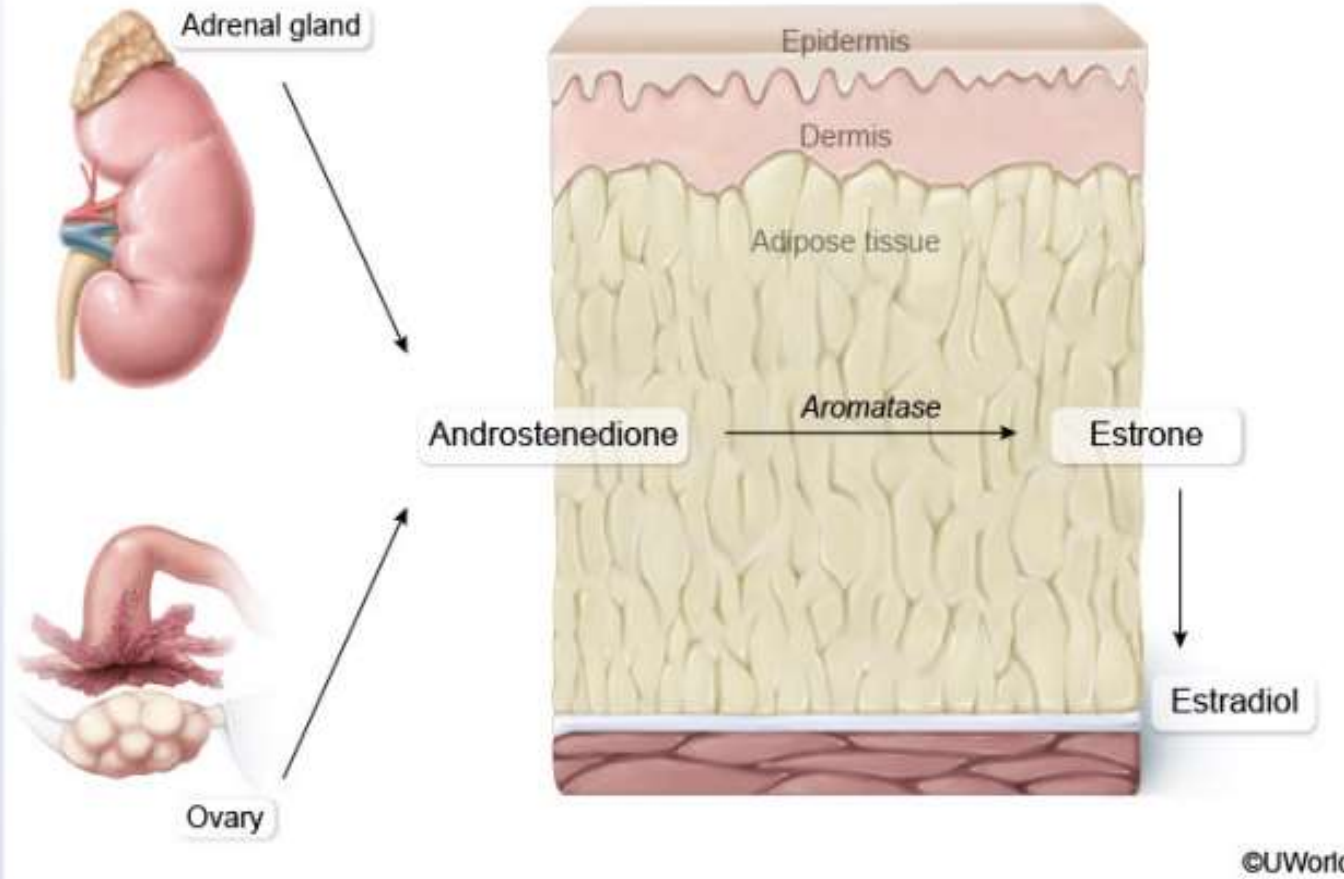
Omitted

Correct answer
E94%
Answered correctly02 secs
Time Spent02/23/2020
Last Updated

Explanation

Peripheral estrogen conversion in adipose tissue

Peripheral estrogen conversion in adipose tissue



This patient has **atypical glandular cells** on a Pap test, which could be due to abnormalities of either the endocervical canal or the endometrium. Therefore, **women age ≥ 35** with this Pap result require evaluation with colposcopy, endocervical curettage, and **endometrial biopsy**. This patient's endometrial biopsy shows **atypical endometrial hyperplasia**, a precursor to endometrial cancer. Most cases of endometrial cancer are due to prolonged **unopposed estrogen exposure** from obesity and **chronic anovulation** (eg. polycystic ovary syndrome), as seen in this patient.



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Estrogen causes proliferation of the endometrium to allow for implantation associated with pregnancy; progesterone decreases endometrial proliferation (by downregulating estrogen receptors and regulating mitosis). Therefore, in patients with unopposed estrogen exposure, continued endometrial proliferation is based on ovulatory status and resultant effects on progesterone:

- Ovulatory patients have increased progesterone, which decreases endometrial proliferation, thereby protecting the endometrium from hyperplasia.
- In contrast, anovulatory patients do not have an increase in progesterone. Therefore, **unregulated endometrial proliferation** results in hyperplasia.

In patients with obesity, this process can be compounded by the disproportionately high estrogen levels (from peripheral conversion of androgens to estrogens). Other risk factors for endometrial hyperplasia/cancer include nulliparity, early menarche, late menopause, and tamoxifen therapy, all of which increase uterine estrogen exposure.

(Choice A) Chronic infection with high-risk human papillomavirus (eg, types 16 and 18) is a risk factor for cervical adenocarcinoma, which may present as atypical glandular cells on Pap testing. This diagnosis is unlikely because this patient's colposcopy and endocervical curettage are benign.

(Choice B) Women exposed to diethylstilbestrol (DES) in utero are at increased risk of clear cell carcinoma of the cervix and vagina. In utero exposure is not associated with endometrial hyperplasia.

(Choice C) Uterine sarcoma can cause abnormal uterine bleeding; however, endometrial biopsy would typically show malignant stromal tissue rather than endometrial hyperplasia. Additionally, uterine sarcoma is not typically associated with malignant transformation of benign leiomyoma.

(Choice D) Gestational trophoblastic disease can present with persistent abnormal uterine bleeding and infertility after a spontaneous abortion; however, this diagnosis is unlikely in patients with a negative pregnancy test. In addition, endometrial biopsy would show proliferative

hyperplasia.

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Educational objective:

Atypical glandular cells on Pap testing may indicate endometrial hyperplasia/cancer, which is confirmed via endometrial biopsy. Endometrial hyperplasia/cancer is typically due to unopposed estrogen exposure (eg, obesity, chronic anovulation) and subsequent uncontrolled endometrial proliferation.

References

- [Polycystic ovary syndrome and risk of endometrial cancer: a mini-review.](#)
- [Diagnosis and management of endometrial cancer.](#)
- [Clinicopathological significance of atypical glandular cells on cervicovaginal Pap smears.](#)