Top 5 Positioning Challenges in Mammography

The US Food and Drug Administration (FDA) has said that improper positioning is one of the most prevalent causes of clinical image deficiencies. Poor positioning can lead to image artifacts and missing breast tissue, which may cause cancers to be missed.

Naturally, breast imaging managers seek high-quality images that aid in the early detection of breast cancer. By understanding the positioning issues that affect image quality, they can guide their team to improved performance.

Volpara Solutions sought to identify the key positioning issues affecting mammographic quality and performed a quantitative analysis on over one million mammography studies stored in the Volpara®Enterprise™ cloud-based database.

Most common positioning issues for the MLO view

1. **Adequate pectoral muscle.** The adequate pectoral metric is achieved when the pectoral muscle angle, length, and width are captured adequately. If the pectoral muscle is not captured adequately, the result is either a narrow pectoral muscle, which indicates the potential for missed posterior breast tissue; or, conversely, a pectoral muscle with a thick axillary region, which indicates the potential for uneven compression. The thick axillary region can result in under-compression of the central and anterior breast tissue, which causes sag or droop.

2. **Inframammary fold (IMF).** Visible IMF is achieved when the inframammary fold is visualized and open. If the IMF is not well demonstrated, there is a greater likelihood that posterior-inferior breast tissue will be omitted from view.

3. **Pectoralis muscle to posterior nipple line (PNL).** An adequate pec to PNL metric is achieved when the pectoral muscle extends inferiorly to at least 1 cm above the PNL.
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Most common positioning issues for the CC view

4. **PNL length.** Adequate PNL length is achieved when the MLO PNL length minus the CC PNL length is no more than 1 cm. A shorter CC PNL length indicates that the posterior tissue may not be optimally visualized.

5. **Excessive exaggeration.** The CC should be acquired with the nipple centrally located to the breast, without medial or lateral exaggeration. This maximizes visualization of both medial and lateral tissue. Obtaining the CC with exaggeration in one direction or the other potentially omits medial tissue which is critical, as the MLO may not capture medial tissue well.

The VolparaLive! system automatically analyzes patient positioning and compression and provides real-time feedback to Technologists.

It is mammography's first real-time decision support system available at the point of care.

The feedback helps Technologists make timely decisions about whether to repeat an image, yielding:

- improved mammographic quality
- reduced technical recalls
- improved Technologist experience
- enhanced patient experience

Visit our blog to find more Helpful Positioning Tips.