Menopause

Topic- based Uworld Questions

Block 1, 2, 7, 8

A 44-year-old woman comes to the office due to night sweats and insomnia. For the past month, she has awakened completely soaked with perspiration almost every night. She has also had difficulty concentrating at work. The patient has had irregular menstrual periods for the past 6 months. She has a history of hypertension controlled with medication. The patient quit smoking 5 years ago and does not use illicit drugs. She typically has an alcoholic drink before bed. Temperature is 36.7 C (98 F), blood pressure is 140/90 mm Hg, pulse is 80/min, and respirations are 14/min. Skin is normal and there is no periorbital edema. The thyroid is nonenlarged and nontender, and there are no masses. Abdominal examination is normal. The uterus is small and anteverted, and the vagina has minimal rugation. There are no palpable adnexal masses. Urine pregnancy test is negative. Which of the following is the best next step in management of this patient?

A. Measure 24-hour urinary catecholamines
B. Measure serum TSH and FSH
C. Order urine toxicology screen
D. Prescribe oral hormone replacement
E. Provide reassurance and education about menopause

Submit

A 44-year-old woman comes to the office due to night sweats and insomnia. For the past month, she has awakened completely soaked with perspiration almost every night. She has also had difficulty concentrating at work. The patient has had irregular menstrual periods for the past 6 months. She has a history of hypertension controlled with medication. The patient quit smoking 5 years ago and does not use illicit drugs. She typically has an alcoholic drink before bed. Temperature is 36.7 C (98 F), blood pressure is 140/90 mm Hg, pulse is 80/min, and respirations are 14/min. Skin is normal and there is no periorbital edema. The thyroid is nonenlarged and nontender, and there are no masses. Abdominal examination is normal. The uterus is small and anteverted, and the vagina has minimal rugation. There are no palpable adnexal masses. Urine pregnancy test is negative. Which of the following is the best next step in management of this patient?

- A. Measure 24-hour urinary catecholamines (2%)
- ✓ B. Measure serum TSH and FSH (56%)
- C. Order urine toxicology screen (0%)
- D. Prescribe oral hormone replacement (6%)
- E. Provide reassurance and education about menopause (33%)

Omitted
Correct answer
B

56%
Answered correctly

01 sec
Time Spent

05/22/2020
Last Updated

Explanation

Menopause	

Menopause	
Clinical features	• Vasomotor symptoms • Oligomenorrhea/amenorrhea • Sleep disturbances • Decreased libido • Depression • Cognitive decline • Vaginal atrophy
Diagnosis	• Clinical manifestations • ↑ FSH
Treatment	• Topical vaginal estrogen • Systemic hormone replacement therapy

This patient has **vasomotor symptoms** (eg, hot flashes or "night sweats"), insomnia, and irregular menses that are consistent with either menopausal transition or hyperthyroidism. **Menopause** and **thyroid disorders** can present with overlapping clinical manifestations, and both are common in women age 40-50. Other symptoms of hyperthyroidism include heat intolerance, tremor, weight loss, hyperreflexia, diarrhea, hypertension, and palpitations. Patients with symptoms concerning for hyperthyroidism should be evaluated with a **serum TSH level**.

Menopause is defined as absent menses for 12 months. Menopausal transition and initial symptoms may begin a few years before the final menstrual period and commonly occur at age >45. During menopause, the circulating estrogen level decreases, resulting in a decrease in the feedback inhibition on the hypothalamic-pituitary axis. This results in an elevated **serum FSH level**, which can help confirm the diagnosis of menopause. Vasomotor symptoms may be treated with hormone replacement therapy after a thyroid etiology is excluded **(Choice D)**.

(Choice A) Measurement of 24-hour urinary catecholamines can be used to diagnose pheochromocytoma, an uncommon cause of night sweats and hypertension. Other symptoms of pheochromocytoma, including tachycardia, palpitations, and weight loss consistent with adrenergic hyperstimulation, are not seen in this patient.

This patient has **vasomotor symptoms** (eg, hot flashes or "night sweats"), insomnia, and irregular menses that are consistent with either menopausal transition or hyperthyroidism. **Menopause** and **thyroid disorders** can present with overlapping clinical manifestations, and both are common in women age 40-50. Other symptoms of hyperthyroidism include heat intolerance, tremor, weight loss, hyperreflexia, diarrhea, hypertension, and palpitations. Patients with symptoms concerning for hyperthyroidism should be evaluated with a **serum TSH level**.

Menopause is defined as absent menses for 12 months. Menopausal transition and initial symptoms may begin a few years before the final menstrual period and commonly occur at age >45. During menopause, the circulating estrogen level decreases, resulting in a decrease in the feedback inhibition on the hypothalamic-pituitary axis. This results in an elevated **serum FSH level**, which can help confirm the diagnosis of menopause. Vasomotor symptoms may be treated with hormone replacement therapy after a thyroid etiology is excluded **(Choice D)**.

(Choice A) Measurement of 24-hour urinary catecholamines can be used to diagnose pheochromocytoma, an uncommon cause of night sweats and hypertension. Other symptoms of pheochromocytoma, including tachycardia, palpitations, and weight loss consistent with adrenergic hyperstimulation, are not seen in this patient.

(Choice C) Urine toxicology screen identifies illicit drugs (eg, cocaine) that can cause diaphoresis and insomnia. These substances have no associated menstrual irregularities. This patient's symptoms are more suggestive of either menopause or hyperthyroidism.

(Choice E) Menopause can be diagnosed clinically in women over age 45 with a 12-month history of amenorrhea without other physiologic causes. This patient, however, has symptoms concerning for hyperthyroidism, and serum FSH and TSH levels should be measured.

Educational objective:
Vasomotor symptoms, insomnia, and irregular menses could be due to hyperthyroidism or menopause in middle-age women. Serum TSH and FSH levels should be measured in patients with these symptoms.

References

- Hyperthyroidism.
- Climacteric symptoms in middle-aged women with chronic somatic diseases.

A 53-year-old woman comes to the office for a routine annual examination. Her last menstrual period was 2 years ago. The patient has hot flashes throughout the day. She awakens several times each night drenched with sweat. The patient has tried weight loss and over-the-counter medications to manage these symptoms, but they have not improved. She has hypertension and type 2 diabetes mellitus controlled with diet and exercise. The patient's mother had a bilateral hip replacement after a fall at age 77. Blood pressure is 124/80 mm Hg and pulse is 76/min. BMI is 28 kg/m^2. Cardiopulmonary examination is normal. On pelvic examination, the uterus is small and nontender, and there are no adnexal masses. The extremities have 2+ peripheral pulses. HbA1c is 6.9%. Which of the following is an indication for systemic estrogen/progestin replacement therapy in this patient?

- A. Coronary heart disease prevention
- B. Endometrial cancer risk reduction
- C. Osteoporosis prevention
- D. Reduction of vasomotor symptoms
- E. There is no indication

Submit

A 53-year-old woman comes to the office for a routine annual examination. Her last menstrual period was 2 years ago. The patient has hot flashes throughout the day. She awakens several times each night drenched with sweat. The patient has tried weight loss and over-the-counter medications to manage these symptoms, but they have not improved. She has hypertension and type 2 diabetes mellitus controlled with diet and exercise. The patient's mother had a bilateral hip replacement after a fall at age 77. Blood pressure is 124/80 mm Hg and pulse is 76/min. BMI is 28 kg/m^2. Cardiopulmonary examination is normal. On pelvic examination, the uterus is small and nontender, and there are no adnexal masses. The extremities have 2+ peripheral pulses. HbA1c is 6.9%. Which of the following is an indication for systemic estrogen/progestin replacement therapy in this patient?

- A. Coronary heart disease prevention (1%)
- B. Endometrial cancer risk reduction (1%)
- C. Osteoporosis prevention (16%)
- ✓ D. Reduction of vasomotor symptoms (66%)
- E. There is no indication (13%)

Omitted
Correct answer
D

66%
Answered correctly

02 secs
Time Spent

02/11/2020
Last Updated

Explanation

Menopause	

Menopause	
Clinical features	• Vasomotor symptoms • Oligomenorrhea/amenorrhea • Sleep disturbances • Decreased libido • Depression • Cognitive decline • Vaginal atrophy
Diagnosis	• Clinical manifestations • ↑ FSH
Treatment	• Topical vaginal estrogen • Systemic hormone replacement therapy

Menopause, absent menses for 12 months, occurs at a median age of 51 when the loss of ovarian function leads to hypoestrogenemia and its sequelae: vasomotor symptoms (eg, hot flashes, night sweats, sleep disturbances), vulvovaginal atrophy, and osteoporosis. Management of hot flashes depends on symptom severity and patient risk factors. Patients with mild symptoms that do not interfere with daily activities are managed with lifestyle modification (eg, wearing layers, weight loss). Severe hot flashes typically require pharmacologic therapy, and **hormone replacement therapy** (HRT) is the first-line treatment **(Choice E)**.

The only current indication for HRT is **vasomotor symptoms** in women age <60 who have undergone menopause within the past 10 years. HRT was previously used for chronic disease prevention, but it is no longer recommended in the prevention of coronary heart disease or osteoporosis due to the associated risks of HRT (eg, thromboembolism) **(Choices A and C)**. Contraindications to HRT include a personal history of coronary heart disease, thromboembolism, transient ischemic attack or stroke, breast cancer, and endometrial cancer. Patients with contraindications to HRT are typically managed with nonhormonal therapy (eg, selective serotonin reuptake inhibitors).

(Choice B) HRT is not indicated for endometrial cancer risk reduction. The estrogen component of HRT treats menopausal symptoms, but if

Menopause, absent menses for 12 months, occurs at a median age of 51 when the loss of ovarian function leads to hypoestrogenemia and its sequelae: vasomotor symptoms (eg, hot flashes, night sweats, sleep disturbances), vulvovaginal atrophy, and osteoporosis. Management of hot flashes depends on symptom severity and patient risk factors. Patients with mild symptoms that do not interfere with daily activities are managed with lifestyle modification (eg, wearing layers, weight loss). Severe hot flashes typically require pharmacologic therapy, and **hormone replacement therapy** (HRT) is the first-line treatment **(Choice E)**.

The only current indication for HRT is **vasomotor symptoms** in women age <60 who have undergone menopause within the past 10 years. HRT was previously used for chronic disease prevention, but it is no longer recommended in the prevention of coronary heart disease or osteoporosis due to the associated risks of HRT (eg, thromboembolism) **(Choices A and C)**. Contraindications to HRT include a personal history of coronary heart disease, thromboembolism, transient ischemic attack or stroke, breast cancer, and endometrial cancer. Patients with contraindications to HRT are typically managed with nonhormonal therapy (eg, selective serotonin reuptake inhibitors).

(Choice B) HRT is not indicated for endometrial cancer risk reduction. The estrogen component of HRT treats menopausal symptoms, but if unopposed (ie, no progesterone), it can result in endometrial proliferation and hyperplasia. Therefore, in patients with a uterus, HRT with a progestin component is required for endometrial protection.

Educational objective:
Hormone replacement therapy is indicated in the treatment of vasomotor symptoms (eg, hot flashes, night sweats) in women age <60 who have undergone menopause within the past 10 years.

References

- Managing the menopause: an update.
- Hormone therapy for relieving postmenopausal vasomotor symptoms: a systematic review.

Obstetrics & Gynecology	Female Reproductive System & Breast	Menopause
Subject	System	Topic

A 65-year-old woman comes to the office to follow up for osteoporosis, which was diagnosed by a screening bone mineral density scan. The patient was prescribed alendronate, but she stopped taking it due to intense stomach pain from the medication. She saw a television advertisement about raloxifene and is interested in this treatment option. The patient has a history of deep venous thrombosis in her left leg while on an oral contraceptive at age 38 that was treated with several months of heparin. She currently takes medications for hypertension and hyperlipidemia diagnosed after a minor heart attack at age 63. Her mother had breast cancer at age 52 and died from ovarian cancer at age 61. A maternal aunt died from endometrial cancer at age 72. Blood pressure is 125/80 mm Hg, and physical examination is normal. Which of the following is a contraindication to raloxifene in this patient?

A. History of breast cancer in her mother
B. History of endometrial cancer in her maternal aunt
C. History of myocardial infarction
D. History of ovarian cancer in her mother
E. History of venous thrombosis

Submit

A 65-year-old woman comes to the office to follow up for osteoporosis, which was diagnosed by a screening bone mineral density scan. The patient was prescribed alendronate, but she stopped taking it due to intense stomach pain from the medication. She saw a television advertisement about raloxifene and is interested in this treatment option. The patient has a history of deep venous thrombosis in her left leg while on an oral contraceptive at age 38 that was treated with several months of heparin. She currently takes medications for hypertension and hyperlipidemia diagnosed after a minor heart attack at age 63. Her mother had breast cancer at age 52 and died from ovarian cancer at age 61. A maternal aunt died from endometrial cancer at age 72. Blood pressure is 125/80 mm Hg, and physical examination is normal. Which of the following is a contraindication to raloxifene in this patient?

A. History of breast cancer in her mother (7%)
B. History of endometrial cancer in her maternal aunt (8%)
C. History of myocardial infarction (8%)
D. History of ovarian cancer in her mother (3%)
✓ E. History of venous thrombosis (70%)

Omitted
Correct answer
E

70%
Answered correctly

01 sec
Time Spent

02/04/2020
Last Updated

Explanation

Selective estrogen receptor modulators	

Explanation

Selective estrogen receptor modulators	
Drugs	• Tamoxifen • Raloxifene
Mechanism of action	• Competitive inhibitor of estrogen binding • Mixed agonist/antagonist action
Indications	• Prevention of breast cancer in high-risk patients • Tamoxifen: adjuvant treatment of breast cancer • Raloxifene: postmenopausal osteoporosis
Adverse effects	• Hot flashes • Venous thromboembolism • Endometrial hyperplasia & carcinoma (tamoxifen only)

Selective estrogen receptor modulators (SERMs) are a class of nonsteroidal compounds that exhibit **estrogen agonist and antagonist** properties in a tissue-specific fashion. The 2 most frequently used SERMs are raloxifene and tamoxifen. Raloxifene exhibits estrogen agonist activity on the bone and decreases post-menopausal osteoporosis. Although less effective than alendronate, **raloxifene** is frequently used for **osteoporosis** management in postmenopausal women who cannot tolerate bisphosphonates or are at high **risk for invasive breast cancer**.

All medicines with estrogen agonist activity, including oral contraceptives, hormone replacement therapy, and all SERMs, increase the risk for **venous thromboembolism** (VTE). Consequently, current or prior VTE disorders (eg, pulmonary embolism, deep vein thrombosis, retinal vein thrombosis) are contraindications to both raloxifene and tamoxifen use.

(Choices A and C) SERMs have estrogen antagonist activity in the breast and decrease the incidence of malignancy. A family history of breast cancer is a potential indication, rather than a contraindication, for raloxifene use. Raloxifene also decreases total and low-density lipoprotein cholesterol levels, although it neither increases nor decreases the risk of coronary heart disease. In contrast, a history of coronary artery disease

Selective estrogen receptor modulators (SERMs) are a class of nonsteroidal compounds that exhibit **estrogen agonist and antagonist** properties in a tissue-specific fashion. The 2 most frequently used SERMs are raloxifene and tamoxifen. Raloxifene exhibits estrogen agonist activity on the bone and decreases post-menopausal osteoporosis. Although less effective than alendronate, **raloxifene** is frequently used for **osteoporosis** management in postmenopausal women who cannot tolerate bisphosphonates or are at high **risk for invasive breast cancer**.

All medicines with estrogen agonist activity, including oral contraceptives, hormone replacement therapy, and all SERMs, increase the risk for **venous thromboembolism** (VTE). Consequently, current or prior VTE disorders (eg, pulmonary embolism, deep vein thrombosis, retinal vein thrombosis) are contraindications to both raloxifene and tamoxifen use.

(Choices A and C) SERMs have estrogen antagonist activity in the breast and decrease the incidence of malignancy. A family history of breast cancer is a potential indication, rather than a contraindication, for raloxifene use. Raloxifene also decreases total and low-density lipoprotein cholesterol levels, although it neither increases nor decreases the risk of coronary heart disease. In contrast, a history of coronary artery disease or estrogen-receptor-positive breast cancer is a contraindication for treatment of menopausal symptoms with hormone replacement therapy (due to unopposed estrogen activity).

(Choice B) Raloxifene has estrogen antagonist activity on the uterus and does not increase the risk for endometrial hyperplasia or cancer. As a result, a family history of uterine cancer is not a contraindication to raloxifene use. In contrast, tamoxifen is associated with an increased risk of uterine hyperplasia and cancer.

(Choice D) SERMs are not associated with an increased incidence of ovarian cancer. Family history of ovarian cancer is not a contraindication to raloxifene or tamoxifen use. Women at high risk for ovarian cancer can be offered oral contraceptives or, after childbearing is finished, a prophylactic oophorectomy.

Educational objective:
Raloxifene is a selective estrogen receptor modulator with estrogen antagonist activity in the breast and uterus and agonist activity in the bone. It is used to treat osteoporosis in women at high risk for breast cancer. Contraindications include a history of venous thromboembolism.

References

- Selective estrogen receptor modulators in clinical practice: a safety overview.

A 49-year-old woman comes to the office for evaluation of decreased interest in sexual intercourse for the past 6 months. The patient has been married for 24 years and states that this is becoming a problem in her marriage. She has had a decreased libido for the past 6 months, and more recently, is also having pain with intercourse. The last few attempts at intercourse were so painful that the patient is now avoiding all sexual intimacy. Her only surgery was a laparoscopic hysterectomy at age 29 for severe endometriosis. She takes no daily medications and drinks a glass of wine most nights. Temperature is 36.7 C (98 F), blood pressure is 120/70 mm Hg, and pulse is 78/min. BMI is 23 kg/m^2. On pelvic examination, the vulva has scant pubic hair, and the vulvovaginal mucosa is pale, with clear vaginal discharge. The cervix and uterus are surgically absent, and the ovaries are small and nontender bilaterally. The remainder of the examination is unremarkable. Which of the following is most likely to establish the diagnosis in this patient?

A. Diagnostic laparoscopy
B. Patient Health Questionnaire-9 depression screen
C. Serum FSH level
D. Serum testosterone level
E. Vulvar biopsy
F. Wet mount microscopy

Submit

A 49-year-old woman comes to the office for evaluation of decreased interest in sexual intercourse for the past 6 months. The patient has been married for 24 years and states that this is becoming a problem in her marriage. She has had a decreased libido for the past 6 months, and more recently, is also having pain with intercourse. The last few attempts at intercourse were so painful that the patient is now avoiding all sexual intimacy. Her only surgery was a laparoscopic hysterectomy at age 29 for severe endometriosis. She takes no daily medications and drinks a glass of wine most nights. Temperature is 36.7 C (98 F), blood pressure is 120/70 mm Hg, and pulse is 78/min. BMI is 23 kg/m^2. On pelvic examination, the vulva has scant pubic hair, and the vulvovaginal mucosa is pale, with clear vaginal discharge. The cervix and uterus are surgically absent, and the ovaries are small and nontender bilaterally. The remainder of the examination is unremarkable. Which of the following is most likely to establish the diagnosis in this patient?

- A. Diagnostic laparoscopy (1%)
- B. Patient Health Questionnaire-9 depression screen (4%)
- ✓ C. Serum FSH level (86%)
- D. Serum testosterone level (3%)
- E. Vulvar biopsy (3%)
- F. Wet mount microscopy (0%)

Omitted
Correct answer
C

86%
Answered correctly

02 secs
Time Spent

06/29/2020
Last Updated

Explanation

Menopause	
Clinical features	• Vasomotor symptoms • Oligomenorrhea/amenorrhea • Sleep disturbances • Decreased libido • Depression • Cognitive decline • Vaginal atrophy
Diagnosis	• Clinical manifestations • ↑ FSH
Treatment	• Topical vaginal estrogen • Systemic hormone replacement therapy

This patient has 6 months of decreased sexual libido and **dyspareunia** (ie, pain with intercourse), which may have various medical or psychosocial etiologies. These symptoms, along with the pale vaginal mucosa (consistent with **vulvovaginal atrophy**), are most likely due to **menopause**. Most women undergo menopause around age 51 due to age-related ovarian follicle depletion and decreased estrogen levels, resulting in vasomotor symptoms (eg, hot flashes, night sweats), vulvovaginal atrophy, and amenorrhea.

In general, menopause is a clinical diagnosis defined as cessation of menses for ≥12 months in women with previously regular menstrual cycles. In women with typical menopausal symptoms and cessation of menses for ≥12 months, no additional evaluation is required. However, in women **without previously normal menstrual cycles** (eg, prior hysterectomy, endometrial ablation), the diagnosis of menopause cannot be made clinically because vasomotor symptoms and vulvovaginal atrophy can be due to other etiologies (eg, thyroid disorder, malignancy). Therefore, these patients require an **elevated serum FSH level** for the diagnosis of menopause.

(Choice A) Diagnostic laparoscopy is indicated in patients with dyspareunia due to suspected endometriosis (eg, dysmenorrhea, pain with

This patient has 6 months of decreased sexual libido and **dyspareunia** (ie, pain with intercourse), which may have various medical or psychosocial etiologies. These symptoms, along with the pale vaginal mucosa (consistent with **vulvovaginal atrophy**), are most likely due to **menopause**. Most women undergo menopause around age 51 due to age-related ovarian follicle depletion and decreased estrogen levels, resulting in vasomotor symptoms (eg, hot flashes, night sweats), vulvovaginal atrophy, and amenorrhea.

In general, menopause is a clinical diagnosis defined as cessation of menses for ≥12 months in women with previously regular menstrual cycles. In women with typical menopausal symptoms and cessation of menses for ≥12 months, no additional evaluation is required. However, in women **without previously normal menstrual cycles** (eg, prior hysterectomy, endometrial ablation), the diagnosis of menopause cannot be made clinically because vasomotor symptoms and vulvovaginal atrophy can be due to other etiologies (eg, thyroid disorder, malignancy). Therefore, these patients require an **elevated serum FSH level** for the diagnosis of menopause.

(Choice A) Diagnostic laparoscopy is indicated in patients with dyspareunia due to suspected endometriosis (eg, dysmenorrhea, pain with defecation). This patient's dyspareunia is more likely due to vulvovaginal atrophy related to menopause.

(Choice B) The Patient Health Questionnaire-9 depression screen assesses for depression, which is a common cause of decreased libido. However, depression would not explain this patient's vulvovaginal atrophy.

(Choice D) Serum testosterone level does not affect menopausal status and does not correlate with sexual function in women; therefore, it is not measured in patients with menopausal symptoms or decreased libido.

(Choice E) Vulvar biopsy is used to evaluate for possible vulvar cancer in patients with vulvar lesions (that may be associated with dyspareunia). This patient has no vulvar lesions.

(Choice F) Wet mount microscopy is used to evaluate abnormal (eg, malodorous, bloody) vaginal discharge in patients with vaginitis, which can cause dyspareunia. This patient's clear vaginal discharge is normal.

Educational objective:
Menopause is a clinical diagnosis (ie, cessation of menses for ≥12 months) that usually does not require further evaluation in patients with previously normal menses and typical menopausal symptoms (eg, dyspareunia due to vulvovaginal atrophy). Diagnosis in women without previously normal menses (eg, prior hysterectomy) is confirmed by an elevated serum FSH level.

References

A 48-year-old woman comes to the clinic due to dyspareunia, which has worsened over the last 4 months. Five years ago, the patient underwent radiation and chemotherapy for stage II cervical cancer. She has not been sexually active for several years due to fear of cervical cancer recurrence. Now the patient has a new partner and is using over-the-counter lubricants during intercourse but still experiences pain with penetration. She has had no postcoital bleeding, dysuria, or abnormal vaginal discharge. The patient has a 20-pack-year smoking history. She has not had a menstrual period since completing radiation therapy. Vital signs are normal. Examination shows thin vulvar skin with shrinkage of clitoral tissue. The vaginal introitus is narrow, and the vaginal mucosa appears pale. The cervix appears scarred consistent with postradiation changes but has no raised, nodular, or friable lesions. Which of the following is the most likely cause of this patient's condition?

- A. Atrophic vaginitis
- B. Lichen planus
- C. Lichen sclerosus
- D. Recurrent cervical cancer
- E. Vulvar intraepithelial neoplasia
- F. Vulvodynia

Submit

A 48-year-old woman comes to the clinic due to dyspareunia, which has worsened over the last 4 months. Five years ago, the patient underwent radiation and chemotherapy for stage II cervical cancer. She has not been sexually active for several years due to fear of cervical cancer recurrence. Now the patient has a new partner and is using over-the-counter lubricants during intercourse but still experiences pain with penetration. She has had no postcoital bleeding, dysuria, or abnormal vaginal discharge. The patient has a 20-pack-year smoking history. She has not had a menstrual period since completing radiation therapy. Vital signs are normal. Examination shows thin vulvar skin with shrinkage of clitoral tissue. The vaginal introitus is narrow, and the vaginal mucosa appears pale. The cervix appears scarred consistent with postradiation changes but has no raised, nodular, or friable lesions. Which of the following is the most likely cause of this patient's condition?

- ✓ A. Atrophic vaginitis (76%)
- B. Lichen planus (2%)
- C. Lichen sclerosus (15%)
- D. Recurrent cervical cancer (0%)
- E. Vulvar intraepithelial neoplasia (0%)
- F. Vulvodynia (5%)

Omitted
Correct answer
A

76%
Answered correctly

02 secs
Time Spent

01/21/2020
Last Updated

Explanation

Genitourinary syndrome of menopause	
Symptoms	• Vulvovaginal dryness, irritation, pruritus • Dyspareunia • Vaginal bleeding • Urinary incontinence, recurrent urinary tract infection • Pelvic pressure
Physical examination	• Narrowed introitus • Pale mucosa, ↓ elasticity, ↓ rugae • Petechiae, fissures • Loss of labial volume
Treatment	• Vaginal moisturizer & lubricant • Topical vaginal estrogen

This patient has **atrophic vaginitis** (or the genitourinary syndrome of menopause) from medically-induced menopause due to radiation and chemotherapy treatment for cervical cancer resulting in ovarian follicle depletion. Estrogen maintains the moisture, blood flow, and collagen content (eg, elasticity, turgor) of the vulvovaginal tissues (eg, vagina, vulva, urethra). Patients with **low estrogen levels** eventually develop dryness and **decreased blood flow and elasticity** in these estrogen-dependent tissues.

Symptoms of estrogen deficiency are due to **thinning of the vulvar skin** (eg, irritation), narrowing of the vaginal introitus (eg, **dyspareunia**), and loss of natural lubrication (eg, **dryness**). Physical examination findings include pale, easily-denuded, retracted, **atrophic vulvovaginal epithelium** (eg, clitoral shrinkage). First-line treatment includes over-the-counter lubricants or moisturizers. Persistent or severe symptoms are treated with **vaginal estrogen**.

(Choice B) Lichen planus is a chronic, inflammatory skin dystrophy that results in glazed, brightly erythematous, vulvar lesions with a purple hue that may be overlaid by white reticular lines (ie, Wickham striae).

(Choice C) Patients with lichen sclerosus have thin, wrinkled vulvar skin that can form into thickened white plaques that eventually obliterate the

This patient has **atrophic vaginitis** (or the genitourinary syndrome of menopause) from medically-induced menopause due to radiation and chemotherapy treatment for cervical cancer resulting in ovarian follicle depletion. Estrogen maintains the moisture, blood flow, and collagen content (eg, elasticity, turgor) of the vulvovaginal tissues (eg, vagina, vulva, urethra). Patients with **low estrogen levels** eventually develop dryness and **decreased blood flow and elasticity** in these estrogen-dependent tissues.

Symptoms of estrogen deficiency are due to **thinning of the vulvar skin** (eg, irritation), narrowing of the vaginal introitus (eg, **dyspareunia**), and loss of natural lubrication (eg, **dryness**). Physical examination findings include pale, easily-denuded, retracted, **atrophic vulvovaginal epithelium** (eg, clitoral shrinkage). First-line treatment includes over-the-counter lubricants or moisturizers. Persistent or severe symptoms are treated with **vaginal estrogen**.

(Choice B) Lichen planus is a chronic, inflammatory skin dystrophy that results in glazed, brightly erythematous, vulvar lesions with a purple hue that may be overlaid by white reticular lines (ie, Wickham striae).

(Choice C) Patients with lichen sclerosus have thin, wrinkled vulvar skin that can form into thickened white plaques that eventually obliterate the labia majora and minora, scarring the normal external landmarks. In contrast to atrophic vaginitis, lichen sclerosus does not affect the vagina.

(Choice D) Recurrent cervical cancer typically presents with abnormal bleeding from raised, friable cervical nodules (not seen in this patient).

(Choice E) Vulvar intraepithelial neoplasia (VIN) creates asymptomatic or pruritic vulvar lesions, particularly in smokers. VIN typically appears as raised, multifocal vulvar lesions (eg, white, erythematous, hyperpigmented), which are not seen in this patient.

(Choice F) Vulvodynia causes dyspareunia due to a sharp, burning pain on the vulvar vestibule often triggered by touch (eg, positive Q-tip test). Patients may have vestibular erythema but no associated vaginal tissue narrowing or clitoral tissue shrinkage.

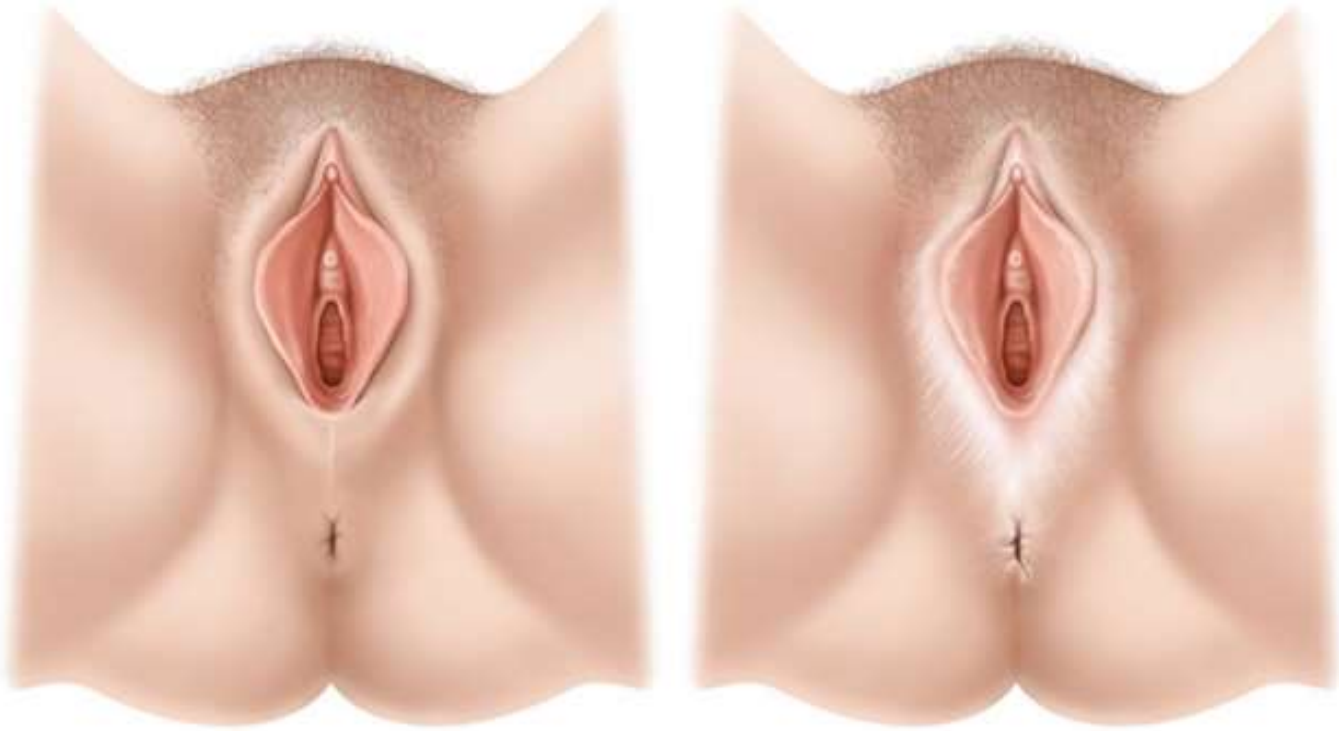
Educational objective:
Atrophic vaginitis (genitourinary syndrome of menopause) is due to low estrogen levels, which cause decreased vulvovaginal tissue elasticity and blood flow. Patients may have resultant dyspareunia due to narrowing of the vaginal introitus and dryness from loss of natural lubrication. Treatment is with lubricants or moisturizers; vaginal estrogen is used for persistent or severe symptoms.

References

- Vulvar and vaginal atrophy: physiology, clinical presentation, and treatment considerations

Exhibit Display

Lichen sclerosus



Normal

Lichen sclerosus

Pale thin tissue & perianal thickening with fissures

Zoom In | Zoom Out | Reset | Add To New Card | Existing Card

- Vulvar and vaginal atrophy: physiology, clinical presentation, and treatment considerations