

Case #1 An irregular breast mass was found on self examination by a 46-year-old female. A FNA was performed and representative images are shown for this case, which highlight cells with atypical cytology that are discohesive and in a clean background. What is the best diagnosis?

- A. Fibroadenoma
- B. Medullary carcinoma
- C. Lymphoma
- D. Invasive breast cancer
- E. None of the above

Answer: D. This case represents invasive breast cancer. The atypia along with the discohesive features are suggestive of carcinoma. In addition, the background is clean, which is unlike a fibroadenoma which will have numerous naked nuclei. Medullary carcinoma would have a significant infiltrate of lymphoid cells.

Case #2 During pregnancy a 36-year-old female noted an enlarging breast mass 4 cm in greatest dimension. A FNA was performed and representative cytologic images are shown. Based on these findings, what is the best diagnosis?

- A. Fibroadenoma
- B. Medullary carcinoma
- C. Lymphoma
- D. Invasive breast cancer
- E. None of the above

Answer: A. This case shows the cytologic features classic in a fibroadenoma. There are large groups of cohesive cells with a “staghorn” configuration, stromal elements, and numerous naked nuclei in the background.

Case #3 Multiple masses are noted in the breast of a 40-year-old female. To reassure the patient, an excision was performed and a representative image of the histology is shown. Based on these findings, what is the best diagnosis?

- A. Fibrocystic changes
- B. Ductal carcinoma in situ with apocrine change
- C. Apocrine carcinoma
- D. Elongated a lobular units with columnar cell alteration (ELUCA)
- E. None of the above

Answer: A. This case illustrates the common finding of apocrine metaplasia, which is a feature of fibrocystic change.

Question #1 All the following are direct or obligate precursors to breast carcinoma EXCEPT:

- A. Complex sclerosing lesion
- B. Radial scar
- C. Sclerosing adenosis
- D. Papilloma

Answer: C. Sclerosing adenosis is not a direct or obligate precursor to breast carcinoma. These patients can be monitored without surgical excision. Radial scars and papillomas are associated with an approximately two-fold increased risk of carcinoma. The term complex sclerosing lesion is sometime applied to radial scars >1 cm. A papilloma with atypical ductal hyperplasia is associated with an approximate 7.5 fold increased risk of carcinoma. (O'Malley, pages 90, 100-103)

Question #2 After fibroadenoma, what is the most common focal mass lesion of the breast?

- A. Papilloma
- B. DCIS
- C. Fibrocystic Disease
- D. Phyllodes tumor
- E. Sclerosing adenosis

Answer: A. Papillomas are only second to fibroadenomas as the most common mass lesion in the breast. Fibrocystic disease/change is very common, but does not usually result in a focal mass lesion. (O'Malley, page 99)

Question #3 All the following are true with regards to fibroadenomas EXCEPT:

- A. More common in Afro-Caribbean women
- B. The most common mass lesion in the breast
- C. Most common in women in their 20s-30s
- D. Are differentiated from fibroadenomatoid hyperplasia by the presence of a capsule

Answer: D. Fibroadenomas are discrete masses, but do not have a capsule.

Question #4 In a phyllodes tumor the breast, what is the usual mitotic rate found in a borderline tumor?

- A. <10 mitoses/10 hpf
- B. 5-10 mitoses/10 hpf
- C. 10-20 mitoses/10 hpf
- D. 10-<20 mitoses/50 hpf
- E. 5-10 mitoses/50 hpf

Answer: B. A borderline phyllodes tumor is characterized by 5-10 mitoses/10 hpf. (O'Malley, chapter 10)

Question #5 All of the following are positive in pseudo-angiomatous stromal hyperplasia EXCEPT:

- A. Vimentin
- B. Actin
- C. CD34
- D. CD31
- E. All the above are positive

Answer: D. CD31 is not positive in pseudo-angiomatous stromal hyperplasia. The nucleated cells of pseudo-angiomatous stromal hyperplasia are thought to be myofibroblastic in origin. (O'Malley, pages 126-127)

Question #6 All the following are associated with fibromatosis of the breast EXCEPT:

- A. Pregnancy
- B. Neurofibromatosis type 1
- C. Trauma
- D. Gardner syndrome

Answer: B. Fibromatosis of the breast has been associated with trauma, pregnancy, and Gardner syndrome. (O'Malley, page 128)

Question #7 The malignant cells and Paget's disease may stain with all of the following EXCEPT:

- A. EMA
- B. CEA
- C. High molecular weight cytokeratins
- D. PAS
- E. ER/PR

Answer: C. Paget's cells are malignant glandular cells and will stain with low molecular weight cytokeratins (characteristic of glandular epithelium) but not high molecular weight cytokeratins (positive in squamous epithelium -- CK5/6). PAS will often highlight diastase resistant mucin globules. (O'Malley, page 140)

References:

“Breast Pathology.” O'Malley, FP, et al. 2006.

Notes for question set:¹

¹ PathMD strives for the highest quality and accuracy. However, the *PathMD: Board Review Letter* is for review purposes and not meant for clinical decision making. It should not be used in place of review of primary reference texts and the current medical literature. If inaccuracies are identified, please notify us so that a correction may be published. (info@PathMD.com)