Case 1 – Name the labeled structures

Case 1 - Describe the histology. Identify lobules, intralobular ducts, connective tissue
Case 1 - Identify the cuboidal epithelial cells vs the myoepithelial cell of the intralobular ducts. Are there patient care situations when a pathologist must determine the presence of the 2 layers?

Case 1 – Normal Breast Tissue. Which section represents the organ of a pregnant woman? A nulliparous woman? Why?

Case 1 – Describe the histology of this section of breast tissue.
Case 1 – Name the organ. Describe the low power findings.

Case 1 – Describe the findings on 20x

Case 2

CHIEF COMPLAINT: “I feel a lump in my breast.”
HISTORY: A 23-year-old woman presents with a palpable mass in her right breast which she first noticed while bathing. The mass is not painful. There is no nipple discharge. She is an active, athletic woman who participates in many sports. Three days ago, during a volleyball game, the ball was spiked into her right upper chest. “It stung for a minute, but it was no big deal.” Her medical history is unremarkable; however, her mother died of breast cancer at age 46 years.
Case 2

HISTORY: The patient’s obstetric/gynecologic history includes the following: menarche age 11, menses were irregular until she began taking oral contraceptives at age 19 years, menses occur every 27 days and last for 4 days. She is gravida 0.

PHYSICAL EXAMINATION: Inspection of the thorax reveals a small mole-like lesion of the skin. The brown lesion is circumscribed, flat with a central elevated region, 0.6 cm in diameter and located in the “milk line” just caudal to the left breast. The breasts are examined with the patient in sitting and supine positions. The breasts are small and slightly asymmetrical (left > right). The contour of each breast is smooth; there is no evidence of dimpling, retraction, or edema. (Physical Examination continued on next slide…)

Case 2

PHYSICAL EXAMINATION: The nipples and areolae are pink-tan and non-eczematous. Although the nipples are not inverted, the left nipple points somewhat higher than the right. Palpation reveals a well delineated firm mass in the lower-inner quadrant of the right breast. The lesion is non-tender, movable (not fixed to the chest wall) and smooth. Estimated diameter of the mass is 1-1.5 cm. Bilateral compression of the nipples reveals no discharge. The remainder of the breast tissue is without abnormality.

Case 2

Summarize case 2.

Develop a differential diagnosis for the primary clinical problem.
Case 2 – Another patient with a similar lesion. Describe the findings.

Case 2 – Mammogram. From the radiologic description of the mass, do you favor a benign or malignant process?

Case 2 – Gross specimen which has been bivalved. Describe the findings.
Case 2 – Describe the low power histopathologic findings

Case 2 – Describe the findings on higher power

Case 2

Final Diagnosis:

The patient wants to know her “prognosis”. What will you tell her?
Case 3

**CHIEF COMPLAINT:** “I feel a lump in my breast.”

**HISTORY:** A 34-year-old woman presents with a palpable mass in the upper outer quadrant of her left breast. She first noticed the mass two months ago during a self-examination. The mass gradually enlarged, but there are no changes in the overlying skin, nipple, or areola. There is no liquid discharge from the nipple. Although the mass is not painful now, she experiences pain and tenderness every month prior to her menses. She states, “Both breasts get swollen and they’re sore as hell just before my period. You know, doc, as soon as my period is over, the pain goes away. This has been going on for years.” She does not remember injuring her breasts.

**HISTORY:** Her past medical history is unremarkable other than having an appendectomy at age 13. She is a stay-at-home mother for her three young children. She smokes one pack of cigarettes per day (since age 17) and does not drink alcohol or coffee. Her obstetric/gynecologic history reveals menarche at age 11. Her menses have been regular since age 17. Her menses occur every 27-30 days, lasting 5 days. Menstrual flow is moderate and consistent with each period. She is gravida 4, para 3 with one spontaneous abortion at age 31. She breast fed all of her children. She does not take oral contraceptives.

**PHYSICAL EXAMINATION:** The breasts are examined with the patient in sitting and supine positions. The breasts are large, round, and symmetrical. The contour of each is smooth with no evidence of dimpling, retraction, or edema. The nipples and areolae are symmetrical, brown, and show no eczema or inversion. Palpation reveals a distinct, round, non-tender mass in the upper outer quadrant of the left breast. The lesion is firm, smooth, and movable (not fixed to the chest wall). The adjacent breast tissue is firm or rubbery and contains multiple small nodules of varying size. Both breasts contain firm, nodular tissue. Bilateral nipple compression produces no discharge. Palpation of the axillae, infraclavicular spaces, and the supraclavicular fossae reveal no lymphadenopathy.
Case 3

What is the primary clinical problem?

Develop a differential diagnosis for the problem.

Case 3 - Describe the gross changes depicted in the image. What do the arrows represent?

Case 3 - Describe the low power findings.
Case 3 – Describe the histologic findings in the high power image

Case 3
What is your final diagnosis?

Case 3
What, if any, is the relationship between this disease process and the development of invasive breast carcinoma?
Case 4

CHIEF COMPLAINT: "I have a lump in my left breast."

HISTORY: A 62-year-old woman presents with a "lump" in the upper, outer part of her left breast. She admits that she first noticed the lump about two months ago while bathing. She did not seek medical attention at the time because "I thought it was a cyst. When I was having my babies, I had lumpy breasts and the doctor told me not to worry because they were cysts." She is concerned now because "the lump is hard, and it's bigger." She felt the lump two months ago but it was not visible. Since that time, however, the lump "has grown" and is visible as "swelling near my armpit." Although the breast lump is not painful now, "sometimes it is sore when I touch it." She denies nipple discharge and changes of the areolae and nipples. She has not had mammogram for 8 years.

PHYSICAL EXAMINATION:

With the patient in a sitting position, her breasts are large, pendulous, and asymmetric. The left breast is larger than the right breast, showing a fullness in the upper outer quadrant that extends into the left axilla. The skin of the upper outer quadrant is dimpled. The dimpling is exaggerated and an underlying mass is visible when the patient presses the palmar surfaces of her hands against her hips or raises her arms above her head. The skin of the left breast, nipple, and areola is not thickened or inflamed. While in a sitting position, the patient leans forward; palpation of the left breast reveals a large (4-5 cm), stony hard mass in the upper outer quadrant.

The left axilla contains 3 or 4 enlarged, firm, non-tender lymph nodes. The largest node is one centimeter in diameter. Examination of the right breast and axilla reveal no pathologic findings. In a supine position, palpation of the left breast reveals a non-tender, stony hard mass that is fixed to the anterior chest wall. Careful inspection/palpation of the remainder of the left breast reveals no additional masses. There is no lymphadenopathy of the right axilla or the right and left infraclavicular regions of the chest wall. Compression of the nipples reveals no bloody discharge. The nipples are not retracted.
Case 4

What is the primary clinical problem and differential diagnosis?

What clinical diagnosis do you favor? Why?

Case 4 - Other patients with the same condition

Case 4 – Describe the characteristic gross findings (3 different specimens)
Case 4 – Describe the low power findings

Case 4 - Describe the 20x findings

Case 4 - Describe the high power findings
Case 4
What is your final diagnosis?

Case 4
Determine the stage of the disease process based on the given data.

Case 5
**CHIEF COMPLAINT:** “My abdomen seems to be getting bigger.”
**HISTORY:** A 49-year-old woman without a significant past medical history presents to her doctor with increasing abdominal girth.
**PHYSICAL EXAMINATION:** Thin woman is in no acute distress. Heart and lung exams are normal. Her abdomen is protuberant. Shifting dullness during abdominal percussion and a fluid wave are appreciated. There is no hepatosplenomegaly, though the exam is limited.
Case 5

What is the primary clinical problem?

Develop a differential diagnosis.

What diagnostic workup would you suggest?

Case 5

Computed tomographic scan of the abdomen demonstrates a large adnexal mass.

Case 5

Oophorectomy specimen. Describe the gross findings
Case 5 – Describe the low power histologic findings. Can you identify any normal ovarian tissue?

Case 5 - Describe the findings on 20x and 40x

Case 5

What is your final diagnosis?

The patient wants to know why she “got” the disease? What questions would you ask to elucidate associated risk factors?
Case 5
Discuss the pathogenesis of the ascites in this case.

Case 6
CHIEF COMPLAINT: “I’m passing blood clots and clumps of white stuff from my vagina.”
HISTORY: A 39-year-old woman presents with vaginal bleeding, and passage of clots and “clumps of white stuff” per vagina. She had missed her last period, had positive home urine pregnancy test result and was arranging her first visit with an obstetrician/gynecologist.
PHYSICAL EXAMINATION: The uterus is markedly enlarged. There is no fetal activity detected.
Case 6 - Laboratory Data

Serum hCG >100,000 mIU/mL

<table>
<thead>
<tr>
<th>Weeks since LMP</th>
<th>Approximate hCG range</th>
</tr>
</thead>
<tbody>
<tr>
<td>4th week</td>
<td>0-75</td>
</tr>
<tr>
<td>5th week</td>
<td>200-7000 (week after 1st missed period)</td>
</tr>
<tr>
<td>6th week</td>
<td>200 - 32,000</td>
</tr>
<tr>
<td>7th week</td>
<td>3,000 - 90,000</td>
</tr>
<tr>
<td>8-12 weeks</td>
<td>32,000 - 100,000</td>
</tr>
<tr>
<td>13 - 16 weeks</td>
<td>9,000 - 100,000</td>
</tr>
<tr>
<td>16 - 29 weeks</td>
<td>1,400 - 53,000 Second Trimester</td>
</tr>
<tr>
<td>29 - 41 weeks</td>
<td>940 - 60,000 Third Trimester</td>
</tr>
</tbody>
</table>

Case 6 - Imaging

Transvaginal Ultrasound:
Enlarged uterus with a central heterogeneous mass with numerous discrete anechoic spaces. No embryo or fetus detected. No amniotic fluid.

Case 6 - Describe the gross findings

Source – Utah Web Path
Case 6 - Describe the characteristic pathologic changes

Case 6

What is your Final Diagnosis?

What treatment would you recommend?

The patient wants to know what her “future holds” with respect to this disease. What will you tell her?

Case 6 – Compare/Contrast A and B. What diagnosis do you favor for A based on the gross findings? Why is it clinically important to distinguish these 2 entities?