**Diagnostic value of sound touch elastography, quantification and shear ratio in evaluation of BI-RADS 3 and 4a breast masses**

- Demographics:

1. Code: 3
2. Age: 46
3. Residency:  Erbil
4. Marital status: ▢ Single  ▢ Married   ▢ Widowed/Divorced

Gynecological history:

1. Menstrual status: ▢ Menstruationg  ▢ Peri-menopausal   ▢ Post-menopausal
2. Age at menarche:  13 yrs
3. Age at menopause:
4. Parity: G7P5A02
5. Age at first delivery: 25 Yrs
6. Breast lactation:  ▢ Yes    ▢ No

First degree family history of breast cancer before the age of 50:  ▢ Yes  ▢ No

Clinical:

1. Presenting complaint:

    ▢ Breast lump       ▢ Localized breast pain     ▢ Skin changes

    ▢ Recent nipple retraction     ▢ Nipple ulceration   ▢ Nipple discharge

    ▢ Change in the size of breast ▢ Axillary mass   ▢ Wellness visit

1. Breast involved:  ▢ Right  ▢ Left

Ultrasound - Grey scale:

1. Tissue composition: ▢ Fat ▢ Fibroglandular ▢ Heterogenous
2. Size:  .....10 mm................................................
3. Location:  ...LIQ..................................................
4. Shape: ▢ Oval  ▢ Round  ▢ Irregular
5. Orientation:  ▢ Parallel    ▢ Not parallel
6. Margin:  ▢ Circumscribed  ▢ Not circumscribed

- if not circumscribed: ▢ Indistinct   ▢ Angular  ▢ Microlobulated    ▢ Spiculated

1. Echo pattern: ▢ Anechoic   ▢ Hypoechoic   ▢ Isoechoic ▢ Hyperechoic

▢ Complex cystic and solid   ▢ Heterogenous

1. Posterior features: ▢ No posterior features  ▢ Enhancement   ▢ Shadowing

▢ Combined pattern

1. Associated features : none
2. BIRADS:   ▢ 3    ▢ 4a

Elastography - Shearwave :

|  |  |
| --- | --- |
| a. Mass shearwave: | b. Shell shearwave: |
| -  Emin:  .........14......Kpa...........................…...... | -  Emin:  ..........29....Kpa................................….. |  |
| -  Emax:  .........86.....Kpa.................................... | -  Emax:  ........90.......Kpa.................................... |  |
| - Emean:  ..........40........Kpa................................. | - Emean:  ........58...Kpa.................................... |  |
| -  E standard deviation:  18 Kpa.............….... | -  E standard deviation:  .......28...Kpa….............. |  |

c. Elasticity ratio (shear ratio): ..........2.94...........................................

d. STQ value: .............72......Kpa...................................

Biopsy result:

1. Histopathology result: ▢ Benign ▢ Intermediate ▢ Malignant

2. If benign: ▢ Fibroadenoma ▢ Fibroadenosis ▢ Fibrocystic changes ▢ Fat necrosis

▢ Papilloma ▢ Chronic inflammation ▢ Granulomatous mastitis

▢ Sclerosing adenosis ▢ Phylloid tumor ▢ Tuberculosis

3. If malignant: ▢ Ductal carcinoma in situ (DCIS) ▢ Invasive ductal carcinoma (IDC)

▢ IDC+DCIS ▢ Lobular carcinoma in situ (LCIS)

▢ Invasive lobular carcinoma(ILC) ▢ ILC+IDC

▢ Medullary carcinoma ▢ Mucinous carcinoma ▢ Metaplastic carcinoma

▢ Papillary carcinoma ▢ Tubular carcinoma ▢ Adenoid cystic carcinoma