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Bilateral Synchronous Breast Cancer in a 55-year-old Male

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Abstract

Breast cancer in males accounts for approximately 1% of all breast cancer cases and bilateral, synchronous tumors are exceedingly rare. The authors report a case diagnosed in a 55 year-old male.

Keywords

Male breast cancer; Bilateral; Synchronous

Abbreviations

MBC: Male Breast Cancer; ER: Estrogen Receptor; PR: Progesterone Receptor; MLO: Medial Lateral Oblique; CC: Craniocaudal

Introduction

Our patient, a 55-year-old male with a history of congestive heart failure and obesity (BMI 37), underwent gastric-sleeve surgery in order to lose weight in anticipation of heart transplant. His family history was mostly unknown as he was adopted. He is the father of five children, two of whom died as teenagers of long QT syndrome, which the patient's wife also has. After weight loss, the patient noticed a right breast lump. The patient was examined by his primary care physician, who ordered an ultrasound of the area. An ultrasound was not done and the patient returned approximately 6 months later with palpable masses in bilateral breasts.

Mammogram of the right breast showed an irregular 9 cm mass in the 9-12 o'clock position with overlying skin thickening (Figure 1A, 1B). Mammogram of the left breast showed an irregular 6 cm mass in the retroareolar region containing calcifications (Figure 2A, 2B).

Subsequent ultrasound (Figures3-6) showed solid masses and axillary lymphadenopathy bilaterally. Biopsies were performed and pathology showed bilateral infiltrating ductal carcinoma, ER+/PR+/HER2+ in the right breast and ER+/PR+/HER2- in the left breast. Ultrasound-guided core needle biopsies showed disease in the left axillary lymph node, but not the right. Staging CT of the chest, abdomen and pelvis showed multiple nodules in the lungs (Figure 7). Subsequent lung nodule biopsy showed poorly differentiated carcinoma, ER+/PR-. Bone scan was negative for metastases (Figure 8). Treatment with a combination of leuprolide, letrozole and lapatinib has been initiated.

Discussion

Male breast cancer (MBC) is rare, accounting for approximately 1% of all cases of breast cancer with an incidence of approximately 1.08 per 100,000 [1,3,5]. Synchronous breast cancer, referring to primary tumors in both breasts that occur simultaneously, is even rarer. In a 2015 Pub Med search, there have been fewer than 50 reported cases in the last 50 years.

Risk factors for male breast cancer include age, family history, radiation exposure, obesity and liver disease (both due to elevated levels of estrogen), and androgen deficiency [1,2,3]. Genetic risk factors include BRCA1 and BRCA2 mutations and Klinefelter syndrome (47, XXY), among others [1,2].

Limited population-based studies of male breast cancer exist due to the relative rarity of the disease. Staging is the same as it is in women and treatment algorithms have been extrapolated from data in women. Men, in comparison to their female counterparts, are less likely to have lobular subtypes of cancer (1.5 % of MBCs are lobular, compared to 12-15% in women) [5]. They are also more likely to be ER or PR positive [5]. Male breast cancer is usually diagnosed later (mean age 67 years versus 62 years in females) and at a more advanced stage [2,4,5]. Men are 1.6 times more likely to have axillary nodal disease than women [5].

Large tumor size and nodal involvement are two important prognostic factors that independently portend decreased survival [5,6]. One study calculated a median survival time of 104 months for tumors < 2 cm compared to 35 months in tumors > 5cm ($p<0.0001$) [5]. The same study showed median survival time of 126 months for node-negative disease compared to 73 months for node positive disease ($p<0.0001$) [5]. Due to older age and later stage disease at diagnosis, overall survival is decreased in male breast cancer, but prognosis is not substantially different between men and women when corrected for age at diagnosis, stage and grade [2].

Conclusion

Male breast cancer is rare and bilateral synchronous breast cancer is even more so. Male breast cancer usually presents as a palpable lump and should warrant a hormonal and genetic work-up, specifically BRCA analysis. Staging and treatment are similar for both men and women with breast cancer. Treatment options include surgery, chemotherapy and radiation. Because it is usually diagnosed later and at a more advanced stage, overall survival is decreased, but corrected prognosis is not substantially different. The incidence of male breast cancer has reportedly been rising and it is important for physicians to consider this diagnosis in the appropriate clinical setting.

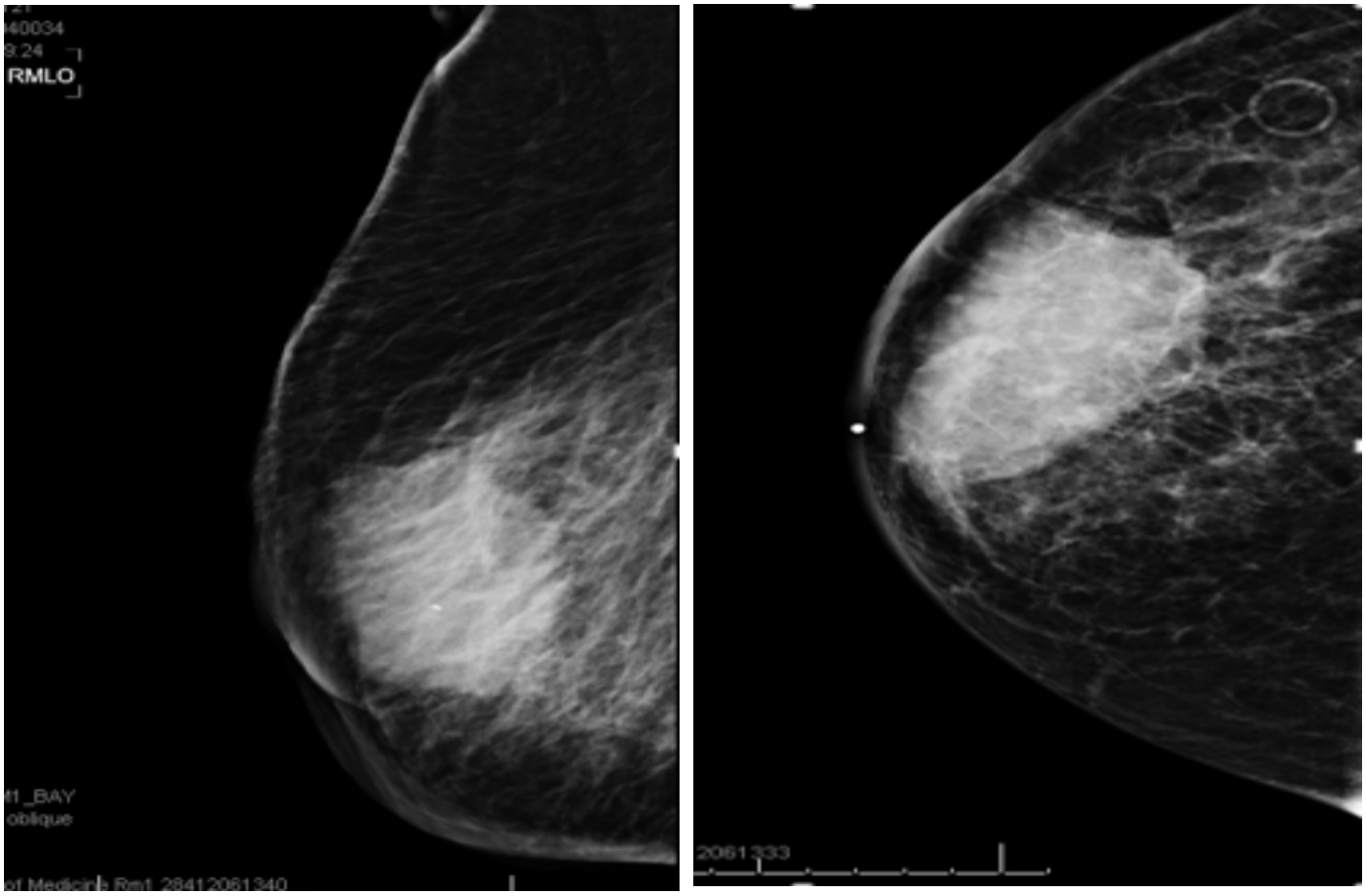

Figure 1A & 1B: Mammogram – Right Breast, MLO and CC Views

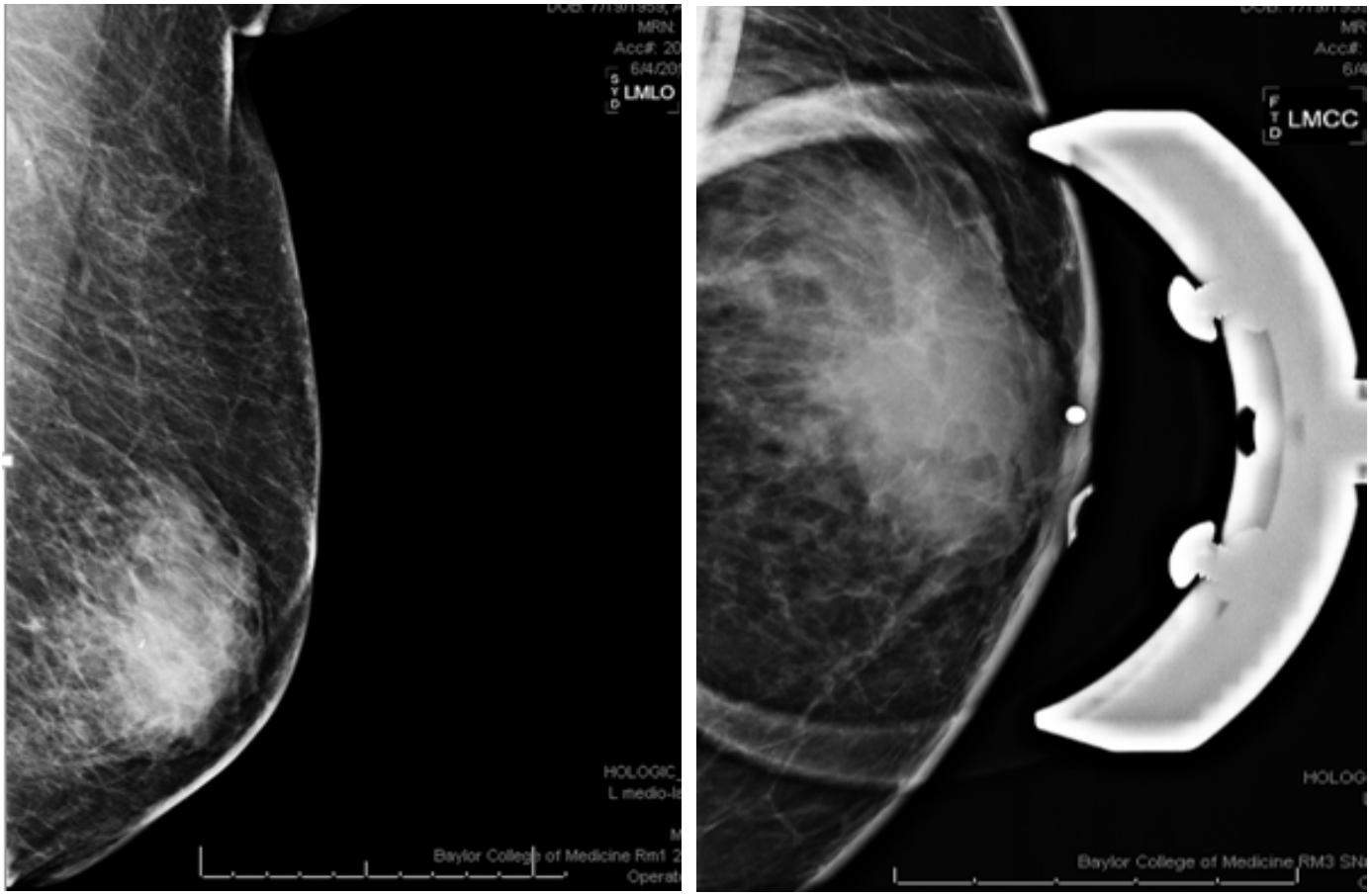

Figure 2A & 2B: Mammogram – Left Breast, MLO and Magnified CC Views

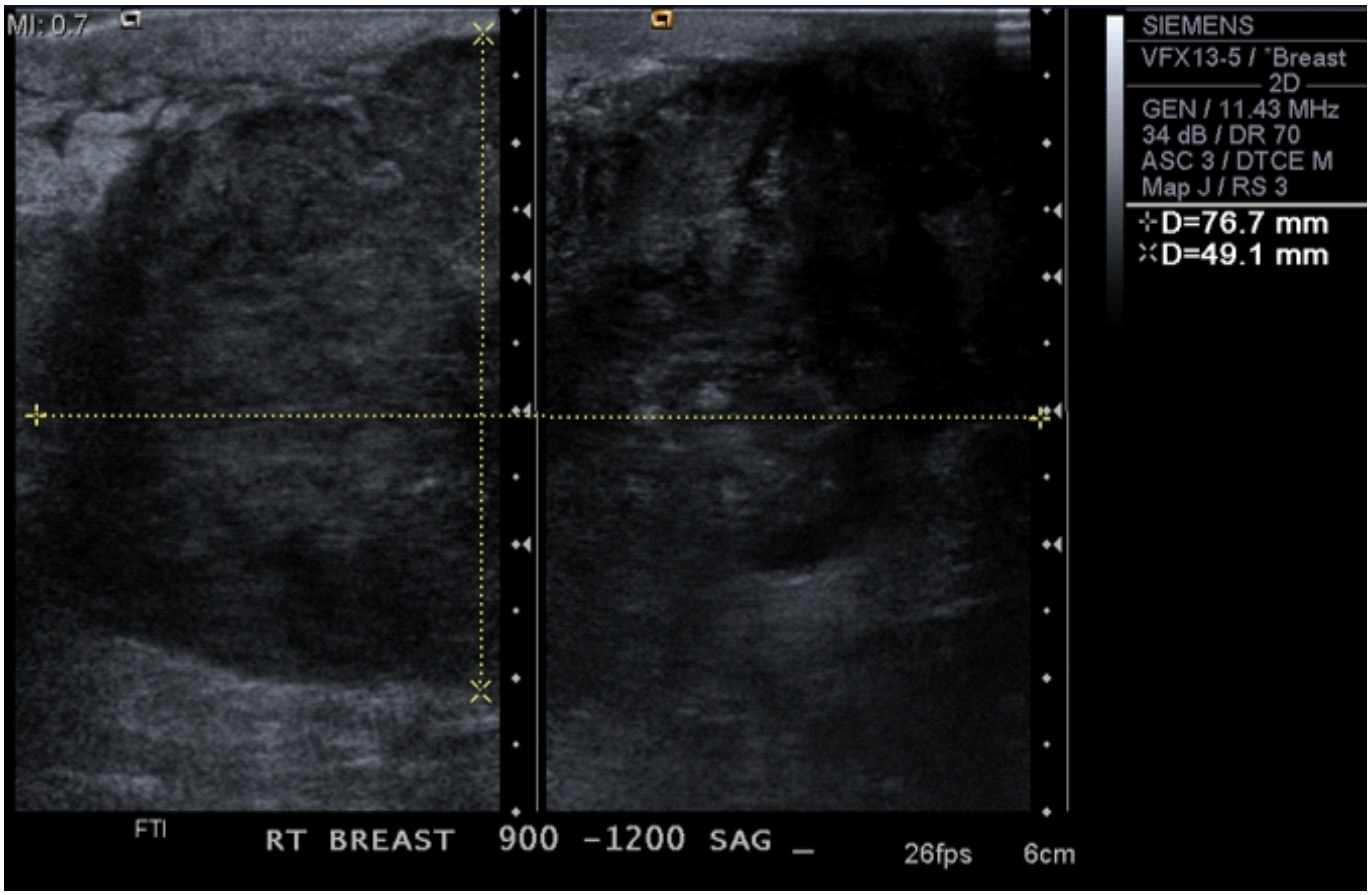

Figure 3: Ultrasound, Right Breast

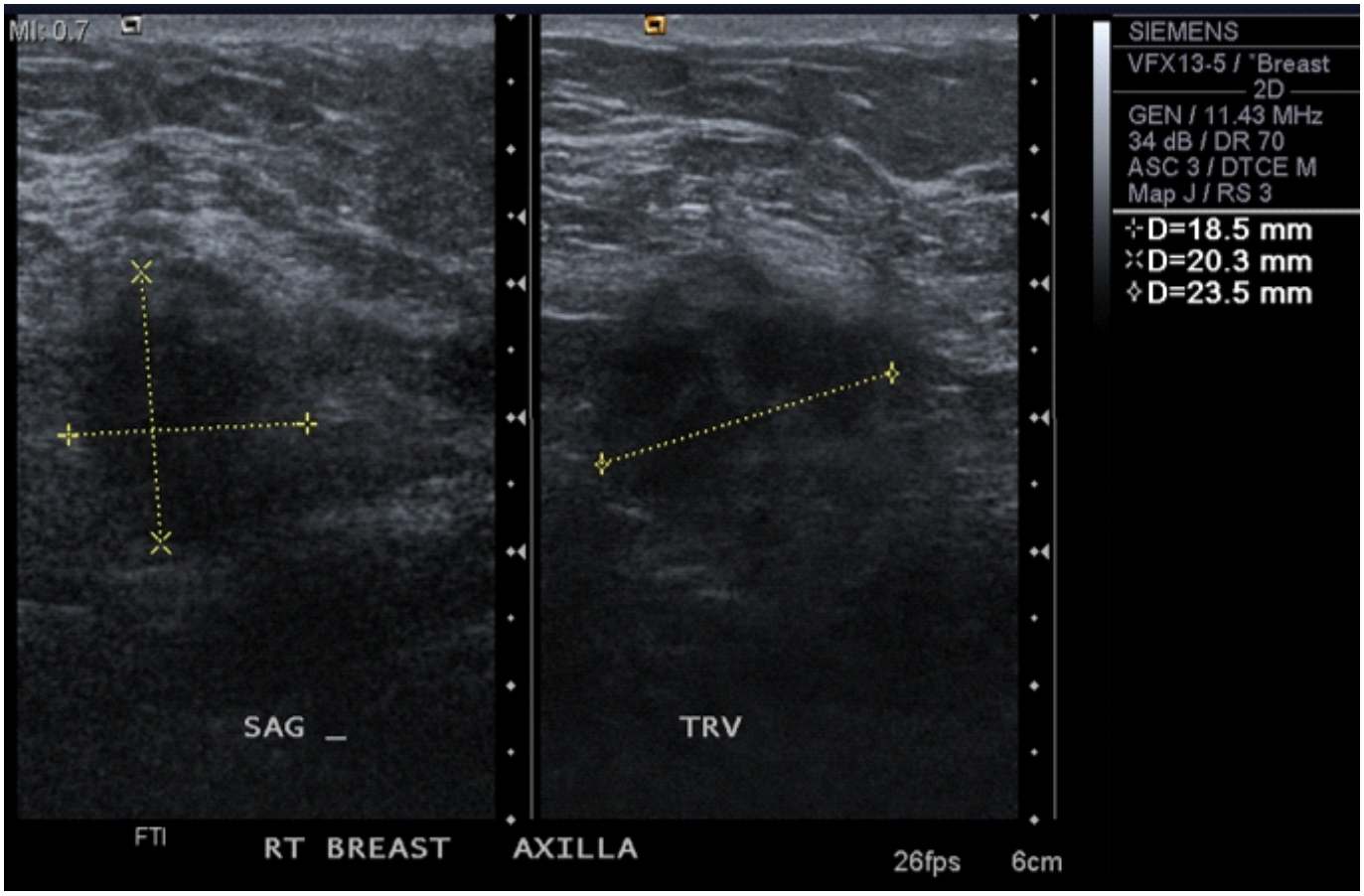

Figure 4: Ultrasound, Right Axilla

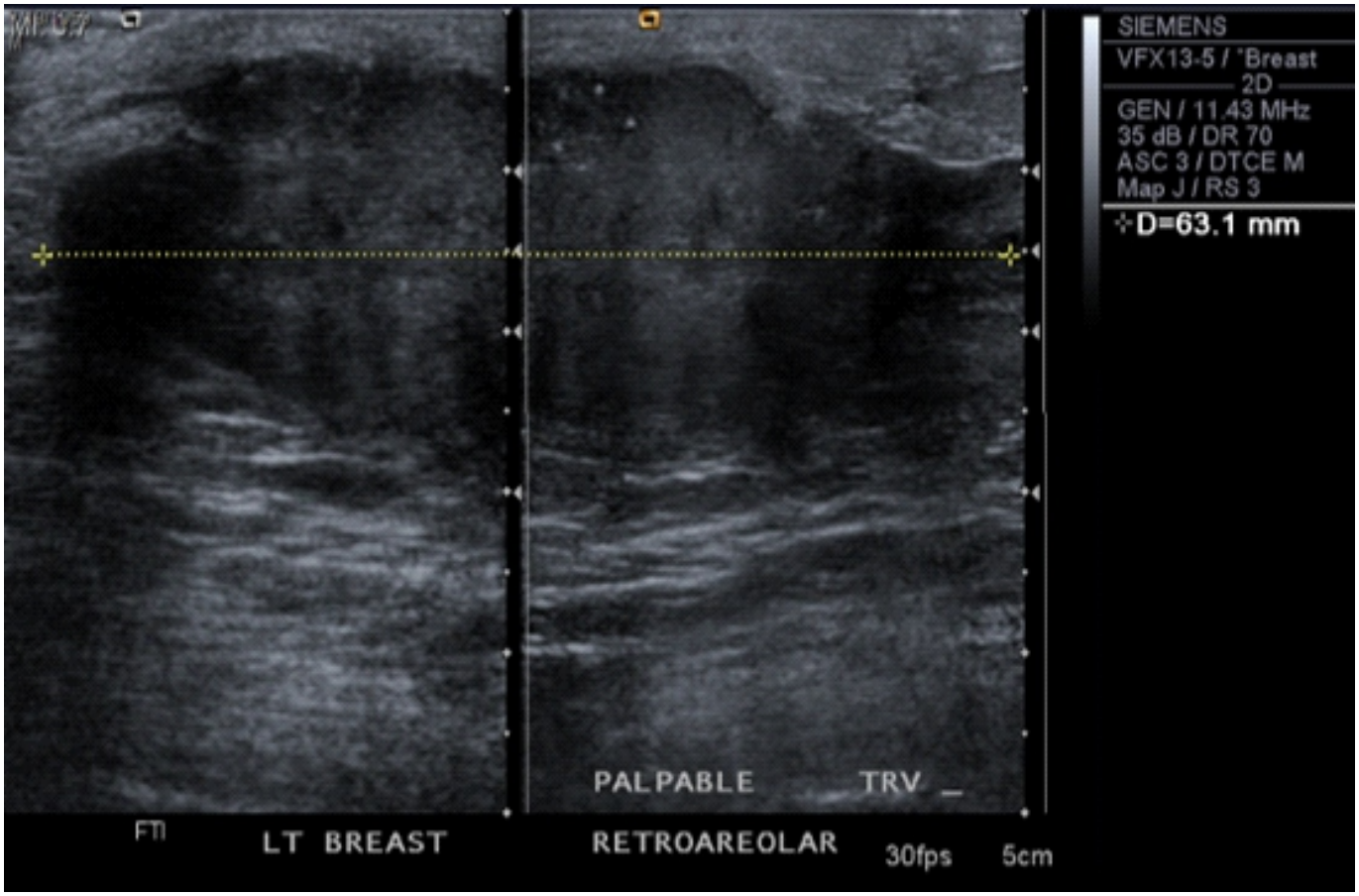

Figure 5: Ultrasound, Left Breast

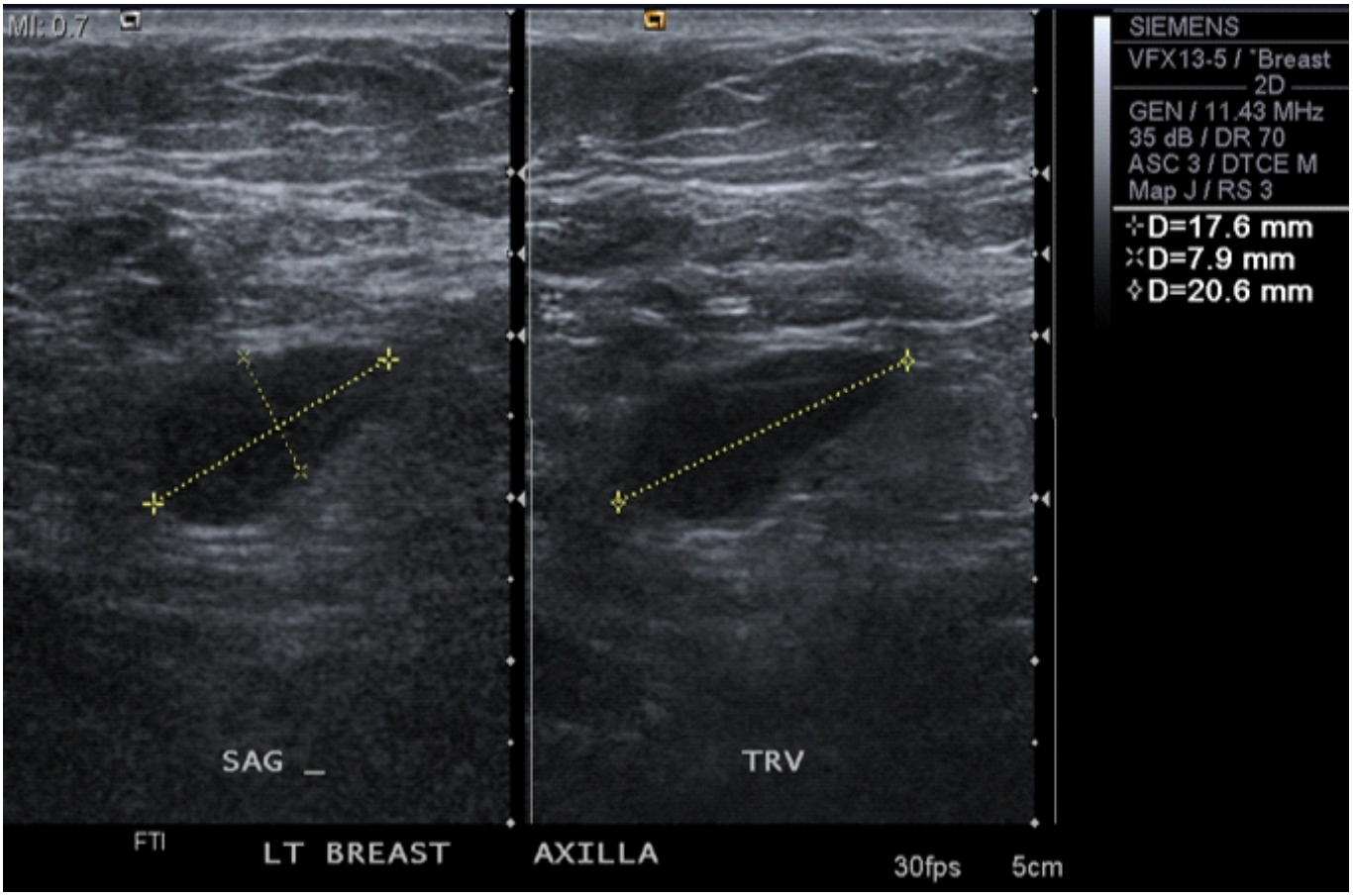

Figure 6: Ultrasound, Left Axilla

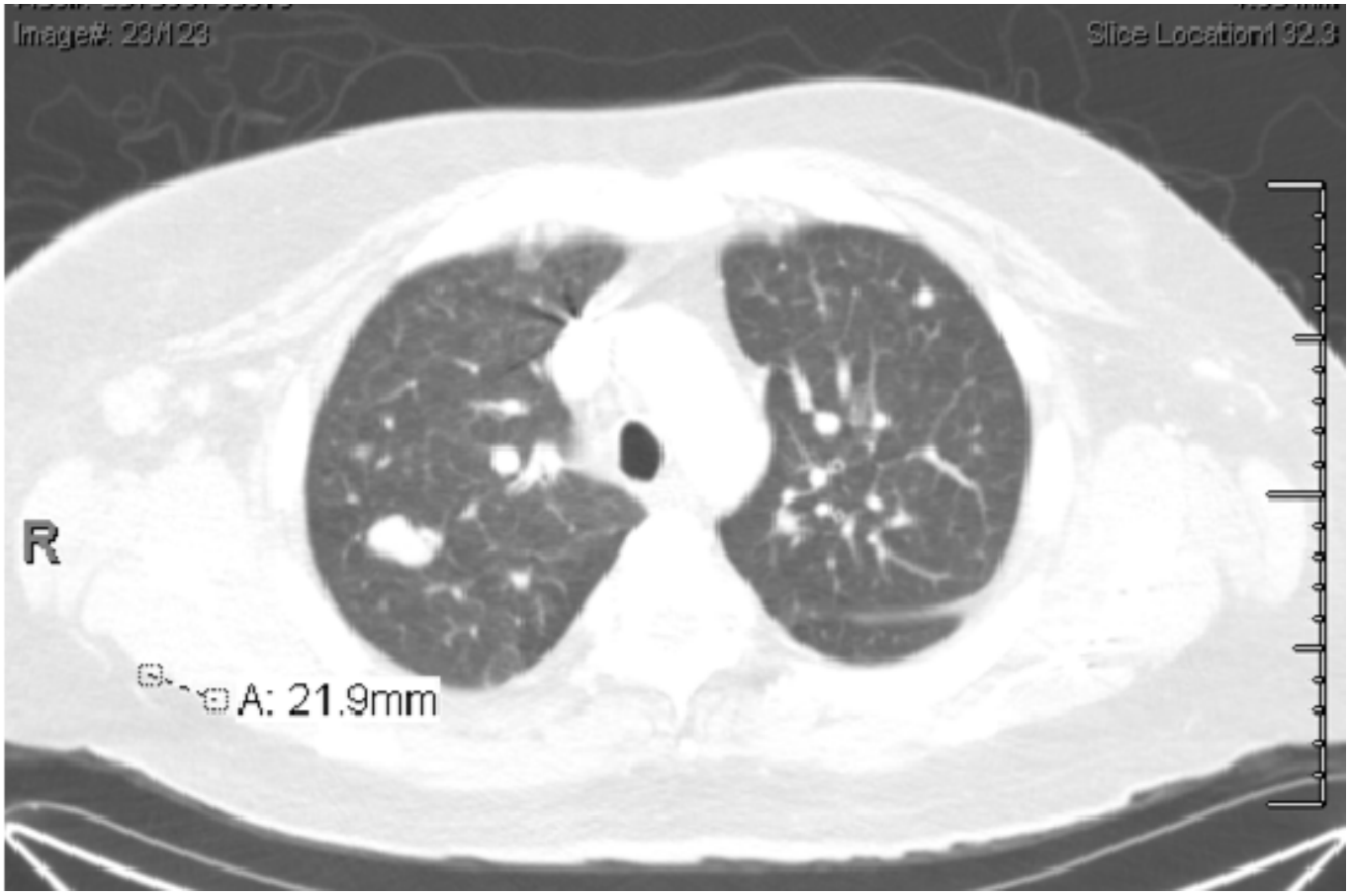

Figure 7: CT of the Chest

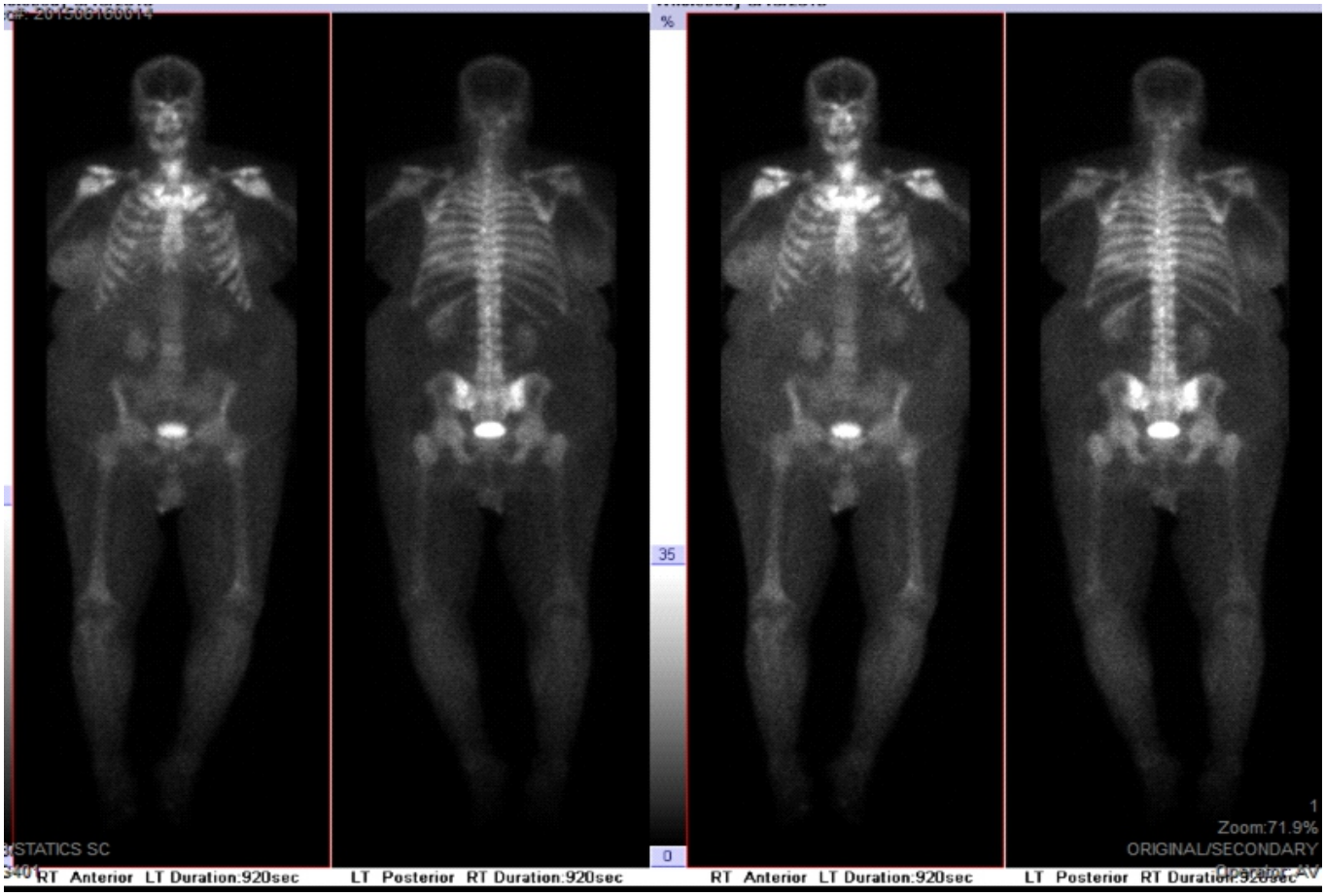

Figure 8: Whole-body Bone Scan

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