Diagnostic Imaging of Inflammatory Carcinoma of the Breast with Mammography and Sonography Student Researcher: Aubrey Bullock Faculty Advisor: Karen L. Klimas, MS, R.T.(R), RDMS Thomas P Saxton Medical Pavilion, Kingston PA



Introduction to Inflammatory Carcinoma

Inflammatory Carcinoma is a very rare and aggressive type of breast cancer. Inflammatory Carcinoma typically affects younger women and is often diagnosed late or misdiagnosed, causing a high incidence of metastases (Di Bonito, Cantile, and Botti, 2019). Symptoms include: itchy breast, orange peel breast skin, nipple retraction, and warmth in breast. Inflammatory Carcinoma is characterized by the presence of many dermal tumor emboli in the papillary and reticular dermis of the skin overlying the breast (Di Bonito, Cantile, and Botti, 2019). Studies have shown that risks factors for developing Inflammatory Carcinoma include race, high BMI, and region of origin (Mamouch, Berrada, Aoullay, El Khanoussi, and Errihani, 2018).



(Very Well Health, 2019)

Case Report

- A 55-year old female presented to the clinic with complaints of increased firmness, tenderness, and increased size of the left breast with a palpable area in the outer quadrant.
- Clinical examination findings reveled no abnormalities in the right breast.
- Clinical findings also include asymmetrical breast size with left breast discoloration and some skin dimpling.
- Mammography confirmed there is diffuse left breast skin thickening, architectural distortion in the upper outer quadrant along with parenchymal edema. An asymmetrical prominent/enlarged axillary lymph node is also seen (McGarry, M. W., 2021).
- Sonography confirmed skin thickening measuring up to 0.64cm. At the 3:00 position, 9 cm from the nipple, a suspicious 2.9 x 1.8 cm irregular hypoechoic region, this is in the region of the patient's palpable firmness (McGarry, M. W., 2021).

Sonography confirmed skin thickening measuring up to 0.64cm. At the 3:00 position, 9 cm from the nipple, a suspicious 2.9 x 1.8 cm irregular hypoechoic region, this is in the region of the patient's palpable firmness (McGarry, M. W., 2021).



(Fierce Biotech, 2019)

Mammography

Mammography is the initial modality to examine the breast for diagnosis and screening. Typically, screening mammograms involve two projections of the breast: cranial caudal (CC) and mediolateral oblique (MLO). Diagnostic mammograms require special compression and magnification views for specific lesions.

Normal Mammogram vs Inflammatory **Carcinoma Mammogram**





Sonography

Sonography provides valuable information about regional lymph nodes, including axillary nodes and supraclavicular nodes (Mamouch, Berrada, Aoullay, El Khanoussi, and Errihani, 2018). Sonography works with ultrasound imaging equipment to produce cross-sectional images of anatomy and diagnostic data (Kawamura and Nolan, 2018). The sonographic appearance of the breast depends on several factors such as age and the functional state of the breast.

Normal Sonogram of Breast



(McGarry, M. W., 2021)

Sonogram of Inflammatory Carcinoma



(McGarry, M. W., 2021)

Statistics

Inflammatory Carcinoma represents 1% to 6% of all breast cancer cases (Mamouch, Berrada, Aoullay, El Khanoussi, and Errihani, 2018).

African-American women have a 50% higher incidence of Inflammatory Carcinoma than Caucasians. (Mamouch, Berrada, Aoullay, El Khanoussi, and Errihani, 2018).

About 17% to 30% of IBC cases are triple negative and 18% to 44% are epidermal growth factor receptor 2 (HER2) positive (Mamouch, Berrada, Aoullay, El Khanoussi, and Errihani, 2018).

20% to 30 of newly diagnosed IBC women have distant metastases at the time of diagnosis (Mamouch, Berrada, Aoullay, El Khanoussi, and Errihani, 2018).

A palpable mass is evident in about 30% of women with breast cancer (Watkins, 2019).



Inflammatory breast cancer 3% Paget's disease of the nipple 1%

(Larinka Health Tutor, 2016)

Conclusion

Inflammatory breast cancer is the most aggressive form of breast cancer due to its rapid growth. With advancements in imaging techniques today the diagnosis and clarification of Inflammatory breast cancer has decreased significantly. Mammography is the current standard modality but depending on the patient's pain tolerance compression can be limited. Sonography is another valuable imaging modality when evaluating for Inflammatory breast cancer because it can detect breast thickness, enlargement of lymph nodes, and palpable masses.