TATTOO PIGMENT ACCUMULATION IN AXILLARY LYMPH NODES

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BACKGROUND/CASE DESCRIPTION
A 44-year-old asymptomatic female presents for routine screening mammography. Patient had a negative (BI-RADS 1) screening mammogram performed one year prior. Screening mammography reveals new high density material within right axillary lymph nodes (figure 1) and the patient is recalled for diagnostic workup (BI-RADS 3).

OUTCOME
Patient returned for 6, 12, and 24 month follow-up mammograms without any change in the appearance of the remaining lymph nodes. These lymph nodes were deemed to be benign after 24 months of imaging stability (BI-RADS 2) and the patient was placed back into routine annual screening. The patient’s subsequent mammograms have remained unchanged and otherwise negative in the 4 years since returning to routine screening and the patient remains in overall good health without signs/symptoms of malignancy.

DISCUSSION & CONCLUSION
There are several different benign, malignant, and iatrogenic causes for high density foci in axillary lymph nodes. Benign causes can include sequelae of granulomatous disease such as tuberculosis, silicone deposition in the setting of extracapsular rupture of silicone breast implants, deposition of gold salts used in the treatment of rheumatoid arthritis (chrysotherapy), and the accumulation of high density tattoo ink pigments when tattoos are placed along the thorax or upper extremity. Malignant calcifications are the result of nodal metastases associated with breast or other primary malignancies, most commonly those associated with the formation of psammoma bodies including papillary thyroid carcinoma, papillary endometrial serous carcinoma, and ovarian serous cystadenocarcinoma.

Biopsy and thorough clinical history taking are key to making an accurate diagnosis in these cases, especially given that tattoo pigment accumulation can result in nodal hyperplasia, mimicking a common finding of more sinister etiologies. Accumulated pigments can persist in lymph nodes for many years even if patients have undergone laser or other tattoo removing procedures. In cases of surgical sentinel node biopsies, previous accumulation of tattoo pigments can also cause misidentification of the true sentinel node when the procedure is performed with the use of injected blue dye.

Patients presenting after nodal uptake of metallic tattoo pigments are asymptomatic with findings made incidentally on routine screening imaging or imaging ordered for other unrelated symptoms. Cosmetic tattoo ink composition is highly variable, composed of a solvent and mix of metallic pigments which can be phagocytosed by dermal macrophages which then migrate to and accumulate in lymph nodes. The vast majority (> 90%) of lymph node drainage from the trunk above the waist occurs to the ipsilateral axillary lymph nodes. The prevalence of tattoos is increasing in younger individuals, especially in women who, in recent decades, have surpassed men in the USA as being more likely to have a tattoo. Therefore, the incidence of intranodal pigment deposition is likely to become a more frequently seen phenomenon.

REFERENCES