Localizing Mammographic Lesions

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January 2020
Standard Mammographic Compression Views

R MLO

superior

depth

inferior

depth

L MLO
Standard Mammographic Compression Views
So let’s put it together on the right...

- Together the MLO and CC views translate into:
  - **quadrants** – used in mammography reports
  - **clockface** – used in sonography reports
And the left ...
And one more thing…

- For the four quadrants, use upper, lower, outer, inner as lexicon
  - **Upper outer**
  - **Upper inner**
  - **Lower outer**
  - **Lower inner**
Regardless of whether you look at right or left breast images, the following holds true:

- **Upper** is always **up** on MLO
- **Outer** is always **up** on CC
- **Lower** is always **down** on MLO
- **Inner** is always **down** on CC
And once you identify the quadrant on mammo, you can predict US clock location

- **Right Breast**
  - UIQ – 12 to 3
  - LIQ – 3 to 6
  - LOQ – 6 to 9
  - UOQ – 9 to 12

  \[ \text{R v L matters!} \]
  
  i.e. Notice how UIQ is either 12 to 3 on L vs. 9 to 12 on R

- **Left Breast**
  - UIQ – 9 to 12
  - UOQ – 12 to 3
  - LOQ – 3 to 6
  - LIQ – 6 to 9
Practice Cases
Case 1

On both MLO and CC:

- Locate lesion – this is an easy one!
- Locate nipple.
- Determine quadrant.
Case 1

Upper Outer

- Fibroadenoma (calcified)
Case 2

On both MLO and CC:

- Locate the lesion.
- Locate the nipple.
- Is lesion above or below the nipple?
- Determine quadrant.
Case 2

Upper Inner

- 2 o’clock

- Found to be a 2cm cyst on ultrasound
Case 3

On both ML and CC:

- Locate the lesion.
- Locate the nipple.
- Is lesion above or below the nipple?
- Determine quadrant.
Case 3

Upper Inner

Lesion is above nipple on MLO = superior / upper

Lesion is below nipple on CC = medial / inner
Case 4

On both MLO and CC:

- Locate the lesion.
- Locate the nipple.
- Is lesion above or below the nipple?
- Determine quadrant.
Case 4

Upper Outer

- 1-2 o’clock

Lesion is above nipple on MLO = superior / upper

Lesion is above nipple on CC = lateral / outer
Case 5

On both MLO and CC:

- Locate the lesion.
- Locate the nipple.
- Is lesion above or below the nipple?
- Determine quadrant. If you cannot decide between quadrants, label as superior or inferior.
Case 5

Superior
approximately 12 o’clock

- Breast cancer in posterior depth
- And don’t miss the axillary lymph node enlargement as result of LN metastases
Case 6

On both MLO and CC:

- Locate the lesion.
- Locate the nipple.
- Is lesion above or below the nipple?
- Determine quadrant.
Case 6

Lower Inner

- Hamartoma

Lesion is below nipple = inferior / lower

Lesion is below nipple = medial / inner

Right MLO

Right CC
Case 7
CHALLENGE

On both MLO and CC:
- Locate the lesions (3).
- Locate the nipple.
- Are lesions above or below the nipple?
- Determine quadrant.
Case 7

**Upper Outer**

Two adjacent circumscribed masses

Ultrasound revealed those to be:

- Simple cyst
- Fibroadenoma

**Spiculated Mass**

- Breast Cancer
Case 7

Upper Outer (all 3)

Two adjacent circumscribed masses

Ultrasound revealed those to be:

- Simple cyst
- Fibroadenoma

Spiculated Mass

Spiculations seen on magnification, overlying the cyst

Left MLO

Left XCCL
In summary

• Recognize MLO versus CC projections
• Understand that MLO projections discern superior (upper) versus inferior (lower)
• Understand that CC projections discern lateral (outer) versus medial (inner)
• The four quadrants are used in mammography; clockface in sonography
• Understand the clockface is mirror image for lateral (outer) and medial (inner)
  (i.e. 3:00 on left is 9:00 on right, 2:00 on left is 10:00 on right, and so forth)
Final Exercise

• Label the MLO and CC views
• Label the quadrants on the clock
Final Exercise

- Label the MLO and CC views
- Label the quadrants on the clock