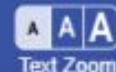
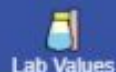


Q.1



A 29-year-old nulligravid woman comes to the office due to left breast pain. She noticed a "lump" in the left breast last week while performing a breast examination in the shower. The lump is painful to the touch to the extent that wearing a bra is uncomfortable. The patient is concerned about this finding because her cousin, who was recently diagnosed with breast cancer, is experiencing many adverse effects of chemotherapy. The patient has no history of medical problems or surgeries. She occasionally smokes cigarettes and drinks 2-3 beers a week at social gatherings. Vital signs are normal. Physical examination reveals a 4 x 5 x 6-cm mobile mass in her left breast. Ultrasound shows a well-circumscribed mass with posterior acoustic enhancement. No echogenic debris or solid components are seen. Needle aspiration yields clear fluid with resolution of the mass. Which of the following is the best approach in management of this patient?

- ☐ A. Order breast MRI
- ☐ B. Order mammogram
- ☐ C. Perform a core biopsy
- ☐ D. Repeat breast examination in 1 year
- ☐ E. Repeat breast examination in 2 months
- ☐ F. Send the fluid for culture

Submit



Item 15 of 39

Question Id: 2611



Mark



Previous



Next



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Lab Values



Notes



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Settings

A 29-year-old nulligravid woman comes to the office due to left breast pain. She noticed a "lump" in the left breast last week while performing a breast examination in the shower. The lump is painful to the touch to the extent that wearing a bra is uncomfortable. The patient is concerned about this finding because her cousin, who was recently diagnosed with breast cancer, is experiencing many adverse effects of chemotherapy. The patient has no history of medical problems or surgeries. She occasionally smokes cigarettes and drinks 2-3 beers a week at social gatherings. Vital signs are normal. Physical examination reveals a 4 x 5 x 6-cm mobile mass in her left breast. Ultrasound shows a well-circumscribed mass with posterior acoustic enhancement. No echogenic debris or solid components are seen. Needle aspiration yields clear fluid with resolution of the mass. Which of the following is the best approach in management of this patient?

- ☐ A. Order breast MRI (0%)
- ☐ B. Order mammogram (3%)
- ☐ C. Perform a core biopsy (2%)
- ☐ D. Repeat breast examination in 1 year (25%)
- ☒ E. Repeat breast examination in 2 months (46%)
- ☐ F. Send the fluid for culture (21%)

تنشيط

Omitted

Correct answer

E



46%

Answered correctly



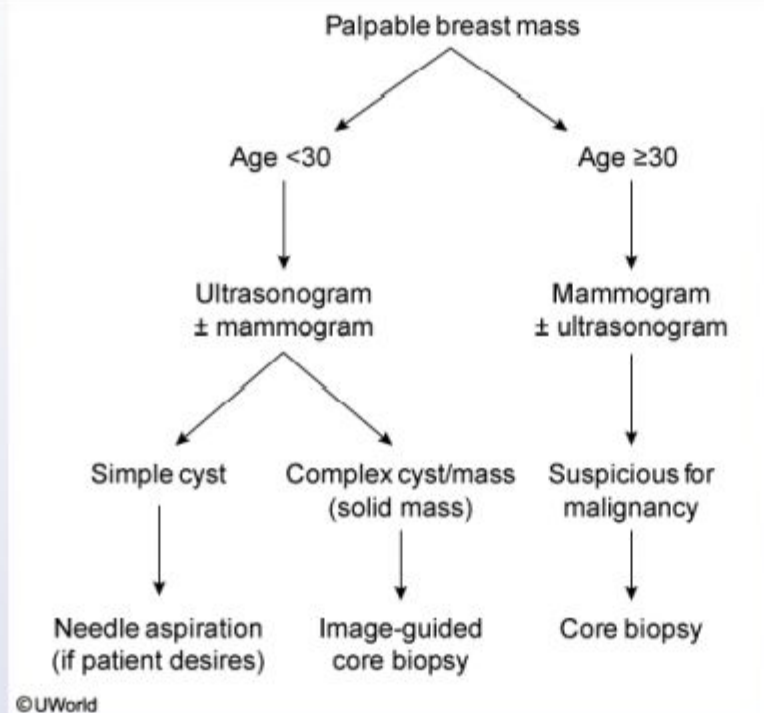
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04/15/2020

Last Updated



A **tender, mobile mass** in a young patient is most likely benign. In a patient age <30 with a clinically benign mass, breast **ultrasound** is the first-line imaging study. This patient's ultrasound shows posterior acoustic enhancement (indicative of **fluid**) and no echogenic debris or solid components; these features are consistent with a **simple breast cyst**.

The presentation of a simple breast cyst is variable, ranging from no symptoms to severe, localized pain. Symptomatic patients may benefit from **aspiration**, which should yield **clear fluid** and result in the disappearance of the mass and thereby confirm the diagnosis. As cystic fluid can reaccumulate, the patient should return in 2-4 months for a follow-up clinical breast examination. If the patient has no further symptoms or signs of



Item 15 of 39

Question ID: 2611



Mark



Previous



Next



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Lab Values



Notes



Calculator



Reverse Color



Text Zoom



Settings

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The presentation of a simple breast cyst is variable, ranging from no symptoms to severe, localized pain. Symptomatic patients may benefit from **aspiration**, which should yield **clear fluid** and result in the disappearance of the mass and thereby confirm the diagnosis. As cystic fluid can reaccumulate, the patient should return in 2-4 months for a follow-up clinical breast examination. If the patient has no further symptoms or signs of recurrence, annual screening (**Choice D**) can be resumed.

(**Choice A**) Breast MRI is performed in patients with known cancer to evaluate for disease recurrence and to screen for breast cancer in high-risk patients (eg, *BRCA* carrier, first-degree relative of known *BRCA* carrier). MRI is expensive and unnecessary for breast cyst surveillance.

(**Choice B**) Screening mammography in women age <30 is generally not recommended as the relatively dense breast tissue in this population may impede adequate visualization of any masses present. In addition, radiation exposure from mammography is a potential risk factor for breast cancer in young women.

(**Choice C**) A core biopsy provides a tissue sample and is indicated if imaging reveals signs of a complicated or complex cyst (eg, echogenic debris, thick septa, solid components). It should also be considered if the mass recurs or does not disappear after aspiration.

(**Choice F**) Although a breast abscess is a painful mass that may improve with needle aspiration, fever and malaise would likely be present and aspiration would yield pus rather than clear fluid. Therefore, a culture of fluid from the breast cyst would likely be low yield.

Educational objective:

A simple breast cyst is a common, benign, palpable breast mass in women that has no echogenic debris or solid components on ultrasound. Aspiration can provide relief to a painful mass and would yield clear fluid. Close interval follow-up with clinical breast examination is indicated to monitor for recurrence.

Q.2



A 42-year-old nulligravid woman comes to the office with intermittent blood staining the left side of her bra. She is extremely worried because her 66-year-old mother was recently diagnosed with breast cancer. The patient performs monthly breast self-examinations and has not felt any lumps. She has a history of type 2 diabetes for which she takes insulin and metformin. The patient does not smoke cigarettes and only drinks alcohol on rare social occasions. Physical examination shows no palpable breast masses. Mammography shows no masses or calcifications. Which of the following is the most likely diagnosis?

- ☐ A. Ductal carcinoma in situ
- ☐ B. Fat necrosis
- ☐ C. Fibroadenoma
- ☐ D. Fibrocystic changes of the breast
- ☐ E. Inflammatory carcinoma
- ☐ F. Intraductal papilloma
- ☐ G. Lobular breast carcinoma
- ☐ H. Paget disease of the breast
- ☐ I. Pituitary adenoma

Submit

A 42-year-old nulligravid woman comes to the office with intermittent blood staining the left side of her bra. She is extremely worried because her 66-year-old mother was recently diagnosed with breast cancer. The patient performs monthly breast self-examinations and has not felt any lumps. She has a history of type 2 diabetes for which she takes insulin and metformin. The patient does not smoke cigarettes and only drinks alcohol on rare social occasions. Physical examination shows no palpable breast masses. Mammography shows no masses or calcifications. Which of the following is the most likely diagnosis?

- ☐ A. Ductal carcinoma in situ (5%)
- ☐ B. Fat necrosis (1%)
- ☐ C. Fibroadenoma (0%)
- ☐ D. Fibrocystic changes of the breast (1%)
- ☐ E. Inflammatory carcinoma (1%)
- ☒ F. Intraductal papilloma (82%)
- ☐ G. Lobular breast carcinoma (0%)
- ☐ H. Paget disease of the breast (5%)
- ☐ I. Pituitary adenoma (0%)

Intraductal papilloma	
Clinical features	• Unilateral bloody nipple discharge • No associated mass or lymphadenopathy
Management	• Mammography & ultrasound • Biopsy, +/- excision

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Pathologic nipple discharge is typically unilateral, bloody, or serous and may be accompanied by additional breast abnormalities. The most common cause of **unilateral bloody discharge** without a coexisting breast mass is an **intraductal papilloma**. Typically, this benign condition is nonpalpable on clinical breast examination due to the small size of the papilloma inside the duct. Although this patient's family history of breast cancer increases her risk of breast malignancy, normal examination and negative imaging findings are reassuring and confirm the diagnosis.

Diagnostic workup for pathologic (eg, unilateral and/or bloody) nipple discharge should begin with **mammography** to rule out carcinoma even without the presence of a palpable breast mass. With small intraductal papillomas, mammography is often normal. Ultrasound is also indicated for evaluation of ductal pathology and may demonstrate a dilated duct due to the space-occupying papilloma.

(Choice A) Although intraductal papillomas may contain foci of ductal carcinoma in situ, this condition typically presents as microcalcifications on mammography, which are absent in this patient.

(Choice B) Fat necrosis of the breast is a benign condition usually due to previous trauma and typically presents as a firm, irregularly shaped mass with findings of oil cysts on mammography. Nipple discharge is not typical.

(Choice C) A fibroadenoma presents as a solitary, painless, firm, and mobile breast mass averaging 2 cm in size, and would be noted on clinical breast examination and mammography. It is not associated with nipple discharge.

(Choice D) Fibrocystic changes of the breast are very common in premenopausal patients. Classic presentation is a patient with cyclic bilateral

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Pathologic nipple discharge is typically unilateral, bloody, or serous and may be accompanied by additional breast abnormalities. The most common cause of **unilateral bloody discharge** without a coexisting breast mass is an **intraductal papilloma**. Typically, this benign condition is nonpalpable on clinical breast examination due to the small size of the papilloma inside the duct. Although this patient's family history of breast cancer increases her risk of breast malignancy, normal examination and negative imaging findings are reassuring and confirm the diagnosis.

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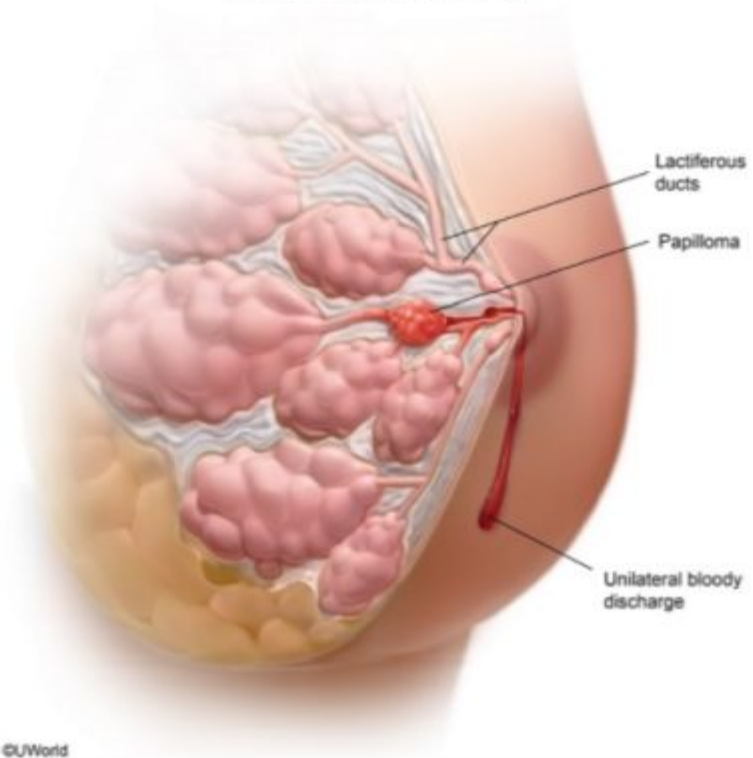
(Choice D) Fibrocystic changes of the breast are very common in premenopausal patients. Classic presentation is a patient with cyclic bilateral breast pain (eg, mastalgia) and diffuse nodularity on breast examination. Nipple discharge is not typical but, if present, is nonbloody (eg, physiologic). This condition is unlikely in this patient without palpable breast masses and mastalgia.

(Choice E) Diffuse breast erythema with edema and peau d'orange appearance are the hallmark features of **inflammatory breast cancer (IBC)**. Although nipple discharge may be present with inflammatory breast cancer, this patient has no other breast abnormalities on examination and no imaging evidence of malignancy (eg, mass, calcification, parenchymal distortion) on mammography.

(Choice G) Lobular breast carcinoma typically presents as a fixed palpable breast mass with irregular borders and can often be bilateral. Normal breast examination and negative mammography rule out this condition due to lack of a lesion or calcifications.

(Choice H) *Paget disease of the breast* is a form of ductal carcinoma that primarily presents with eczematous nipple changes (eg, flaking

Intraductal papilloma



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for evaluation of ductal pathology and may demonstrate a dilated duct due to the space-occupying papilloma.

(Choice A) Although intraductal papillomas may contain foci of ductal carcinoma in situ, this condition typically presents as microcalcifications on mammography, which are absent in this patient.

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(Choice E) Diffuse breast erythema with edema and peau d'orange appearance are the hallmark features of [inflammatory breast cancer \(IBC\)](#). Although nipple discharge may be present with inflammatory breast cancer, this patient has no other breast abnormalities on examination and no imaging evidence of malignancy (eg, mass, calcification, parenchymal distortion) on mammography.

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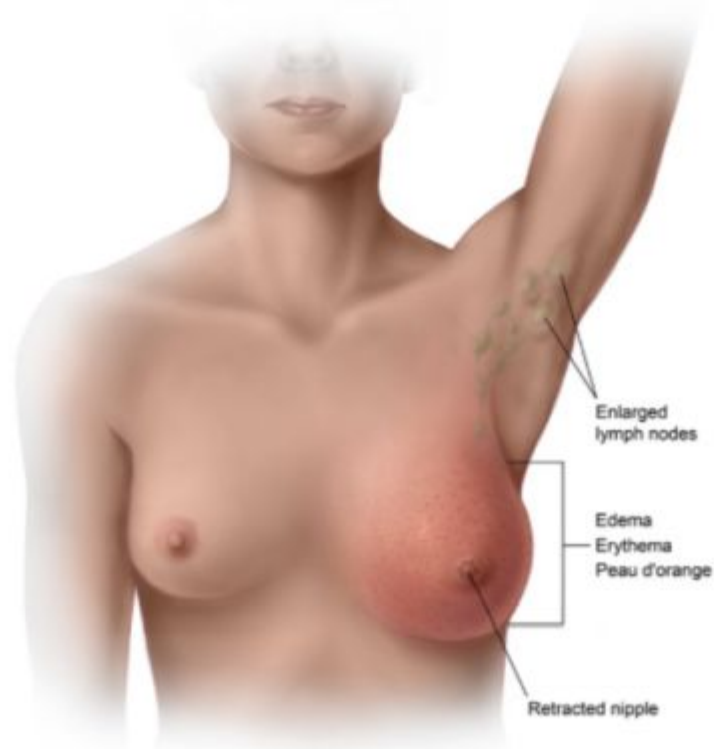
(Choice H) [Paget disease of the breast](#) is a form of ductal carcinoma that primarily presents with eczematous nipple changes (eg, flaking, crusting skin) that also include the areola. This condition can also have bloody nipple discharge but is unlikely in this patient without skin or nipple changes in the context of normal mammography.

(Choice I) Hyperprolactinemia caused by a pituitary adenoma would cause bilateral galactorrhea (eg, milky discharge) rather than unilateral bloody discharge. Headaches and visual changes signal a large lesion, and MRI may be indicated.

Educational objective:

Unilateral bloody nipple discharge is always pathologic. Bloody discharge without a corresponding breast mass or nipple changes in the setting of normal mammography is the classic presentation of intraductal papilloma.

Inflammatory breast cancer



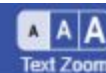
تنشيط
انتقل إلى

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Mammary Paget disease



Q.3



A 48-year-old woman is undergoing evaluation of "copper-colored" fluid from her right nipple that was first noticed last week during a breast self-examination. The patient's history includes schizophrenia, which was diagnosed in her 20s; her condition has been well controlled with antipsychotic therapy. She also takes acetaminophen intermittently for headaches. She runs and plays tennis regularly. She does not use tobacco, alcohol, or illicit drugs. Family history is significant for a paternal aunt who died from metastatic breast cancer at age 50. The patient's temperature is 36.7 C (98 F). On physical examination, 1 mL of reddish brown fluid is expressed from her right breast. No masses or lymphadenopathy is present on palpation. Which of the following is the most likely cause of this patient's findings?

- ☐ A. Benign breast cyst
- ☐ B. Fat necrosis of the breast
- ☐ C. Fibroadenoma
- ☐ D. Infiltrating ductal carcinoma
- ☐ E. Intraductal papilloma
- ☐ F. Lactotroph adenoma
- ☐ G. Medication side effect

Submit

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- ☐ A. Benign breast cyst (0%)
- ☐ B. Fat necrosis of the breast (1%)
- ☐ C. Fibroadenoma (0%)
- ☐ D. Infiltrating ductal carcinoma (10%)
- ☒ E. Intraductal papilloma (71%)
- ☐ F. Lactotroph adenoma (0%)
- ☐ G. Medication side effect (14%)

Omitted
Correct answer
E

 71%
Answered correctly

 02 secs
Time Spent

 04/23/2020
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Explanation

Intraductal papilloma	
Clinical features	• Unilateral bloody nipple discharge • No associated mass or lymphadenopathy
Management	• Mammography & ultrasound • Biopsy, +/- excision

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Unilateral bloody nipple discharge is the hallmark presenting symptom of an **intraductal papilloma**, a benign breast condition. Patients may have brown, red, or pink nipple discharge confined to a single duct. This discharge can range from frank blood to serosanguineous; the bleeding originates from the papilloma in the duct. This patient's family history of a single, paternal second-degree relative does not significantly increase breast cancer risk. Lack of lymphadenopathy or an irregularly shaped breast mass further supports the diagnosis of a benign process as the most likely etiology of her symptoms.

Imaging with breast mammography and ultrasound would reveal normal breast tissue or a **single dilated breast duct**. Confirmation of the diagnosis is with biopsy or duct excision and subsequent pathologic evaluation.

(Choice A) A benign breast cyst is a fluid-filled palpable mass that may be tender and does not cause nipple discharge. The treatment of symptomatic breast cysts is percutaneous fine-needle aspiration with drainage of cyst fluid.

(Choice B) Fat necrosis of the breast may present as a firm, irregularly shaped breast mass without nipple discharge. Some patients may have ecchymosis, and symptoms may arise after local breast trauma or surgery.

(Choice C) Fibroadenomas are benign, palpable breast masses that do not manifest nipple discharge. These tumors are typically well demarcated, round, firm, and mobile on examination.

(Choice D) Infiltrating ductal carcinoma may present with pathologic nipple discharge but is accompanied by a corresponding breast mass and

Unilateral bloody nipple discharge is the hallmark presenting symptom of an **intraductal papilloma**, a benign breast condition. Patients may have brown, red, or pink nipple discharge confined to a single duct. This discharge can range from frank blood to serosanguineous; the bleeding originates from the papilloma in the duct. This patient's family history of a single, paternal second-degree relative does not significantly increase breast cancer risk. Lack of lymphadenopathy or an irregularly shaped breast mass further supports the diagnosis of a benign process as the most likely etiology of her symptoms.

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(Choice C) Fibroadenomas are benign, palpable breast masses that do not manifest nipple discharge. These tumors are typically well demarcated, round, firm, and mobile on examination.

(Choice D) Infiltrating ductal carcinoma may present with pathologic nipple discharge but is accompanied by a corresponding breast mass and lymphadenopathy. Breast imaging identifies a lesion with microcalcifications.

(Choice F) A pituitary adenoma is a proliferation of lactotrophic cells in the pituitary gland that secrete prolactin and cause bilateral milky nipple discharge (eg, galactorrhea), not unilateral bloody or serosanguineous discharge.

(Choice G) Use of antipsychotic medications from the dopamine receptor antagonist class (eg, risperidone) can lead to hyperprolactinemia, which subsequently can cause amenorrhea with bilateral galactorrhea.

Educational objective:

Unilateral bloody nipple discharge is the hallmark presenting symptom of an intraductal papilloma, a benign breast condition. Lack of breast mass or lymphadenopathy differentiates this condition from other benign and malignant breast pathology.

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Educational objective:

Unilateral bloody nipple discharge is the hallmark presenting symptom of an intraductal papilloma, a benign breast condition. Lack of breast mass or lymphadenopathy differentiates this condition from other benign and malignant breast pathology.

References

- [Management of nipple discharge and the associated imaging findings.](#)
- [Clinician's Guide to Imaging and Pathologic Findings in Benign Breast Disease.](#)
- [Papilloma on core biopsy: excision vs. observation.](#)

Q.4



Previous



Next



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Notes



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Settings

Three days after an uncomplicated cesarean delivery, a 23-year-old woman, gravida 1 para 1, is evaluated on the postpartum floor due to bilateral **breast** pain and fatigue. The patient has been attempting to **breast**feed but has had difficulty getting the infant to latch, requiring her to supplement with formula. The patient's pregnancy was complicated by insulin-controlled gestational diabetes mellitus. She had a progestin-containing subcutaneous implant placed a day ago for contraception. Temperature is 37.4 C (99.4 F), blood pressure is 130/70 mm Hg, and pulse is 100/min. Bilateral **breasts** are full, erythematous, and diffusely tender. There is no axillary lymphadenopathy. The uterine fundus is firm, nontender, and palpable 3 cm below the umbilicus. Which of the following is the most likely diagnosis in this patient?

- ☐ A. **Breast** abscess
- ☐ B. **Breast** engorgement
- ☐ C. Galactocele
- ☐ D. Lactational mastitis
- ☐ E. Mammary candidosis
- ☐ F. Plugged duct

Submit

Three days after an uncomplicated cesarean delivery, a 23-year-old woman, gravida 1 para 1, is evaluated on the postpartum floor due to bilateral **breast** pain and fatigue. The patient has been attempting to **breast**feed but has had difficulty getting the infant to latch, requiring her to supplement with formula. The patient's pregnancy was complicated by insulin-controlled gestational diabetes mellitus. She had a progestin-containing subcutaneous implant placed a day ago for contraception. Temperature is 37.4 C (99.4 F), blood pressure is 130/70 mm Hg, and pulse is 100/min. Bilateral **breasts** are full, erythematous, and diffusely tender. There is no axillary lymphadenopathy. The uterine fundus is firm, nontender, and palpable 3 cm below the umbilicus. Which of the following is the most likely diagnosis in this patient?

- ☐ A. **Breast** abscess (0%)
- ✓ ☒ B. **Breast** engorgement (83%)
- ☐ C. Galactoceles (1%)
- ☐ D. Lactational mastitis (11%)
- ☐ E. Mammary candidosis (0%)
- ☐ F. Plugged duct (3%)

Omitted

Correct answer
B



83%
Answered correctly



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04/06/2020
Last Updated

Explanation

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Omitted

Correct answer
B



83%
Answered correctly



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Explanation

Common problems related to lactation	
Diagnosis	Clinical features
Engorgement	Bilateral, symmetric fullness, tenderness & warmth
Nipple injury	Abrasion, bruising, cracking &/or blistering from poor latch
Plugged duct	Focal tenderness & firmness &/or erythema; no fever
Galactocele	Subareolar, mobile, well-circumscribed, nontender mass; no fever
Mastitis	Tenderness/erythema + fever
Abscess	Symptoms of mastitis + fluctuant mass

This patient has **breast engorgement**, which commonly **occurs 3-5 days after delivery**, when colostrum is replaced by milk, resulting in high

This patient has **breast engorgement**, which commonly **occurs 3-5 days after delivery**, when colostrum is replaced by milk, resulting in high milk production volumes. The engorgement is exacerbated by a physiologic increase in interstitial edema from decreasing progesterone levels after delivery. Engorgement may also occur during times when milk accumulation exceeds drainage (eg, **breastfeeding weaning**). Patients with **breast** engorgement have **bilateral breast fullness** with **diffuse tenderness and erythema**. Cool compresses, acetaminophen, and nonsteroidal anti-inflammatory drugs may be used for symptom control. Patients should experience improvement as **breastfeeding** or regular pumping is established.

(Choices A and D) In contrast to this patient, those with **lactational mastitis** often have flulike symptoms (eg, fever, myalgias) and unilateral **breast** pain with a focal area of erythema and tenderness. **Breast** abscesses appear like mastitis and an associated area of fluctuance and axillary lymphadenopathy.

(Choices C and F) A **galactocele** and plugged ducts are common problems in **breastfeeding** women, but both typically present as a palpable mass.

(Choice E) Mammary candidosis is a common **breastfeeding** complication. Patients typically have unilateral, stabbing **breast** pain that is out of proportion to examination and have associated scaling of the skin on the nipple of the affected **breast**.

Educational objective:

Breast engorgement is common 3-5 days after delivery when colostrum is replaced by milk. Symptoms include bilateral **breast** fullness, tenderness, and warmth, without fever. Improvement is expected as **breastfeeding** is established.

References

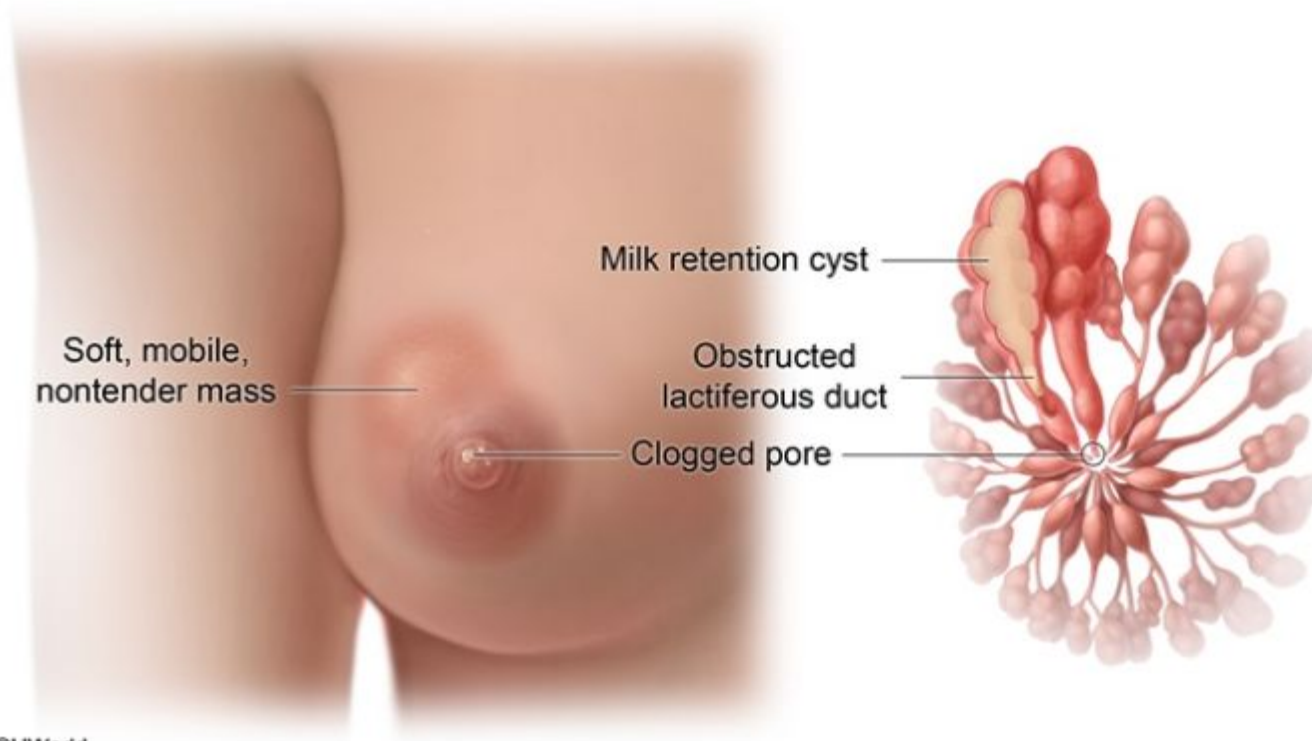
- [Treatments for breast engorgement during lactation.](#)
- [Pathological postpartum breast engorgement: prediction, prevention, and resolution.](#)
- [Breast pain: engorgement, nipple pain, and mastitis.](#)

انتقل إلى الإعدادات لتنشيط

Lactational mastitis



Galactoceles



تنشيط
انتقل

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Q.5

A 33-year-old woman comes to the office for evaluation of "fluid coming out of both nipples." The fluid is pale gray and has been leaking intermittently for the past week. She has 2 healthy children ages 5 and 8. The patient had a copper-containing intrauterine device placed for contraception a few months after the delivery of her younger child and has not used any hormonal contraceptives. She also has a history of mild gastroesophageal reflux for which she takes over-the-counter antacids. Examination shows normal **breasts** without palpable lumps or nipple abnormalities. Brownish-gray discharge is expressed from both nipples and is guaiac negative. Urine pregnancy test is negative. Which of the following is the most appropriate next step in management of this patient?

- ☐ A. Cytologic examination
- ☐ B. Discontinue antacid therapy
- ☐ C. Mammography
- ☐ D. Measure prolactin and TSH levels
- ☐ E. Reassurance and routine follow-up
- ☐ F. Ultrasound of the **breasts**

Submit



A 33-year-old woman comes to the office for evaluation of "fluid coming out of both nipples." The fluid is pale gray and has been leaking intermittently for the past week. She has 2 healthy children ages 5 and 8. The patient had a copper-containing intrauterine device placed for contraception a few months after the delivery of her younger child and has not used any hormonal contraceptives. She also has a history of mild gastroesophageal reflux for which she takes over-the-counter antacids. Examination shows normal **breasts** without palpable lumps or nipple abnormalities. Brownish-gray discharge is expressed from both nipples and is guaiac negative. Urine pregnancy test is negative. Which of the following is the most appropriate next step in management of this patient?

- ☐ A. Cytologic examination (4%)
- ☐ B. Discontinue antacid therapy (3%)
- ☐ C. Mammography (5%)
- ☒ D. Measure prolactin and TSH levels (74%)
- ☐ E. Reassurance and routine follow-up (8%)
- ☐ F. Ultrasound of the **breasts** (4%)

تنشيط Windows

انتقل إلى الإعدادات لتنشيط Windows

Correct answer

D



74%

Answered correctly



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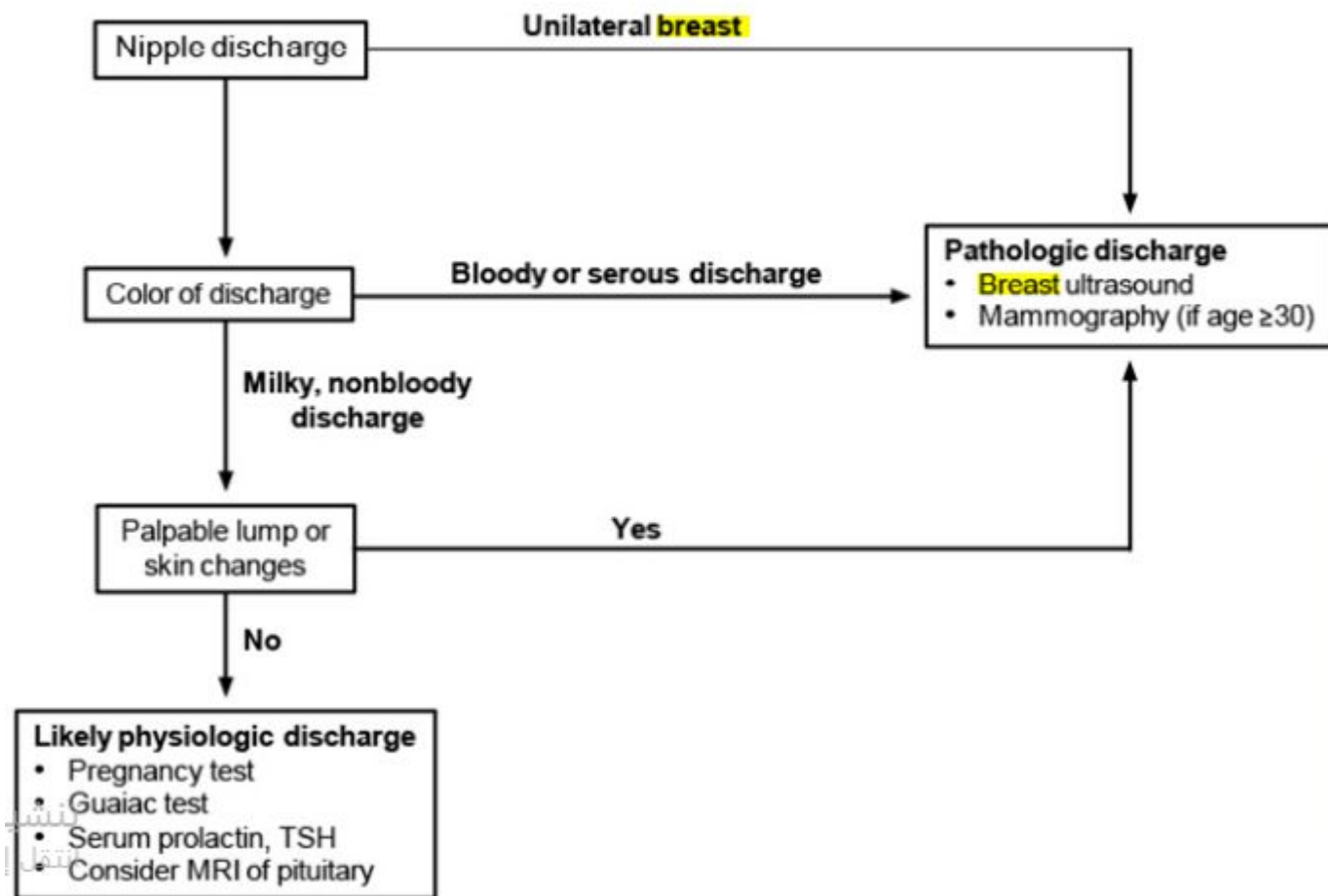
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Last Updated

Evaluation of nipple discharge



TSH = Thyroid-stimulating hormone.

This patient's presentation (bilateral, gray, nonbloody nipple discharge) is consistent with **physiologic galactorrhea**. Galactorrhea is defined as lactation in men or non-breastfeeding women; it may be a sign of a potentially significant disorder and should be evaluated (**Choice E**).

Physiologic galactorrhea is usually **bilateral** and **guaiac negative** (as in this patient); the appearance is typically milky or clear but can also be yellow, brown, gray, or green. This patient has bilateral, guaiac-negative discharge without signs of malignancy (eg, **breast** mass, lymphadenopathy, nipple changes, unilateral discharge). Initial evaluation should focus on identifying the etiology and includes serum prolactin, TSH, and a pregnancy test.

Hyperprolactinemia is the most common cause of galactorrhea and can be due to pituitary prolactinoma, medications, **hypothyroidism**, pregnancy, or chest wall/nipple stimulation (eg, surgery, trauma, shingles). Pituitary imaging (usually MRI) may be needed in patients with elevated prolactin and/or symptoms of a pituitary mass (eg, vision disturbances, headaches).

(**Choice A**) Cytologic examination may be considered to screen for malignancy in patients with unilateral or guaiac-positive nipple discharge. However, it is not indicated for bilateral, guaiac-negative discharge in the absence of malignant features.

(**Choice B**) Medications are a common cause of galactorrhea due to dopamine inhibition (eg, antipsychotics, antidepressants, opioids) or stimulating pituitary lactotrophs (eg, estrogen-containing contraceptives). Chronic use of histamine receptor blockers (eg, cimetidine) can inhibit estradiol metabolism and increase prolactin levels, but antacids are not known to have this adverse effect.

(**Choices C and F**) Findings suggesting malignancy include unilateral discharge, serous or bloody (gross or occult) rather than milky discharge, palpable **breast** abnormalities, and associated skin changes (eg, Paget disease of the **breast**). These patients require mammography and ultrasound.

Educational objective:

Physiologic galactorrhea is usually bilateral and can be milky (most common), yellow, brown, gray, or green. Hyperprolactinemia is the most common cause of physiologic galactorrhea. Galactorrhea should be evaluated with a pregnancy test, serum prolactin, TSH, and possible MRI of the brain.

References

Q.6

A 60-year-old woman comes to the office for a **breast** cancer follow-up visit. The patient recently underwent a right mastectomy for a node-negative, estrogen- and progesterone-receptor-positive tumor. She was started on an aromatase inhibitor for adjuvant therapy; however, the medication was discontinued due to severe fatigue and poor sleep. As a result, she is scheduled to begin a 5-year course of adjuvant therapy with tamoxifen. The patient has no other chronic medical conditions and her only medication is a daily multivitamin. Her last menstrual period was 5 years ago. The patient's father had a myocardial infarction at age 65; family history is otherwise noncontributory. She does not use tobacco, alcohol, or illicit drugs. Vital signs are stable. BMI is 21 kg/m². The patient has many concerns about tamoxifen therapy and asks about potential side effects. Which of the following is the patient at greatest risk for developing due to tamoxifen therapy?

- ☐ A. Decreased bone density
- ☐ B. Dysplasia of the cervical transformation zone
- ☐ C. Ectopic endometrial tissue in the myometrium
- ☐ D. Hyperplasia of the endometrium
- ☐ E. Intimal thickening of the coronary arteries

Submit

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A 60-year-old woman comes to the office for a **breast** cancer follow-up visit. The patient recently underwent a **right** mastectomy for a node-negative, estrogen- and progesterone-receptor-positive tumor. She was started on an aromatase inhibitor for adjuvant therapy; however, the medication was discontinued due to severe fatigue and poor sleep. As a result, she is scheduled to begin a 5-year course of adjuvant therapy with tamoxifen. The patient has no other chronic medical conditions and her only medication is a daily multivitamin. Her last menstrual period was 5 years ago. The patient's father had a myocardial infarction at age 65; family history is otherwise noncontributory. She does not use tobacco, alcohol, or illicit drugs. Vital signs are stable. BMI is 21 kg/m². The patient has many concerns about tamoxifen therapy and asks about potential side effects. Which of the following is the patient at greatest risk for developing due to tamoxifen therapy?

- ☐ A. Decreased bone density (16%)
- ☐ B. Dysplasia of the cervical transformation zone (0%)
- ☐ C. Ectopic endometrial tissue in the myometrium (0%)
- ☒ D. Hyperplasia of the endometrium (80%)
- ☐ E. Intimal thickening of the coronary arteries (2%)

Omitted

Correct answer
D



80%
Answered correctly



01 sec
Time Spent



06/17/2020
Last Updated

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)

Adjuvant endocrine therapy is commonly used for the treatment of nonmetastatic, hormone-receptor-positive breast cancer. The most commonly used endocrine agents include tamoxifen, aromatase inhibitors, and ovarian suppression (eg, GnRH agonists or surgery). **Tamoxifen** is a selective estrogen receptor modulator that is an **estrogen receptor antagonist in the breast**. It is the preferred adjuvant treatment for premenopausal women at low risk of breast cancer recurrence. Tamoxifen is also a second-line endocrine adjuvant agent for postmenopausal women who cannot use aromatase inhibitor therapy (eg, intolerable side effects).

Tamoxifen acts as an **estrogen agonist in the uterus** that can stimulate excessive endometrial proliferation. Therefore, tamoxifen use is associated with **endometrial polyps** in premenopausal women as well as **endometrial hyperplasia and cancer in postmenopausal women**. These risks continue for the duration of therapy and resolve after discontinuation of treatment. However, the benefit of improved survival from breast cancer due to tamoxifen outweighs the risk of endometrial cancer.

(Choice A) In postmenopausal women, tamoxifen has some estrogen-like activity on the bone, which can increase bone mineral density and significantly reduce the incidence of osteoporosis. However, tamoxifen is generally not a first-line agent for osteoporosis treatment due to the risk of endometrial cancer.

used endocrine agents include tamoxifen, aromatase inhibitors, and ovarian suppression (eg, GnRH agonists or surgery). **Tamoxifen** is a selective estrogen receptor modulator that is an **estrogen receptor antagonist in the breast**. It is the preferred adjuvant treatment for premenopausal women at low risk of breast cancer recurrence. Tamoxifen is also a second-line endocrine adjuvant agent for postmenopausal women who cannot use aromatase inhibitor therapy (eg, intolerable side effects).

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(Choice A) In postmenopausal women, tamoxifen has some estrogen-like activity on the bone, which can increase bone mineral density and significantly reduce the incidence of osteoporosis. However, tamoxifen is generally not a first-line agent for osteoporosis treatment due to the risk of endometrial cancer.

(Choice B) Dysplasia of the cervical transformation zone is typically caused by chronic human papillomavirus infection. Tamoxifen has no known effects on the cervix.

(Choice C) Tamoxifen is not associated with an increased risk for adenomyosis (ectopic endometrial tissue in the myometrium).

(Choice E) Intimal thickening of the coronary arteries is a precursor lesion for atherosclerosis. Tamoxifen decreases the blood cholesterol level and may protect against coronary artery disease.

Educational objective:

Tamoxifen is an estrogen antagonist on breast tissue and is used in the treatment and prevention of breast cancer. Tamoxifen is an estrogen agonist in the uterus and increases the risk of endometrial polyps, hyperplasia, and cancer.

References

- [Selective estrogen receptor modulators in clinical practice: a safety overview.](#)

Q.7



Mark



Previous



Next



Full Screen



Tutorial



Lab Values



Notes



Calculator



Reverse Color



Text Zoom



Settings

A 53-year-old woman comes to the office with a "strange, itchy rash" on her left breast, which has been present for the last month. The patient applied over-the-counter corticosteroid ointment onto this rash with no relief of symptoms. She takes no medications. The patient's last menstrual period was 2 years ago. She has a history of hypertension that improved with weight loss and exercise. Physical examination shows an eczematous plaque on the left nipple and areola. Which of the following conditions is most likely associated with this patient's finding?

- ☐ A. Adenocarcinoma
- ☐ B. Fibroadenoma
- ☐ C. Lymphoma
- ☐ D. Papilloma
- ☐ E. Squamous cell carcinoma

Submit

A 53-year-old woman comes to the office with a "strange, itchy rash" on her left **breast**, which has been present for the last month. The patient applied over-the-counter corticosteroid ointment onto this rash with no relief of symptoms. She takes no medications. The patient's last menstrual period was 2 years ago. She has a history of hypertension that improved with weight loss and exercise. Physical examination shows an eczematous plaque on the left nipple and areola. Which of the following conditions is most likely associated with this patient's finding?

- ☒ A. Adenocarcinoma (50%)
- ☐ B. Fibroadenoma (2%)
- ☐ C. Lymphoma (2%)
- ☐ D. Papilloma (14%)
- ☐ E. Squamous cell carcinoma (30%)

Omitted

Correct answer

A



50%

Answered correctly



02 secs

Time Spent



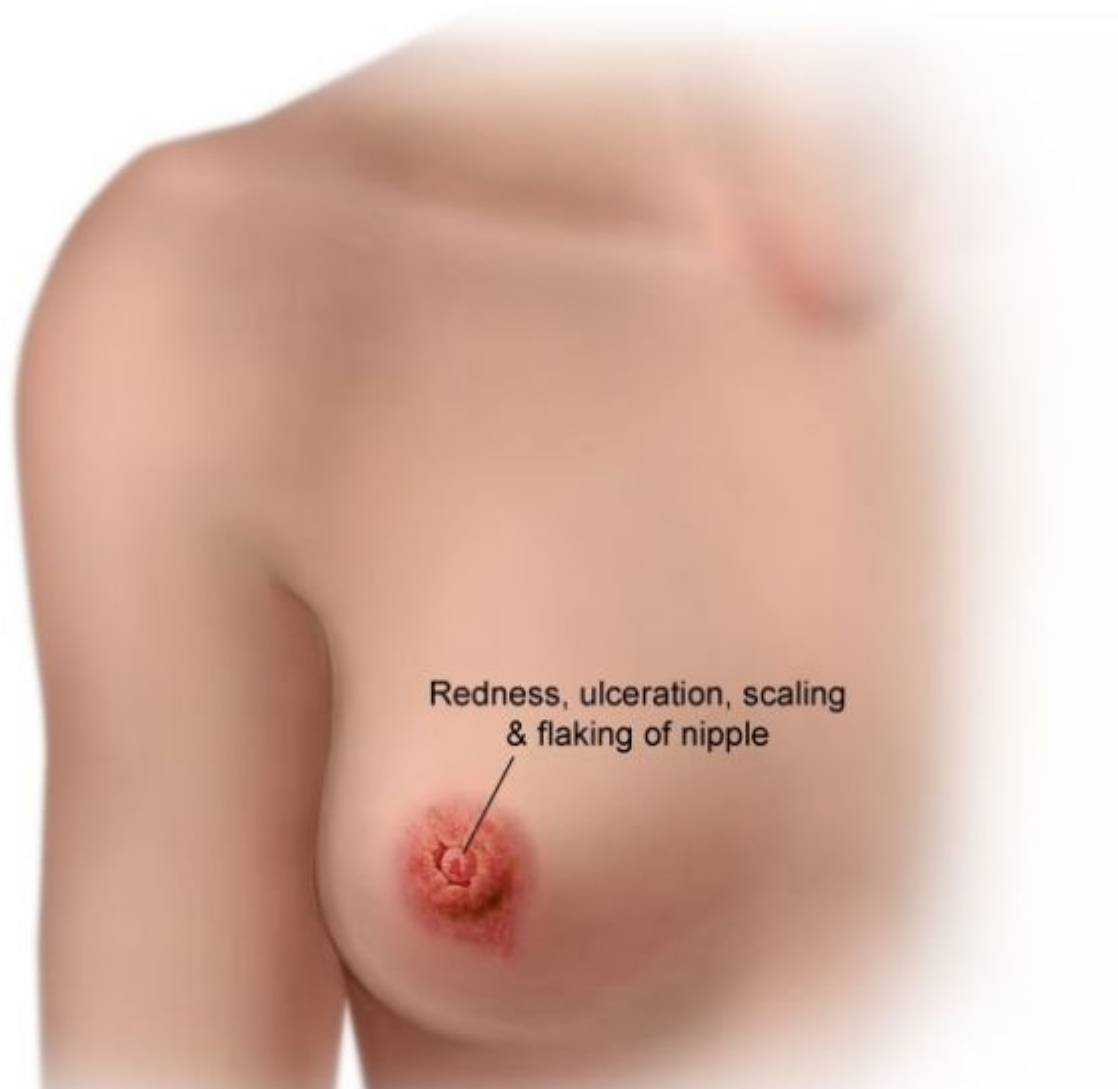
04/29/2020

Last Updated

Explanation

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Mammary Paget disease



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Breast cancer should be considered in a patient with no history of skin disease who develops a **breast** rash. **Mammary Paget disease** is suspected when a persistent, **eczematous**, and/or ulcerating **rash** is localized to the **nipple** and spreads to the areola. Other characteristic findings include vesicles, scales, bloody discharge, and nipple retraction. Patients experience pain, itching, and burning of the affected nipple and no resolution with topical corticosteroids.

Approximately 85% of patients with Paget disease of the **breast** have an underlying **breast** cancer, although a mass is not always palpable.

Adenocarcinoma, which refers to carcinoma that starts in glandular tissue, is generally the most common type of **breast** cancer and is also found in Paget disease. The nipple changes of Paget disease are thought to be caused by migration of neoplastic cells through the mammary ducts to the nipple surface. Further workup should include mammography and biopsy.

(Choice B) Fibroadenoma is a benign **breast** lesion that typically presents as a palpable, mobile, rubbery, firm **breast** mass without nipple changes.

(Choice C) **Breast** lymphoma is extremely rare and typically presents as a painless, palpable **breast** mass without cutaneous manifestations in a postmenopausal woman. Cutaneous lymphomas typically involve the trunk and/or extremities versus presenting as isolated **breast** lesions.

(Choice D) **Breast** papillomas are typically intraductal and present with unilateral bloody nipple discharge but not nipple lesions.

(Choice E) Cutaneous squamous cell carcinoma typically results from infection with human papilloma virus (eg, genital/periungual region) or frequent sun exposure (eg, head, neck, dorsum of the extremities). Primary squamous cell carcinoma of the **breast** is very rare.

Educational objective:

The hallmark of mammary Paget disease is a painful, itchy, eczematous, and/or ulcerating rash on the nipple that spreads to the areola. The majority of patients with mammary Paget disease have an underlying **breast** adenocarcinoma.

Q.8

A 58-year-old Hispanic woman, gravida 1 para 1, comes for a routine health maintenance examination. The patient has been doing well and has no concerns. She is a lactation consultant and **breast**fed her daughter for over 2 years. The patient has no chronic medical problems, and her only surgery was a cesarean section at age 20. Menarche was at age 14, and menopause occurred 4 years ago. She takes no medications and has no allergies. A cousin on the paternal side of her family died of **breast** cancer this year, and the patient is concerned about her own risk for **breast** cancer. Physical examination and screening mammography are normal. Which of the following historical findings is the greatest risk factor for **breast** cancer in this patient?

- ☐ A. Age at first pregnancy
- ☐ B. Age at menarche
- ☐ C. Chronological age
- ☐ D. Duration of **breast**feeding
- ☐ E. Ethnicity
- ☐ F. Family history of **breast** cancer

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A 58-year-old Hispanic woman, gravida 1 para 1, comes for a routine health maintenance examination. The patient has been doing well and has no concerns. She is a lactation consultant and **breastfed** her daughter for over 2 years. The patient has no chronic medical problems, and her only surgery was a cesarean section at age 20. Menarche was at age 14, and menopause occurred 4 years ago. She takes no medications and has no allergies. A cousin on the paternal side of her family died of **breast** cancer this year, and the patient is concerned about her own risk for **breast** cancer. Physical examination and screening mammography are normal. Which of the following historical findings is the greatest risk factor for **breast** cancer in this patient?

- ☐ A. Age at first pregnancy (2%)
- ☐ B. Age at menarche (7%)
- ☒ C. Chronological age (62%)
- ☐ D. Duration of **breast**feeding (1%)
- ☐ E. Ethnicity (7%)
- ☐ F. Family history of **breast** cancer (18%)

Omitted

Correct answer

تنشيط

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62%

Answered correctly



01 sec

Time Spent



05/12/2020

Last Updated

Explanation

Breast cancer risk factors	
Modifiable	• Hormone replacement therapy • Nulliparity • Increased age at first live birth • Alcohol consumption
Non-modifiable	• Genetic mutation or breast cancer in first-degree relatives • White race • Increasing age • Early menarche or later menopause

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Women in the United States have a 1 in 8 lifetime risk of being diagnosed with breast cancer, and the risk increases with chronological age. Other important risk factors include nulliparity, obesity, and prolonged hormone replacement therapy, all of which contribute to increased lifetime estrogen exposure. Aggressive cancers in young patients are more likely to be caused by inherited genetic mutations (eg, BRCA).

Screening for breast cancer involves clinical breast examination and mammography. Most current guidelines suggest routine screening mammography at age ≥ 50 due to increased risk of cancer with increased age.

(Choice A) Earlier age of first pregnancy is associated with a lower risk of breast cancer. Nulliparity increases breast cancer risk, similar to that of

Women in the United States have a 1 in 8 lifetime risk of being diagnosed with **breast cancer**, and the risk **increases with chronological age**. Other important risk factors include nulliparity, obesity, and prolonged hormone replacement therapy, all of which contribute to increased lifetime **estrogen exposure**. Aggressive cancers in young patients are more likely to be caused by inherited genetic mutations (eg, *BRCA*).

Screening for **breast** cancer involves clinical **breast** examination and mammography. Most current guidelines suggest routine **screening mammography at age ≥ 50** due to increased risk of cancer with increased age.

(Choice A) Earlier age of first pregnancy is associated with a lower risk of **breast** cancer. Nulliparity increases **breast** cancer risk, similar to that of a woman with first pregnancy at age 35.

(Choice B) Menarche after age 13 is associated with reduced **breast** cancer risk due to a decrease in lifetime estrogen exposure.

(Choice D) **Breastfeeding** has a protective effect on **breast** cancer with a significant relative risk reduction for each year of **breastfeeding**.

(Choice E) White women have the highest rates of **breast** cancer compared to other racial/ethnic groups; this patient is Hispanic.

(Choice F) The risk of **breast** cancer increases with history of the disease in first-degree relatives. A cousin is a second-degree relative and is less likely to be a significant risk factor for this patient without any other affected family members.

Educational objective:

Screening mammography is generally initiated at age ≥ 50 due to increasing risk of **breast** cancer with age. Other important risk factors include nulliparity, obesity, and prolonged hormone replacement therapy, all of which contribute to increased lifetime estrogen exposure.

References

- Preventive and risk reduction strategies for women at high risk of developing **breast** cancer: a review.

Q.9



A 42-year-old woman, gravida 3 para 3, comes to the office due to left **breast** swelling and pain that has worsened over the past month. The patient weaned her youngest child from **breast**feeding approximately 2 months ago. She last saw a health care provider a month ago for mastitis and was prescribed antibiotics. Her BMI is 46.6 kg/m². Temperature is 37.6 C (99.7 F) and blood pressure is 110/68 mm Hg. Physical examination reveals a morbidly obese woman in no apparent distress. **Breast** examination shows a left **breast** that is diffusely warm and erythematous with some dimpling. The right **breast** appears normal. Which of the following is the most likely diagnosis?

- ☐ A. **Breast** abscess
- ☐ B. Fat necrosis
- ☐ C. Fibroadenoma
- ☐ D. Infiltrating ductal carcinoma
- ☐ E. Inflammatory **breast** carcinoma
- ☐ F. Intraductal papilloma
- ☐ G. Lobular **breast** carcinoma
- ☐ H. Mastitis

تنشيط Windows

انتقل إلى الإعدادات لتنشيط Windows



Item 14 of 40

Question Id: 2346



Mark



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Next



Full Screen



Tutorial



Lab Values



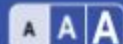
Notes



Calculator



Reverse Color



Text Zoom



Set

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- ☐ A. **Breast** abscess (20%)
- ☐ B. Fat necrosis (3%)
- ☐ C. Fibroadenoma (0%)
- ☐ D. Infiltrating ductal carcinoma (3%)
- ☒ E. Inflammatory **breast** carcinoma (56%)
- ☐ F. Intraductal papilloma (1%)
- ☐ G. Lobular **breast** carcinoma (0%)
- ☐ H. Mastitis (13%)

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Omitted

Correct answer



56%

Answered correctly



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Time Spent



04/27/2020

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This patient's clinical features are most likely due to **inflammatory breast carcinoma** (IBC). This rare but aggressive cancer classically presents as rapid-onset edematous cutaneous thickening with a "**peau d'orange**" appearance (eg, superficial dimpling, fine pitting). The affected **breast** is **edematous, erythematous, and painful**. Itching, a palpable **breast** mass, and nipple changes (eg, flattening/retraction) may also be present. Patients commonly have **axillary lymphadenopathy** suggesting metastatic disease.

The next step in evaluation should include mammography and ultrasound. Tissue biopsy is necessary to confirm the diagnosis.

(Choices A and H) Clinically, IBC can be confused with an infectious process (eg, mastitis, abscess) due to the common symptoms of warmth, pain, and erythema. However, infection typically is accompanied by fever and improves with antibiotic treatment. In addition, the peau d'orange findings make an infection unlikely.

(Choice B) Fat necrosis typically presents as an ill-defined, firm **breast** mass with irregular borders and a history of local **breast** trauma or surgery. Cutaneous findings with fat necrosis of the **breast** may be absent or may manifest as localized ecchymosis, not diffuse edema and erythema.

(Choice C) Fibroadenoma is a benign, palpable **breast** mass most commonly found in young women. This estrogen-sensitive tumor is typically firm and mobile, with regular borders and a spherical shape; it does not cause diffuse **breast** edema, erythema, or a peau d'orange appearance.

(Choices D and G) Infiltrating ductal carcinoma or lobular **breast** carcinoma may cause dimpling or **breast** contour changes. In contrast to IBC, diffuse **breast** erythema, edema, and peau d'orange appearance are absent in other types of **breast** cancer.

(Choice F) An intraductal papilloma is a benign condition that typically presents with unilateral bloody nipple discharge and no other symptoms or skin changes.

Educational objective:

Diffuse **breast** erythema, warmth, pain, and edema with a peau d'orange appearance are hallmark features of inflammatory **breast** carcinoma. This is an aggressive form of **breast** cancer that may be metastatic on initial presentation.

References

• **Inflammatory breast cancer: New factors contribute to disease etiology: a review.**

Q.10

A 36-year-old woman, gravida 2 para 2, comes to the office due to 2 days of right breast pain. She has also had fever, chills, muscle aches, and fatigue. The patient had a spontaneous vaginal delivery 6 weeks ago and has been breastfeeding her infant. Her husband has been feeding their baby pumped breast milk so that she can rest at night. The patient has no chronic medical conditions and takes a daily multivitamin. Her mother was diagnosed with metastatic breast cancer at age 55. Temperature is 38.8 C (101.8 F), blood pressure is 110/60 mm Hg, and pulse is 84/min. Physical examination shows a 5-cm area of erythema, induration, and tenderness at the upper outer quadrant of the right breast as well as right axillary lymphadenopathy. There is no fluctuance. The left breast has no abnormalities. Which of the following is the best next step in management of this patient?

- ☐ A. Discontinue breastfeeding and prescribe antibiotic therapy
- ☐ B. Order breast ultrasound and mammography
- ☐ C. Order mammography and core needle biopsy
- ☐ D. Perform incision and drainage and prescribe antibiotic therapy
- ☐ E. Prescribe antibiotic therapy and continue breastfeeding
- ☐ F. Recommend nonsteroidal anti-inflammatories and warm compresses only

A 36-year-old woman, gravida 2 para 2, comes to the office due to 2 days of right **breast** pain. She has also had fever, chills, muscle aches, and fatigue. The patient had a spontaneous vaginal delivery 6 weeks ago and has been **breastfeeding** her infant. Her husband has been feeding their baby pumped **breast** milk so that she can rest at night. The patient has no chronic medical conditions and takes a daily multivitamin. Her mother was diagnosed with metastatic **breast** cancer at age 55. Temperature is 38.8 C (101.8 F), blood pressure is 110/60 mm Hg, and pulse is 84/min. Physical examination shows a 5-cm area of erythema, induration, and tenderness at the upper outer quadrant of the right **breast** as well as right axillary lymphadenopathy. There is no fluctuance. The left **breast** has no abnormalities. Which of the following is the best next step in management of this patient?

- ☐ A. Discontinue **breastfeeding** and prescribe antibiotic therapy (6%)
- ☐ B. Order **breast** ultrasound and mammography (5%)
- ☐ C. Order mammography and core needle biopsy (5%)
- ☐ D. Perform incision and drainage and prescribe antibiotic therapy (8%)
- ☒ E. Prescribe antibiotic therapy and continue **breastfeeding** (70%)
- ☐ F. Recommend nonsteroidal anti-inflammatories and warm compresses only (3%)

Omitted

Correct answer

تنشيط Windows



70%

Answered correctly



02 secs

Time Spent



04/06/2020

Last Updated

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Lactational mastitis	
Pathogenesis	• Skin flora (eg, <i>Staphylococcus aureus</i>) enters ducts through nipple & multiplies in stagnant milk
Risk factors	• History of mastitis • Engorgement & inadequate milk drainage due to: ◦ Sudden increase in sleep duration ◦ Replacing nursing with formula or pumped breast milk ◦ Weaning ◦ Pressure on the duct (tight bra or clothing, prone sleeping) ◦ Cracked or clogged nipple pore ◦ Poor latch
Clinical presentation	• Fever • Firm, red, tender, swollen quadrant of unilateral breast • ± Myalgia, chills, malaise
Treatment	• Analgesia • Frequent breastfeeding or pumping • Antibiotics

This patient has **lactational mastitis**, a common infection in **breastfeeding** women due to inadequate milk duct drainage from pumping **breast** milk (instead of directly **breastfeeding**) or poor latch. Additional risk factors include infrequent feedings (as seen in this patient sleeping through the night), nipple excoriations, and rapid weaning from **breastfeeding**. Patients with **lactational mastitis** are diagnosed clinically and typically have **flulike symptoms** (eg, fever, myalgias), **focal unilateral breast pain** with surrounding erythema and induration, and axillary lymphadenopathy.

Lactational mastitis occurs when bacteria from the infant's nasopharynx or from the maternal skin are transmitted through the nipple and multiply in stagnant milk. The most common pathogen is *Staphylococcus aureus*, and treatment is empiric therapy against **methicillin-sensitive S aureus** with either **dicloxacillin** or **cephalexin**. Women with risk factors for methicillin-resistant *S aureus* (eg, recent antibiotic therapy, incarceration) are treated with clindamycin, trimethoprim-sulfamethoxazole, or vancomycin. In addition to antibiotics and analgesics (eg, ibuprofen), patients should **continue breastfeeding every 2-3 hours** because direct feeding from the bilateral **breasts** drains the milk ducts (Choice A).

(Choices B and D) Ultrasonography is indicated to assess for a **breast** abscess, which can present with fever, unilateral **breast** pain, and a fluctuant mass (not seen in this patient). Treatment of a **breast** abscess includes drainage and antibiotics.

(Choice C) Mammography and core needle biopsy are indicated in the evaluation of **inflammatory breast cancer**, which can present similarly to lactational mastitis (eg, **breast** pain, lymphadenopathy). However, patients with inflammatory **breast** cancer also typically have peau d'orange skin thickening and edema.

(Choice F) Nonsteroidal anti-inflammatory drugs and warm compresses are used in patients with **breast** engorgement. In contrast to this patient, those with engorgement have bilateral **breast** pain with generalized, rather than focal, involvement.

Educational objective:

Lactational mastitis presents with flulike symptoms, focal unilateral **breast** pain with surrounding erythema and induration, and axillary lymphadenopathy. Treatment includes antibiotic therapy against methicillin-sensitive *Staphylococcus aureus* (eg, dicloxacillin, cephalexin), analgesics, and continued **breastfeeding**.

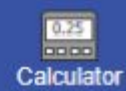
References

- Management of mastitis in **breastfeeding** women.

Lactational mastitis



Q.11



A 48-year-old woman, gravida 3, para 3, comes to the office for a follow-up visit due to a history of stage I hormone receptor-positive lobular breast carcinoma. She was diagnosed using needle-guided biopsy after a screening mammogram revealed irregular densities. The patient was treated with a mastectomy, radiation therapy, and adjuvant chemotherapy. She also has a history of hypertension and hyperlipidemia, which are controlled with daily medications. The patient quit smoking after the cancer diagnosis and tries to exercise 3 times a week. She is prescribed tamoxifen therapy for an anticipated duration of 5 years. As a result of tamoxifen initiation, this patient is at greatest risk for developing which of the following?

- ☐ A. Coronary heart disease
- ☐ B. Hot flashes
- ☐ C. Increased bruisability
- ☐ D. Ovarian cancer
- ☐ E. Uterine fibroids

Submit



Previous



Next



Full Screen



Tutorial



Lab Values



Notes



Calculator



Reverse Color



Text Zoom



Settings

A 48-year-old woman, gravida 3, para 3, comes to the office for a follow-up visit due to a history of stage I hormone receptor-positive lobular breast carcinoma. She was diagnosed using needle-guided biopsy after a screening mammogram revealed irregular densities. The patient was treated with a mastectomy, radiation therapy, and adjuvant chemotherapy. She also has a history of hypertension and hyperlipidemia, which are controlled with daily medications. The patient quit smoking after the cancer diagnosis and tries to exercise 3 times a week. She is prescribed tamoxifen therapy for an anticipated duration of 5 years. As a result of tamoxifen initiation, this patient is at greatest risk for developing which of the following?

- ☐ A. Coronary heart disease (16%)
- ☒ B. Hot flashes (45%)
- ☐ C. Increased bruisability (2%)
- ☐ D. Ovarian cancer (18%)
- ☐ E. Uterine fibroids (16%)

تنشيط Windows

Omitted

Correct answer

B



45%

Answered correctly



02 secs

Time Spent



01/07/2020

Last Updated

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)

Tamoxifen and raloxifene are commonly used **selective estrogen receptor modulators**. These drugs exhibit estrogen agonist and antagonist activity in a tissue-specific fashion. Tamoxifen is an estrogen antagonist in the **breast** and is therefore used as adjuvant therapy for estrogen receptor-positive **breast** cancer. It also **reduces the risk of recurrence** and the development of new cancer in the opposite **breast**.

Hot flashes are the most common side effect experienced by up to 80% of patients taking tamoxifen. Tamoxifen is theorized to exhibit antiestrogenic activity in the central nervous system and to cause **thermoregulatory dysfunction** in the anterior hypothalamus via a mechanism similar to the pathophysiology of menopausal hot flashes.

(Choice A) Although this patient has several risk factors for coronary heart disease (eg, hypertension, hyperlipidemia, and prior tobacco use), tamoxifen use does not impact that risk. However, tamoxifen does decrease blood lipid levels.

(Choice C) All estrogen agonists (eg, tamoxifen, raloxifene, estrogen-containing oral contraceptives) increase the risk of **venous thromboembolism** by increasing protein C resistance. Consequently, an increased tendency for bruising is unlikely.

(Choice D) Tamoxifen may decrease (but does not increase) the risk for ovarian cancer. Family history of ovarian cancer syndrome (eg, *BRCA*



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tamoxifen and raloxifene are commonly used **selective estrogen receptor modulators**. These drugs exhibit estrogen agonist and antagonist activity in a tissue-specific fashion. Tamoxifen is an estrogen antagonist in the **breast** and is therefore used as adjuvant therapy for estrogen receptor-positive **breast** cancer. It also **reduces the risk of recurrence** and the development of new cancer in the opposite **breast**.

Hot flashes are the most common side effect experienced by up to 80% of patients taking tamoxifen. Tamoxifen is theorized to exhibit antiestrogenic activity in the central nervous system and to cause **thermoregulatory dysfunction** in the anterior hypothalamus via a mechanism similar to the pathophysiology of menopausal hot flashes.

(Choice A) Although this patient has several risk factors for coronary heart disease (eg, hypertension, hyperlipidemia, and prior tobacco use), tamoxifen use does not impact that risk. However, tamoxifen does decrease blood lipid levels.

(Choice C) All estrogen agonists (eg, tamoxifen, raloxifene, estrogen-containing oral contraceptives) increase the risk of **venous thromboembolism** by increasing protein C resistance. Consequently, an increased tendency for bruising is unlikely.

(Choice D) Tamoxifen may decrease (but does not increase) the risk for ovarian cancer. Family history of ovarian cancer syndrome (eg, *BRCA* gene mutation, Lynch syndrome), infertility, and nulliparity are risk factors associated with ovarian cancer.

(Choice E) Although tamoxifen exhibits estrogen agonist activity in the uterus, it is not associated with uterine fibroids. However, tamoxifen stimulates endometrial proliferation and increases the risk of **endometrial cancer** (in postmenopausal patients) and **endometrial polyps** (in premenopausal patients).

Educational objective:

Tamoxifen is used as adjuvant therapy in hormone-positive **breast** cancer and has mixed agonist and antagonist activity on estrogen receptors. Hot flashes are the most common side effect. Tamoxifen is associated with increased risk of endometrial cancer and venous thromboembolism.

References

- Gynecologic conditions in participants in the NSABP **breast** cancer prevention study of tamoxifen and raloxifene (STAR).

انتقل إلى الإعدادات لتشيط



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Question Id: 12021



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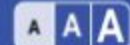
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A 42-year-old woman, gravida 4 para 4, comes to the office for her routine health maintenance examination. The patient's menses occur every 29 days with 2 days of heavy flow followed by 3 days of light flow. Her last menstrual period was a week ago and she has not experienced any recent changes to her menstrual cycles. Last month, she had a normal screening mammogram. The patient had 4 children via normal vaginal delivery and breastfed each child until age 1. Her mother had breast cancer at age 67 and is doing well after mastectomy and chemotherapy. The patient is an aerobics instructor and teaches classes 3 times a week. She does not smoke cigarettes and drinks 2 glasses of wine with dinner every evening. She is 168 cm (5 ft 5 in) tall and weighs 65 kg (143 lb); BMI is 23 kg/m². Breast examination shows no masses or discharge. She is concerned about her likelihood of getting breast cancer. Which of the following is the best recommendation for this patient?

- ☐ A. Decrease alcohol intake
- ☐ B. Genetic mutation testing
- ☐ C. Hormone replacement therapy after menopause
- ☐ D. Increase exercise
- ☐ E. Initiate oral contraceptives
- ☐ F. Prophylactic bilateral mastectomy

تنشيط Windows

انتقل إلى الإعدادات لتنشيط Windows

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A 42-year-old woman, gravida 4 para 4, comes to the office for her routine health maintenance examination. The patient's menses occur every 29 days with 2 days of heavy flow followed by 3 days of light flow. Her last menstrual period was a week ago and she has not experienced any recent changes to her menstrual cycles. Last month, she had a normal screening mammogram. The patient had 4 children via normal vaginal delivery and breastfed each child until age 1. Her mother had breast cancer at age 67 and is doing well after mastectomy and chemotherapy. The patient is an aerobics instructor and teaches classes 3 times a week. She does not smoke cigarettes and drinks 2 glasses of wine with dinner every evening. She is 168 cm (5 ft 5 in) tall and weighs 65 kg (143 lb); BMI is 23 kg/m². Breast examination shows no masses or discharge. She is concerned about her likelihood of getting breast cancer. Which of the following is the best recommendation for this patient?

- ☒ A. Decrease alcohol intake (50%)
- ☐ B. Genetic mutation testing (31%)
- ☐ C. Hormone replacement therapy after menopause (2%)
- ☐ D. Increase exercise (1%)
- ☐ E. Initiate oral contraceptives (12%)
- ☐ F. Prophylactic bilateral mastectomy (0%)

Omitted
Correct answer
A



50%

Answered correctly



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Time Spent



05/07/2020

Last Updated

Breast cancer risk factors

Modifiable	• Hormone replacement therapy • Nulliparity • Increased age at first live birth • Alcohol consumption
Non-modifiable	• Genetic mutation or breast cancer in first-degree relatives • White race • Increasing age • Early menarche or later menopause

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Breast cancer is the second most common cancer (after skin cancer) and the second most common cause of cancer death (after lung cancer) in American women. A woman has a **1 in 8 chance** of being diagnosed with breast cancer in her lifetime. Risk-reduction strategies for **modifiable risk factors** should be discussed at each health maintenance visit.

In women, moderate alcohol consumption can be defined as <2 drinks/day or <7 drinks/week. Although moderate alcohol consumption is linked with decreased mortality and possible cardiovascular benefits, even low alcohol intake (<1 drink/day) in women confers an increased risk of breast cancer. **Alcohol consumption** has a known **dose-dependent** causal effect on breast cancer. This patient consumes 2 daily servings of alcohol, or 14 drinks per week. A decrease in alcohol consumption will reduce her risk of breast cancer. The patient should also be counseled that excess alcohol intake increases the risk of cirrhosis, pancreatitis, and head and neck cancers.

(Choices B and F) Testing for genetic mutations (eg, *BRCA*, *HER2*) can first be performed in an affected individual with characteristics of a



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Breast cancer is the second most common cancer (after skin cancer) and the second most common cause of cancer death (after lung cancer) in American women. A woman has a **1 in 8 chance** of being diagnosed with **breast** cancer in her lifetime. Risk-reduction strategies for **modifiable risk factors** should be discussed at each health maintenance visit.

In women, moderate alcohol consumption can be defined as <2 drinks/day or <7 drinks/week. Although moderate alcohol consumption is linked with decreased mortality and possible cardiovascular benefits, even low alcohol intake (<1 drink/day) in women confers an increased risk of **breast** cancer. **Alcohol consumption** has a known **dose-dependent** causal effect on **breast** cancer. This patient consumes 2 daily servings of alcohol, or 14 drinks per week. A decrease in alcohol consumption will reduce her risk of **breast** cancer. The patient should also be counseled that excess alcohol intake increases the risk of cirrhosis, pancreatitis, and head and neck cancers.

(Choices B and F) Testing for genetic mutations (eg, *BRCA*, *HER2*) can first be performed in an affected individual with characteristics of a carrier (eg, **breast** cancer diagnosis at age <50, ovarian cancer at any age). Bilateral mastectomy can be offered to *BRCA* carriers. This patient and her mother do not have an increased likelihood of being mutation carriers as the mother was diagnosed with **breast** cancer at age 67.

(Choice C) Long-term use of systemic hormone replacement therapy increases the risk of **breast** cancer. It can be initiated to treat menopausal symptoms after the patient receives a thorough risk-versus-benefit analysis once this patient reaches menopause.

(Choice D) Physical activity, in general, confers a benefit. The patient's exercise regimen is a protective factor for **breast** cancer, as is her history of **breastfeeding**.

(Choice E) Oral contraceptive use decreases the risk of ovarian cancer and has no effect on the incidence of **breast** cancer in the general population.

Educational objective:

A woman has a 1 in 8 lifetime risk of **breast** cancer. Alcohol consumption is a dose-dependent risk factor, and reduced intake will decrease the risk of **breast** cancer. Protective lifestyle aspects include exercise and **breastfeeding**.

References

Q.13

Six weeks after a spontaneous, uncomplicated term vaginal delivery, a 32-year-old woman, gravida 1 para 1, comes to the emergency department due to left breast pain. The patient first noticed pain and redness on her left breast a week ago. She has continued to breast feed her infant from the unaffected breast. The patient has no chronic medical conditions and her only medication is a daily multivitamin. Temperature is 38.3 C (101 F). Physical examination shows an area of erythema extending from the areola to the lateral edge of the left breast and surrounding a well-circumscribed, 4-cm area of fluctuance. Axillary lymphadenopathy is present. Which of the following is the best next step in management of this patient?

- ☐ A. Breast binding and acetaminophen
- ☐ B. Core needle and skin punch biopsies
- ☐ C. Ice packs and use of a supportive bra
- ☐ D. Needle aspiration and antibiotics
- ☐ E. Warm compresses and massage

Submit

Six weeks after a spontaneous, uncomplicated term vaginal delivery, a 32-year-old woman, gravida 1 para 1, comes to the emergency department due to left breast pain. The patient first noticed pain and redness on her left breast a week ago. She has continued to breast feed her infant from the unaffected breast. The patient has no chronic medical conditions and her only medication is a daily multivitamin. Temperature is 38.3 C (101 F). Physical examination shows an area of erythema extending from the areola to the lateral edge of the left breast and surrounding a well-circumscribed, 4-cm area of fluctuance. Axillary lymphadenopathy is present. Which of the following is the best next step in management of this patient?

- ☐ A. Breast binding and acetaminophen (1%)
- ☐ B. Core needle and skin punch biopsies (3%)
- ☐ C. Ice packs and use of a supportive bra (3%)
- ☒ D. Needle aspiration and antibiotics (68%)
- ☐ E. Warm compresses and massage (22%)

The patient has a **breast abscess** based on the presence of signs of mastitis (fever, localized erythema/pain) accompanied by a unilateral **fluctuant, tender, palpable mass**. Breast abscesses typically develop from untreated mastitis (as seen in this patient), which is typically due to incomplete emptying of the breast (eg, poor latch, alternating of breast and bottle feeds) and resultant milk stasis. In turn, persistent or severe mastitis can lead to a focal collection of purulent fluid (abscess). Mastitis and breast abscess are typically caused by ***Staphylococcus aureus***, which enters the breast through nipple trauma (eg, chafing/blistering).

The diagnosis of breast abscess is made clinically, but ultrasound may be required to differentiate severe mastitis from an abscess if a mass is deep within the tissue. Management includes drainage of the abscess with either **needle aspiration** (usually under ultrasound guidance) or incision and drainage. **Empiric antibiotics** against methicillin-sensitive *S aureus* (eg, dicloxacillin, cephalexin) are added for treatment of the surrounding mastitis. Continued breastfeeding is recommended for continued milk drainage.

(Choice A) Breast binding is not recommended for breast engorgement, mastitis, or abscess because it increases pain and facilitates ductal blockage.

(Choice B) Core needle and skin punch biopsies are indicated in the evaluation of **inflammatory breast cancer**, which can present similar to mastitis or abscess (eg, unilateral breast pain, axillary lymphadenopathy). However, patients typically have peau d'orange skin thickening and a solid (rather than fluctuant) mass.

(Choice C) Ice packs and a supportive bra are indicated in the management of breast pain (ie, mastalgia). Patients with mastalgia have bilateral breast pain with no associated mass.

(Choice E) Warm compresses and massage are indicated in the management of a clogged lactiferous duct, which can present with unilateral breast pain; however, the mass is typically located in the subareolar region and has no associated axillary lymphadenopathy.

Educational objective:

Breast abscesses present with a unilateral fluctuant, tender, palpable breast mass with fever, surrounding erythema/pain, and associated axillary lymphadenopathy. Management includes drainage (eg, needle aspiration) and empiric antibiotics (eg, dicloxacillin, cephalexin).

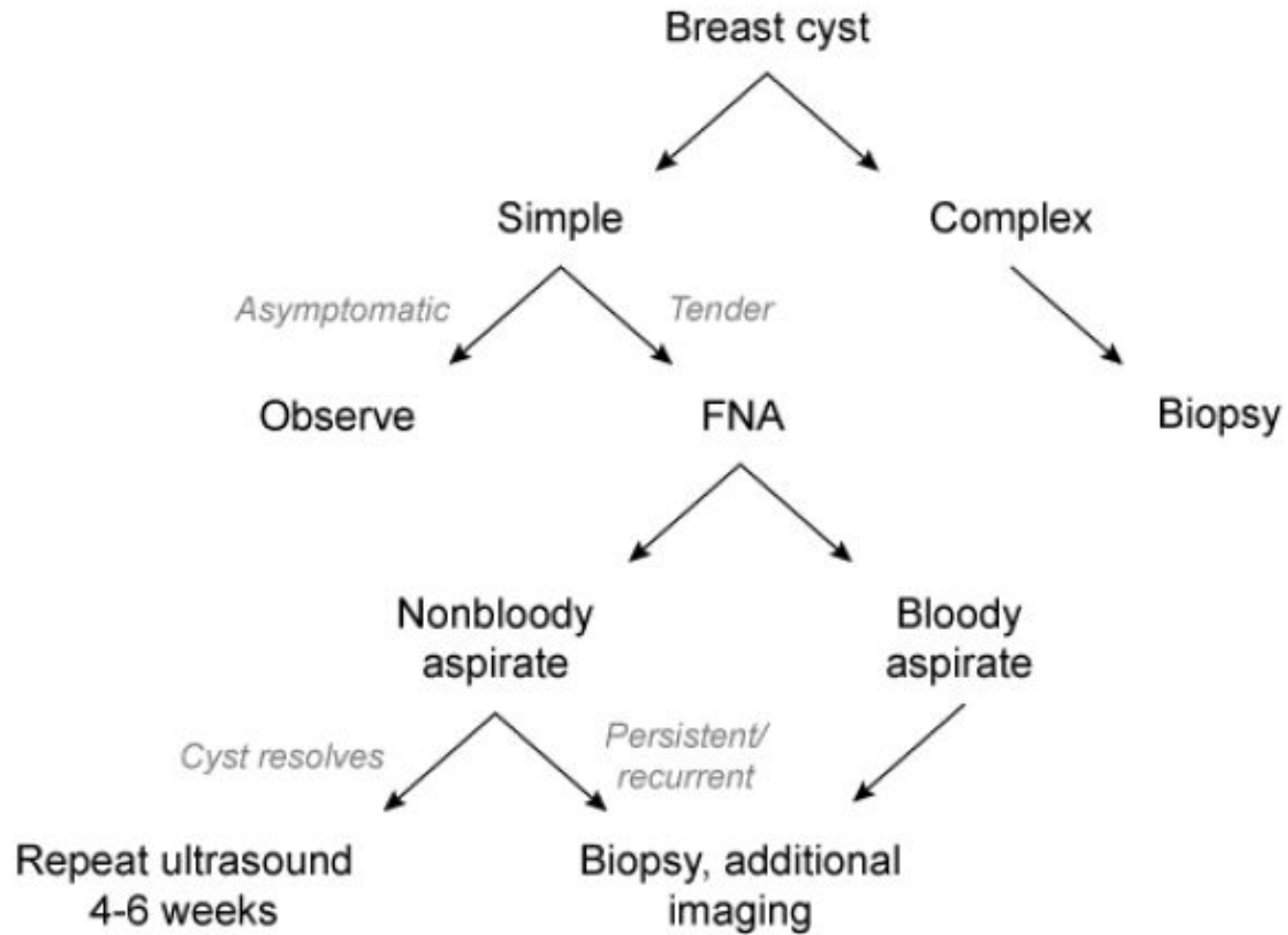
Q.14

A 28-year-old woman comes to the office due to a painful breast mass. She first noticed the mass during her last menstrual period, and its size has not changed since then. The patient has no chronic medical conditions, and her only medication is a daily combined oral contraceptive. On examination, there is a palpable, 1.5-cm right breast mass at the 8-o'clock position. The mass is tender, soft, and mobile, and there are no skin changes or galactorrhea. Breast ultrasound shows a single, thin-walled, fluid-filled cyst. Fine-needle aspiration of the mass reveals clear, yellow-tinged fluid. The mass is still palpable after aspiration. Which of the following is the most appropriate next step in management of this patient?

- ☐ A. Breast MRI
- ☐ B. Core needle biopsy
- ☐ C. Discontinuation of the combined oral contraceptive
- ☐ D. Observation and repeat examination in 6 weeks
- ☐ E. Thermography

Submit

Breast cyst management



This patient has a painful, palpable breast mass. Because history and physical examination alone are insufficient for breast cancer evaluation, all breast masses in women age <30 require evaluation with ultrasonography. Ultrasonography can help in the assessment of cancer risk based on the composition and characteristics of the mass. Patients with a **symptomatic**, simple **breast cyst** can undergo **fine-needle aspiration** for pain relief. Further management depends on the results of the fine-needle aspiration:

- If the aspirated fluid is clear (ie, not bloody) and the breast mass resolves completely, patients are at low risk for cancer and may undergo observation with a repeat breast examination in 4-6 weeks (**Choice D**).
- In contrast, if the fluid is bloody or the **mass does not resolve** (ie, remains palpable), patients are at increased risk for breast cancer and require **core needle biopsy**, which can provide a definitive histologic diagnosis.

(Choice A) Breast MRI is used for screening in high-risk patients (eg, *BRCA* carrier) or assessing for metastatic disease in patients with diagnosed breast cancer. It is not used for evaluating a new breast mass because breast MRI has high sensitivity but low specificity for cancer (ie, both benign and malignant masses appear enhanced).

(Choice C) Combined oral contraceptives (COCs) can cause breast pain, particularly in the first few months after initiation, but they do not typically cause breast cysts. Therefore, this patient does not need to discontinue her COCs.

(Choice E) Thermography is the measurement of skin temperature in an attempt to detect underlying cancer (ie, increased temperature may suggest higher metabolic activity and increased risk of cancer). However, thermography has not been proven to identify breast cancer and is not recommended.

Educational objective:

Symptomatic breast cysts can be managed with fine-needle aspiration. Breast cysts containing bloody fluid or masses that do not resolve with aspiration require core needle biopsy to evaluate for breast cancer.

Q.15

The following vignette applies to the next **2** items. The items in the set must be answered in sequential order. Once you click **Proceed to Next Item**, you will not be able to add or change an answer.

A 24-year-old woman comes to the office due to a breast lump that she noticed 2 days ago. The patient's menses are regular, occurring every 26 days with 2 days of heavy bleeding and 2 days of light flow. Her last menstrual period was 3 weeks ago. She is sexually active and recently started using combined estrogen/progestin oral contraceptives. The patient is an avid jogger and wears a sports bra almost daily. Family history includes a paternal aunt diagnosed with breast cancer at age 62. Physical examination shows a 2-cm, firm, round, mobile mass in the superior outer quadrant of the right breast.

Item 1 of 2

Which of the following is the most likely diagnosis in this patient?

- ☐ A. Ductal carcinoma
- ☐ B. Fat necrosis
- ☐ C. Fibroadenoma
- ☐ D. Fibrocystic changes
- ☐ E. Galactoceles
- ☐ F. Mammary duct ectasia
- ☐ G. Phyllodes tumor

The following vignette applies to the next **2** items. The items in the set must be answered in sequential order. Once you click **Proceed to Next Item**, you will not be able to add or change an answer.

A 24-year-old woman comes to the office due to a breast lump that she noticed 2 days ago. The patient's menses are regular, occurring every 26 days with 2 days of heavy bleeding and 2 days of light flow. Her last menstrual period was 3 weeks ago. She is sexually active and recently started using combined estrogen/progestin oral contraceptives. The patient is an avid jogger and wears a sports bra almost daily. Family history includes a paternal aunt diagnosed with breast cancer at age 62. Physical examination shows a 2-cm, firm, round, mobile mass in the superior outer quadrant of the right breast.

Item 1 of 2

Which of the following is the most likely diagnosis in this patient?

- ☐ A. Ductal carcinoma (0%)
- ☐ B. Fat necrosis (2%)
- ☒ C. Fibroadenoma (88%)
- ☐ D. Fibrocystic changes (9%)
- ☐ E. Galactocoele (0%)
- ☐ F. Mammary duct ectasia (0%)
- ☐ G. Phyllodes tumor (0%)

Benign breast disease	
Diagnosis	Clinical features
Breast cyst	• Solitary, well-circumscribed, mobile mass • $\pm$ Tenderness
Fibrocystic changes	• Multiple, diffuse nodulocystic masses • Cyclic premenstrual tenderness
Fibroadenoma	• Solitary, well-circumscribed, mobile mass • Cyclic premenstrual tenderness
Fat necrosis	• Post trauma/surgery • Firm, irregular mass • $\pm$ Ecchymosis, skin/nipple retraction

This young woman with an isolated, firm, mobile **palpable breast mass** most likely has a **fibroadenoma**, a benign breast condition common in **women age <30** and often sensitive to **estrogen**. Increased estrogen levels can cause increased fibroadenoma growth, which can make the mass more noticeable to the patient prior to menses or with initiation of combined estrogen/progestin oral contraceptives, as in this patient.

Like many benign breast masses, a fibroadenoma typically presents as a **small**, firm, **well circumscribed**, and **mobile** mass. Although fibroadenomas may present anywhere in the breast, they are usually solitary and commonly located in the **upper outer quadrant** of the breast. In contrast, a breast malignancy (eg, ductal carcinoma) is typically larger, irregularly shaped, and immobile; associated nipple discharge or lymphadenopathy may also be present (**Choice A**).

(**Choice B**) Fat necrosis of the breast, which occurs due to breast injury (eg, surgery, trauma), typically presents as a unilateral, irregular, firm breast mass with possible ecchymosis of the overlying skin.

(**Choice D**) Fibrocystic breast changes typically cause multiple, small, cyclically tender masses and diffuse nodularity in both breasts. In contrast, this patient has a unilateral, isolated mass.

(**Choice E**) A **galactoceles** is a milk retention cyst of the breast caused by an obstructed duct; it typically occurs in breastfeeding patients and is usually soft and cystic rather than firm.

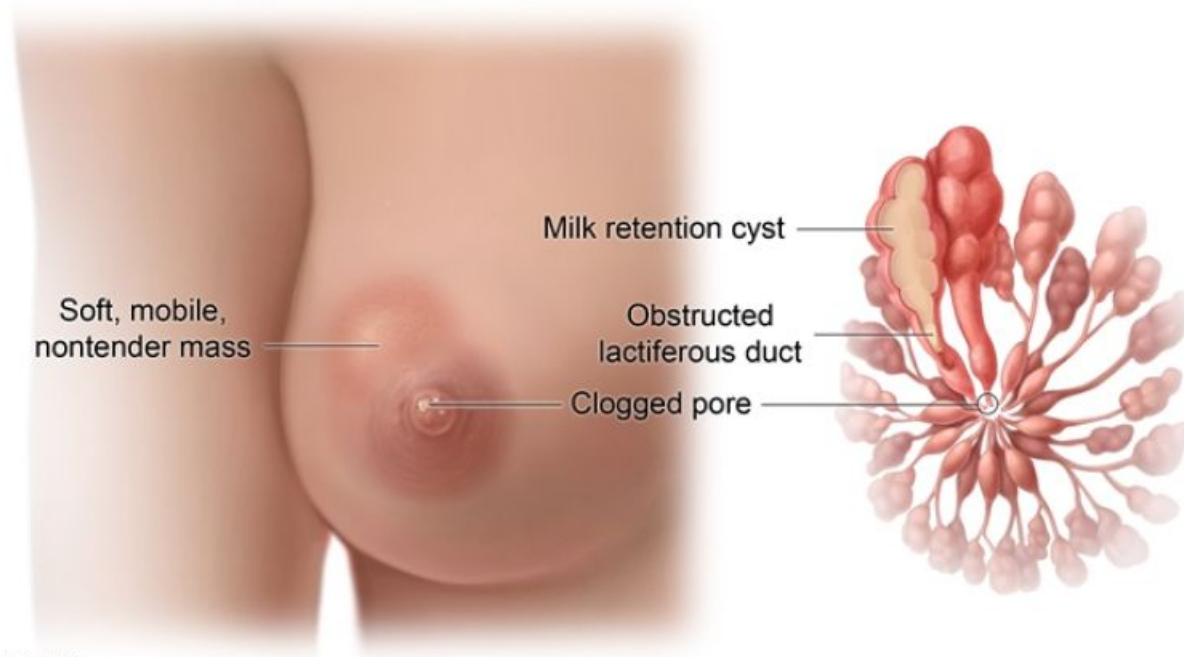
(**Choice F**) Mammary duct ectasia can present as a unilateral, isolated breast mass; however, these benign lesions are typically subareolar (not in the upper outer quadrants) and associated with nipple discharge due to inflammation of the subareolar breast ducts.

(**Choice G**) Phyllodes tumors are a rare form of breast tumor that, in the early stages of growth, shares similar characteristics with fibroadenomas (ie, unilateral, isolated, firm, well circumscribed, mobile). However, phyllodes tumors typically grow much larger, resulting in changes to the shape, contour, and skin (eg, necrosis) of the affected breast.

Educational objective:

An isolated, firm, well circumscribed, and mobile breast mass in women age <30 is commonly a benign fibroadenoma.

Galactoceles



Q.16

Item 2 of 2

Which of the following is the best next step in management of this patient's breast mass?

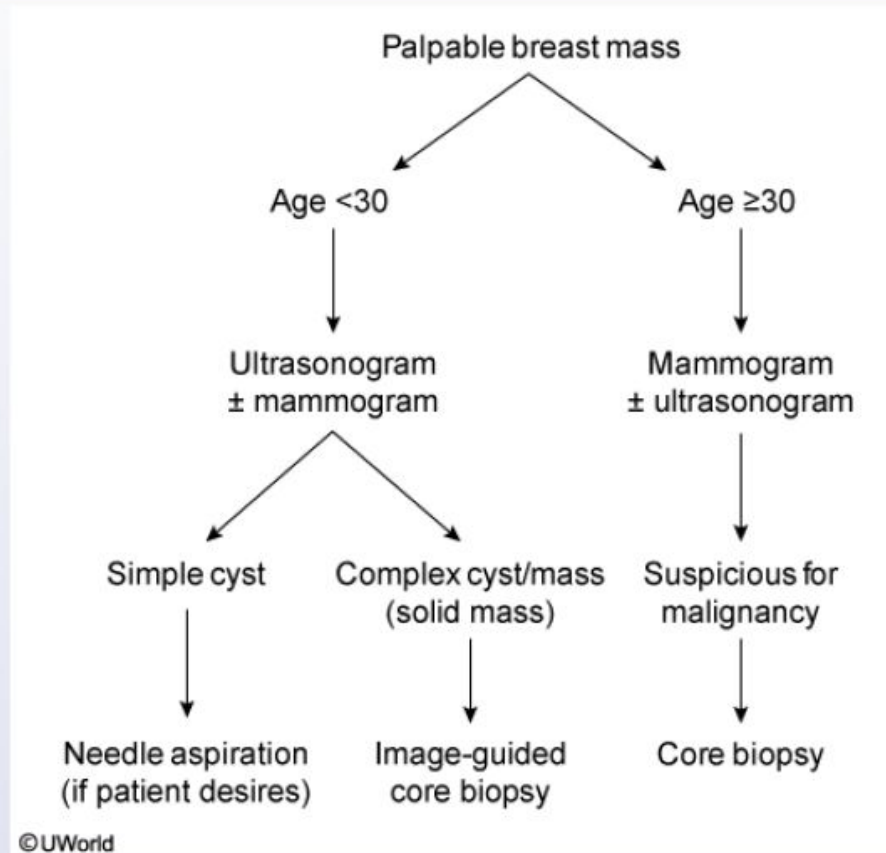
- ☐ A. Excisional biopsy
- ☐ B. Mammography
- ☐ C. MRI of the breast
- ☐ D. No further workup indicated
- ☐ E. Ultrasonography

Submit

Item 2 of 2

Which of the following is the best next step in management of this patient's breast mass?

- ☐ A. Excisional biopsy (1%)
- ☐ B. Mammography (3%)
- ☐ C. MRI of the breast (0%)
- ☐ D. No further workup indicated (38%)
- ☒ E. Ultrasonography (55%)



Q.17

A 35-year-old woman is being evaluated for a breast mass first noticed during a routine physical examination last week. The patient had bilateral reduction mammoplasty for mammary hyperplasia 2 years ago. She takes no medications and has no allergies; her paternal grandmother died at age 65 of breast cancer. Breast examination shows a fixed mass palpated in the upper outer quadrant of the right breast. Mammography shows a 3 x 3-cm spiculated mass with coarse calcifications in the upper outer quadrant of the right breast. Ultrasonography of the breast shows a hyperechoic mass. Core biopsy shows foamy macrophages and fat globules, and the mass is excised with concordant pathologic findings. Which of the following is the most appropriate course of action in management of this patient?

- ☐ A. Axillary node dissection
- ☐ B. MRI of the breast
- ☐ C. Radiation therapy
- ☐ D. Reassurance and routine follow-up
- ☐ E. Simple mastectomy

A 35-year-old woman is being evaluated for a breast mass first noticed during a routine physical examination last week. The patient had bilateral reduction mammoplasty for mammary hyperplasia 2 years ago. She takes no medications and has no allergies; her paternal grandmother died at age 65 of breast cancer. Breast examination shows a fixed mass palpated in the upper outer quadrant of the right breast. Mammography shows a 3 x 3-cm spiculated mass with coarse calcifications in the upper outer quadrant of the right breast. Ultrasonography of the breast shows a hyperechoic mass. Core biopsy shows foamy macrophages and fat globules, and the mass is excised with concordant pathologic findings. Which of the following is the most appropriate course of action in management of this patient?

- ☐ A. Axillary node dissection (18%)
- ☐ B. MRI of the breast (2%)
- ☐ C. Radiation therapy (5%)
- ☒ D. Reassurance and routine follow-up (70%)
- ☐ E. Simple mastectomy (3%)

This patient most likely has **fat necrosis** of the breast. This **benign** condition is associated with breast surgery (eg, breast reduction/reconstruction) and trauma (eg, seatbelt injury). Fat necrosis can mimic breast cancer in its clinical and radiographic presentation because it commonly presents as a **fixed mass** with skin or nipple retraction and gives the appearance of **calcifications** on mammography. Ultrasonography can demonstrate a hyperechoic mass, which often correlates with a benign etiology. Biopsy is diagnostic and typically shows fat globules and foamy histiocytes.

Despite benign biopsy results, the entire mass is often excised due to concerning findings of calcifications on mammography and a fixed irregular mass on clinical examination. Once the diagnosis is confirmed with pathologic analysis, routine annual screening is sufficient as the risk of breast cancer is not increased.

(Choices A, C, and E) Radiation and surgery are not indicated for this nonmalignant condition. Prophylactic mastectomy can be considered in patients with a strong family history of breast cancer, such as a patient with ≥ 1 first-degree relatives with breast cancer before age 50, or a hereditary oncogenic mutation.

(Choice B) MRI of the breast is used for the screening of high-risk patients (eg, *BRCA* carrier, first-degree relative of known *BRCA* carrier) and the evaluation of disease extent and chemotherapy response in breast cancer patients. Further imaging is not necessary with this patient as excisional biopsy confirmed a benign condition.

Educational objective:

Fat necrosis of the breast is a benign condition with clinical and radiographic findings similar to breast cancer, including skin or nipple retraction and calcifications on mammography. Biopsy will reveal fat globules and foamy histiocytes in fat necrosis. No further workup is indicated for excised lesions.

DONE