2014MAMMO

1. Which of the following is NOT correct regarding characteristic of breast MRI?

a)Low contrast at dense breast

b)No invasive method and no radiation exposure

c)It can be objective evaluation and can exam both breasts.

d)It is the highest sensitivity for several diagnostic examinations.

2. Which of the following is NOT correct regarding indications of breast MRI?

a)Classification of Cyst and solid mass

b)Evaluation of Mammo-plasty and Mammo-reconstruction

c)Evaluation of therapeutic effectiveness before and after chemotherapy for breast cancer

d)Evaluation of unknown lymphatic metastasis

3. Which one is control factor of image contrast?

a)tube voltage

b)mA

c)Film focus distance (FFD)

d)Focus size of X-ray tube

4. Which of the following is NOT explanation regarding decision factors of object contrast?

a) tube voltage

b) mA

c) Density of tissue

d) Thickness of object

5. Which of the following is correct explanation of geometric unsharpness?

a) When X-ray tube is used small focus, unsharpness is increased.

b) When object-film distance is decreased, unsharpness is increased.

c) Unsharpness is more decreased at cathode than anode of X-ray tube.

d) Unsharpness is more increased in rotated anode x-ray tube than fixed anode x-ray tube in same actual focus.

6. Which of the following is NOT explanation regarding condition when collimator is used?

a) Improvement of image sharpness

b) Increase of image density

c) Decrease of scatter ray

d) Decrease of radiation exposure

7. How to change exposure parameter and patient dose, using an air-gap technique compared with using a grid?

a) Increase exposure parameter, decrease patient dose

b) Increase exposure parameter, increase patient dose

c) Decrease exposure parameter, Increase patient dose

d) Decrease exposure parameter, decrease patient dose

8. Which of the following is NOT explanation of MTF (modulation transfer function)?

a) Qualitative expression of image quality in digital image

b) Falling off in image quality as a diffusion of light cause result of decrease MTF.

c) Difficult of recognizing object because high MTF images are clearly expression of noise.

d) MTF value over efficiency measurement range means high sharpness

9. What is the meaning of change continuous density value to a positive number?

a) sampling

b) quantization

c) image compression

d) image reconstruction

10. What is a demerit mark on image evaluation standard in cranial-caudal view?

a) Include an internal breast tissue

b) Observe nipple contour on lateral view in middle of breast

c) Include a retromammary fat

d) Length of posterior line of nipple compared with internal-external oblique view is over than 1 cm.

11. Which of the following is NOT indication of magnification projection?

a) To observe margin of mass

b) To observe number and shape of micro calcification

c) In case of micro calcification located near the skin

d) To define micro calcification caused by vascular, fat necrosis, or secretory calcification

12. Which of the following is NOT explanation of spot projection?

a) Separate between lesion and breast tissue using strong compression

b) Include compressed lesion on field of view

c) Clearly observe far breast tissue off lesion

d) Observe calcification and mass combined magnification projection

13. Which of the following is NOT explanation of galactography?

a) Not application in case of inflammation

b) Application in case of nipple secretory from both breast

c) Application in case of blood secretory from nipple

d) Contrast injection is slow and low pressure to prevent rupture of the mammary gland duct

14. Which of the following is NOT explanation of specimen radiography?

a) Application of micro calcification

b) Not include guide wire in object

c) Low compression on the device for magnification

d) To confirm inclusion of tissue sample after biopsy

15. Which of the following is NOT explanation of implant displacement view?

a) Consideration of movement of implant for mammoplasty

b) Projection method using push-back method

c) Low compression of implant for mammoplasty

d) To decrease radiation dose using auto exposure control

16. Which of the following is correct order to develop benign-malignant disease as a calcification distribution?

a) diffuse – regional – grouped – linear – segmental

b) segmental – linear – grouped – regional – diffuse

c) grouped – regional – segmental – linear – diffuse

d) regional – segmental – diffuse – grouped – linear

17. Which of the following is correct explanation of reading of mammography?

Diagnostic

f/u, aSx

grade 2 NC of asymmetry in RUO and Lt. inner, C2

C2, both

a) Follow-up examination for touched mass

b) Low sensitivity of mammography due to dense breast

c) Need to follow-up examination because of no variation compared with last examination

d) Need to fixed period examination

18. Which of the following is explanation regarding BI-RADS?

a) Differentiation regarding reading of breast image and patient care

b) Organization of terms and report system

c) For communication of reading in hospital

d) Mammography, Breast sonography, breast MRI were included at 1st generation in 1992

19. Which of the following is NOT explanation of purpose of mammography?

a) Nipple discharge

b) Palpable mass

c) Mammoplasty

d) Breast pain

20. Which of the following is the best resolution of mammography?

a) Xeromammography

b) Screen-film mammography

c) CR mammography

d) DR mammography

21. Which of the following is Not relation with patients exposure dose?

a) grid ratio b) kVp c) focal spot size d) SID

22. Which of the following is correct when change 24 X 30 cm field size to 18 X 24 cm field size?

a) Decrease image density and decrease scatter ray

b) Decrease image density and increase scatter ray

c) Increase image density and decrease scatter ray

d) Increase image density and increase scatter ray

23. Which of the following is NOT explanation of sampling process change analog signal to digital signal?

a) It is convert continuous data to separate data

b) It can know frequency to decide sampling using a line pair of resolution chart

c) If it make sampling using over than 2 times the highest frequency, it can make digital signal without information loss

d) If it makes a lot of sampling with minimum data loss, it can get a high quality images

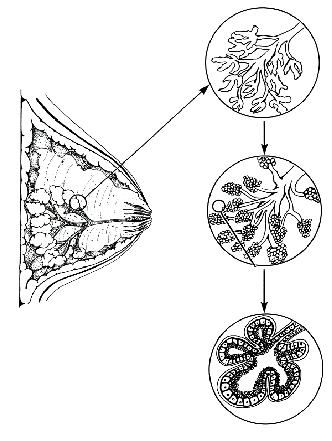
24. Left figure is sample image after mammotectomy. Left end of the image shows black line. What is the anatomic term of this black line?

|  |  |
| --- | --- |
| EMB000009e40908 |  |

a) Retromammary space b) pectoralis muscle

c) retinacula cutis d) breast capsule

25. Which of the following is correct meaning of figures?



a) Change breast lobula according to age

b) Change breast lobula before and after menopause.

c) Change breast lobula of pregnancy and breast feeding

d) Change breast lobula according to increased weight

26. What is the result when the tub-object-film Alignment was not correct?

a) blur

b) magnification

c) size distortion

d) Shape distortion

27. Which of the following is correct to change due to older compression paddle?

a) Thin compression paddle is broken

b) Compressed breast is sharply pressed in

c) Compression paddle lean to left of right side

d) Not keep parallel due to compression paddle toward up

28. Which of the following is correct emergency care after vascular electrovagogram reaction?

a) Massage to neck and shoulder of patient

b) Continue movement to keep consciousness

c) Positioning head close to between both knees

d) Supply oxygen or fanning

29. Which of the following is Not explanation of localization biopsy?

a) Projection of specimen

b) Using a grouping calcification lesion

c) Preparation for mammotectomy

d) Needle should be inserted near lesion

30. Which of the following is correct spot size for magnification projection?

a) 0.01 mm b) 0.03 mm c) 0.3 mm d) 0.1 mm

31. Which of the following are correct whenyoushorten the FFD(film focus distance)?

1. Occurrence of image magnification

2. Increase sharpness

3. Increase density

a) 1, 2 b) 1, 3 c) 2, 3 d) 1, 2, 3

32. Which of the following is incorrect for increasing the resolution?

a) Using the fine focus.

b) Long expose time.

c) Lengthen theSID(Sorce Image Distance)

d) Using the low speed screen and film

33. Which of the following is correct about “Line focus principle”?

a) Relationship between Actual focus spot and effective focus spot

b) Relationship between changing the exposure and film density

c) Relationship between changing the SID and film density

d) Grid ratio and grid frequency

34. Which of following is the best combination of Anode and Filter to reduce patient radiation dose minimally?

a) Mo/Mo b) Mo/Rh c) Rh/Mo d) Rh/Rh

35. Why should be the chest wall located by Cathode of X-ray tube in mammography?

a) Anode Heel Effect

b) Line Focus Principle

c) Filament Heat Unit

d) Anode Target Material

36. Which of the following is correct about relationship between Kilovoltage(kV) and Half-value layer(HVL)

a) If the kV increased, the HVL thickness is increase.

b) If the kV increased, the HVL thickness is decrease.

c) If the kV increased kV twice, the HVL thickness is increase twice.

d) If the kV increased kV twice, the HVL thickness is increase Squares

37. What is the meaning of AEC (Automatic Exposure Control) minimum response time?

a) The requiring time that intensifying phosphors have the energy

b) Shortest possible time to expose

c) The function of protection patients from over exposure

d) The function of protection X-ray tube from over heating

38. Usually Single side film and screen used to mammography, which of the following is correct reason?

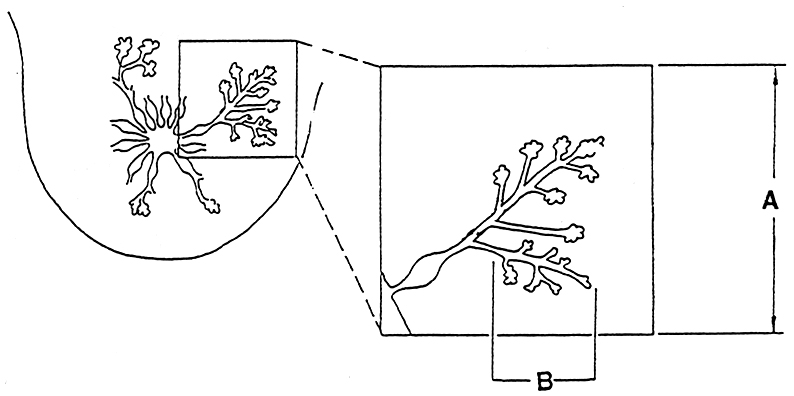
a) High sensitivity

b) Low contrast

c) High sharpness

d) High Granularity

39 What is the correct anatomic for A and B?



a) A=main duct, B=ductules b) A=lobe, B=lobule

c) A=areola, B=lobe d) A=duct orifice, B=ductules

40. Which of the following is the concerning physiological factors of metastasis of breast cancer?

a) blood circulation system

b) lymph node

c) Adipose tissue variations

d) feeding

41. Which of the following is the most importanthormone for breast growth?

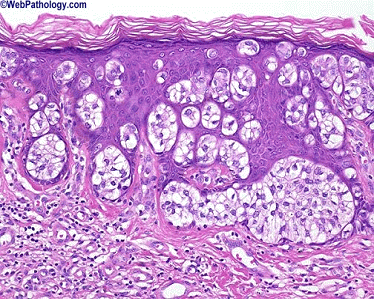
a) cortisol

b) prolactin

c) estrogen

d) progesterone

42. . This figure is the histological image of Paget's disease. Which of the following is not correct about of Paget's disease?



a) Paget's disease is the one of the ductal adenocarcinoma which isinvadedtheNipple and areola.

b) The cell shapes is the circle and Ellipse, It has Round nuclei and lots of Cytoplasm.

c) It is most common benign breast tumor which was often occurred young women age of 21 to 25.

d) It is happen with Inflammation, It show the Purulent necrotic.

43. Which of the following is correct about explanation of epithelial tissue?

a) Almost breast disease was happened in Epithelium layer.

b) Epithelial tissue is divided columnar shape basement membrane and myoepithelial cell layer

c) Epithelium layer and basement membrane are less affected by hormone on breast tissue

d) It is located inside of basement membrane, It is regenerate the columnar-shaped cells

44. Which of the following is NOT true about Involution of breast tissue?

a) Breast tissue trances to fat tissue.

b) The number of the lobe of inside breast is getting to reduce dramatically.

c) The time of starting involution is the time of menopause.

d) The supporting tissue lose elasticity when the breast tissue involutes unrelated to individual differences in breast size.

45. Which of the following is correct about galactocele?

a) Calcification oftheshell-shaped

b) Traumatic disordersof breast

c) Benignecystcontainingmilk

d) mammary cystic hyperplasia containing the milk

46. Where is the primary part of carcinoma and infiltrating cancer of the mammary gland and lobula?

a) Apulla

b) Pectoral fascia

c) Intralobularconnective tissue

d) TDLU(terminal ductal lobular unit)

47. What is the order that represents the image to display?

1. R(Right)

2. ID(Implant displaced)

3. M(Magnification)

4. CC(Craniocaudal)

a) 1-2-3-4 b) 3-1-4-2 c)1-3-4-2 d) 3-2-1-4

48. Which of the following is not correct about Standard abbreviations?

A) Caudocranialexamination is indicated by the abbreviation FB.

B) Spot Compression examination is indicated by the abbreviation SC

C) Lateromedial Oblique examination is indicated by the abbreviation LMO

D) Exaggerated Craniocaudal examination is indicated by abbreviation XCCL

49. The radiation field does not follow breast shape, follow the size of breast, what is the reason?

A) If the field size follow shape of breast, the breast image have the risk about cut

B) In order to include the marking

C) Preventing the visual error when reading unexposed side

D) Because breast is soft tissue, breast is not affected by scatter ray

50. Which of the following is NOT correct about the compression?

A) Getting better resolution by reducing the distance between the object and the film (OFD)

B) Separate the breast tissue to relieve the pain.

C) Reducing the thickness of the breast can reduce the exposure dose

D) Reducing the unsharpness about patient motion

51. When is proper term conducting BSE in the menstrual cycle?

A) Menstruating

B) before the one weeks on menstruating

C) After 1~2days of menstruation

D) Ovulation period

52. Which of the following is Not explanation regarding overall assessment of BI-RADS?

a) Category 0 means normal and low risk of breast cancer

b) Category 2 means benign disease and needs to fixed period examination

c) Category 3 means assumed benign disease and needs to short term follow-up examination

d) Category 4 means assumed malignant disease and needs to biopsy

53. Which is the high risk of breast cancer?

A) The faster theage at menarche

B) The faster the age at menopause

C) The greater the number of births

D) The faster the age at first childbearing

54. When clinicalsymptoms ofbreast canceris suspected, Which is the ture description?

A) Skin thickening

B) Skin dimpling

C) Congenital inverted nipple

D) Changes in bilateral breast size

55. Which is not true description about Mediolateral oblique view

A) Easy to accompany the patient ‘s pain when examining the Axillary portion

B) Depending on the patient's physique should be taken to transform the exam exposure angle

C) When examining the MLO view, press from just below the clavicle

D) This is advantageous method in inside breast and areola

56. Which is not true about Lateromedial view method?

A) Knowthe location and depth of the lesion

B) Pull the lower breast tissue should be taken mammography.

C) Know the level sand the proportion of lesions

D) X-ray tube’s angle 60’ is better

57. Which is not true purpose about Roll View ?

A) Apply to show to spread the high dense part’s tissue

B) Unclear, but apply to determined existing abnormal tissue, apply for an accurate diagnosis

C) The case of observing only one method,

D) Although left and right side images are not observing the resion, apply to touch something

58. What is the purpose about The 90 degree lateral view

A) It is one of the top and bottom shoot method

B) Method to avoid overlap

C) A method to reduce resion’s damage

D) Pinpoint the depth and location the top - bottom location of lesion

59. Which case need added examination?

A) When inserted the implant in breast cosmetic surgery

B) Do not performed the general examination because professionally trained body muscles

C) Because of congential malformation and acquired diseases, difficult to apply the routine method

D) the discovery of focal asymmetry that the only case of One projection (CarioCaudal view or MedioLateral Oblique view)

60. Which of the following is NOT correct purpose about reverse craniocaudal(CC) view or From Below(FB) view?

A) Object image distance(OID)reduces to well findbreastlesionslocated at the top.

B) The localizationbeforea biopsyof the lesionswhenthe region locatedbelow.

C) BreastNippleuppersideof theorganizationto includetissue a lot.

D) To more breast tissue contains in Male patientsandKyphoticfemale breast

61. Which of the following is NOT correct about Tangential view?

A) To comfirm the location of calcification

B) The radiopaque material is fitted

C) The nipple on the two sides appear to be.

D) Lesions on X-ray beam is perpendicular.

62. What is the region of interest in Creavage view?

A) Axillary breast B)Medial breast

C) Outer breast D)Upper breast

63. Which of the following is correct MLO view’s demonstration with pectoralis major muscle?

A)The outer margin of muscleappearsconcave symmetricaltriangle.

B)The outer margin of muscleappearsconvex symmetricaltriangle.

C)The outer margin of muscleappearsconcave symmetricalinverted triangle.

D)The outer margin of muscleappearsconvex symmetrical invertedtriangle

64. What is the difficult breast portion in normal CC view?

A) medial portion

B) lateral portion

C) upper portion

D) lower portion

65. Which of the following is correct about Fine neeld aspiration?

A) Exam when the diagnose with non - Palpable mass.

B) Confirm by stereotactic biopsy can be performed.

C) When the surgeon touched Palpable mass treatment is performed.

D) Easy to check and increase the amount of tissue pathological examination high accuracy.

66. Which of the following is NOT correct about Mammotome biopsy?

A) Incision biopsyis equivalent than excision biopsy.

B) Approach distance from the skin lesion is performed in the direction of the shortest distance.

C) Core needle biopsysampleis the accuracywith less scar tissue.

D) Dedicated pron typedevicecan reducethe side effects ofthe reaction inthevagus nerve,blood vessels.

67. Which of the following is NOT correct contraindications in Breast conserving surgery(BCS)

A) Diffusemalignantor malignantcalcificationspatientswith suspected.

B) If the positivity, the boundariessurgicalmargin biopsytest results.

C) Receivedradiation therapyto thebreast orchest wallin patients.

D) theareafour minutesevengreatermassthanthetwoorif there iscalcification.

68. Which of the following is the pixel size to indicate 10 lp/mm resolution in the digital mammography?

A) 0.1mm B) 0.5mm C) 0.01mm D) 0.05mm

69. Which of the following is about the real area where the electron collides with target?

A) Focus B) Actual Focus C) Effective Focus D) Nominal Focus

70. What is the minimum rotational angle of C-arm in mammography equipment?

A) 150° for one way and over 150° for the other way

B) 180° for one way and over 150° for the other way

C) 180° for one way and over 180° for the other way

D) 180° for one way and over 360° for the other way

71. Which of the following is the function of the Montgomery Gland?

A) Evacuatory function B) Stimulate function

C) Stabilization function D) Lubrication function

72. Which of the following is correct?

A) Estrogen – When pregnant, it is secreted from the pituitary anterior lobe, makes breast develop and promotes the lactation

B) Oxytocin – supply amino acid, fatty acid, glucose and calcium to milk

C) Prolactin – makes the galactophore be longer and adenoid tissue increase

D) Progesterone – makes galactophore and Epithelium of lobules increase and when pregnant, it promotes the development of acinus

73. Lymph node is divided into 3 groups. Which of the following is NOT include there ?

A) Axillary node B) transpectoral node

C) deep cervical node D) internal mammary node

74. Where is the part of breast for the lowest incidence of breast cancer?

A) Upper outer quadrant B) Upper inner quadrant

C) (Lower outer quadrant D) Lower inner quadrant

75. Which of the following is true about the Papilloma?

A) It is a benign disease from the nipple.

B) It is a malignance disease from the nipple.

C) It is a benign disease from the mammary gland.

D) It is a malignance disease from mammary gland.

76. Which of the following is the filtering effect for cover of the glass of the X-ray tube and cooling oil?

A) Inherent filtering

B) Additional filtering

C) Compensational filtering

D) Outside filtering

77. What is the normal size of the axillay lymph node compared with abnormal?

A) 20mm B) 25mm

C) 30mm D) 35mm

78. Which of the following is NOT the main muscle around breast?

A) Deltoid muscle B) Pectoralis major muscle

C) Pectoralis minor muscle D) Serratus anterior muscle

79. Which of the following is true about the male breast cancer?

A) It is 5% of whole breast cancer.

B) The gynecomastia is shown one side or both side.

C) The disease can cause a lot around the armpit.

D) It can be affected from female hormone.

80. Which of the following does NOT include as a Diagnostic Mammography?

A) The case examined with touchable mass.

B) The case rechecked due to the dense breast.

C) The case had Bloody discharge on the other breast

D) The mammography examined in abnormal finding at screening test

81. Which of the following is NOT correct method for diagnosis breast cancer?

A) Elastography

B) BSE(breast self exam)

C) High resolution CT

D) CBE(clinical breast exam)

82. Which of following must show on the Mammography?

1. The date of Examination

2. The number of cassette

3. The name of examiner

4. The strength of compress

5. The exposure method

6. The direction of left or right

A) all B) 1, 2, 3, 4

C) 1, 4, 5, 6 D) 1, 2, 3, 5, 6

83. Which of the following is the most far from the side effects of wire needle localization?

A) Rupture of lactiferous duct

B) Response of vagus nerve system

C) Contamination

D) Pneumothorax

84. Which of the following is the most suitable lesion for Stereotactic biopsy?

A) Papilloma

B) Fibroadenoma

C) Micro-calcification

D) Malignant lymphoma

85. What is the cancer of 80% in whole breast cancer?

A) mucinous carcinoma B) ductal carcinoma in situ

C) invasive ductal carcinoma D) invasive lobular carcinoma

86. Which of the following is NOT correct explanation about mamary duct ectasia?

A) It caused by involution and atrophy of mamary.

B) Lactiferous wall became thin due to inflamation.

C) It appears in large lactiferous duct including lactiferous sinus.

D) It can be caused by primary mastadenitis aroud ducts.

87. Which of the following has the lowest onset rate of breast cancer analyzing the risk factors?

A) A single woman who likes meat and exercise regularly

B) A woman who had high density breast after early menarche and late menopause

C) A 50 years old woman who has many children and underwent hysterectomy due to exacerbation of uterine myoma

D) A 50 year old woman who is taking estrogen due to severe late postmenopausal sysdrome by early menopause

88. Which of the following is the correct explanation about TNM system?

A) Nx: no local lymphatic gland metastasis

B) Mo: remote metastasis including upper clavicle of body side lymphatic gland

C) T2: over 2cm and less 5 cm of maximum length of breast

D) T4: DCIS, LCIS

89. Which of the following is NOT true about specialized radiological technologist in mammography?

A) Should explain simply, kindly and confidently.

B) Should explain easily and clearly for the question from patient without using technical term

C) During taking mammography, do palpation a lot and frequently.

D) Getting information and symptom from the patient to be helpful at reading.

90. Which of the following is NOT correct explanation about breast Ultrasonography?

A) It distinguishes malignancy by echo of tumor.

B) It has advantages to distinguish micro calcification.

C) It can evaluate the insertion of breast implant.

D) It distinguishes malignancy with the shape of tumor.