COVID-19 vaccines and breast imaging

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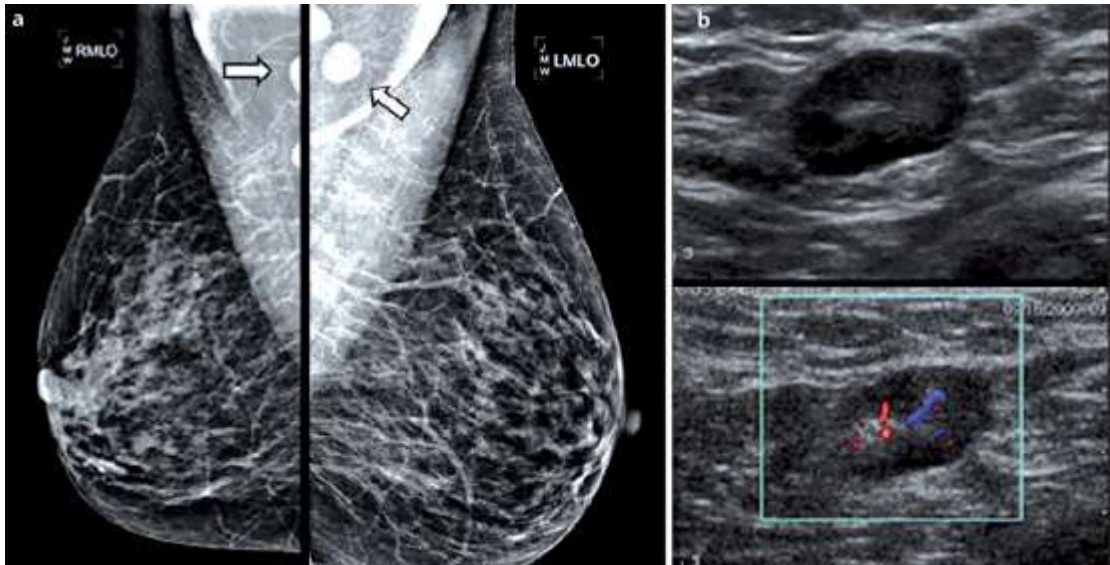
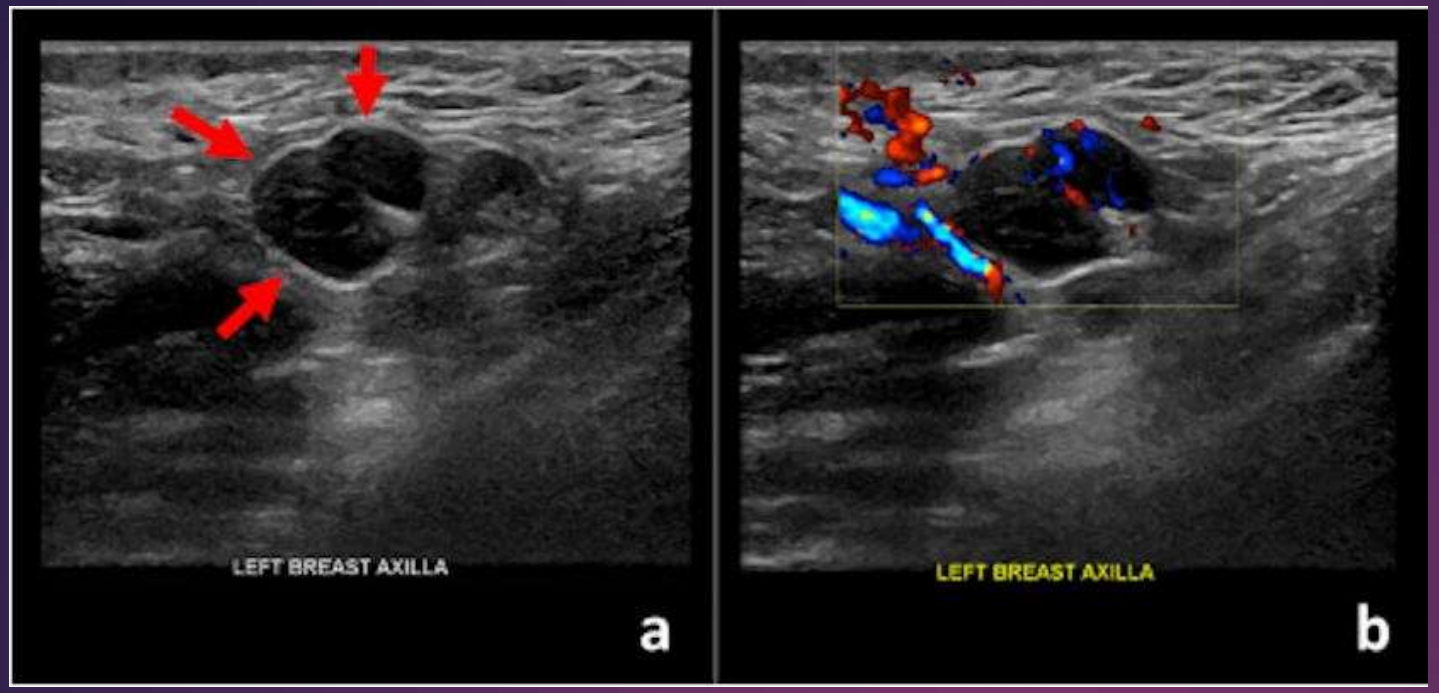
Axillary adenopathy and breast imaging

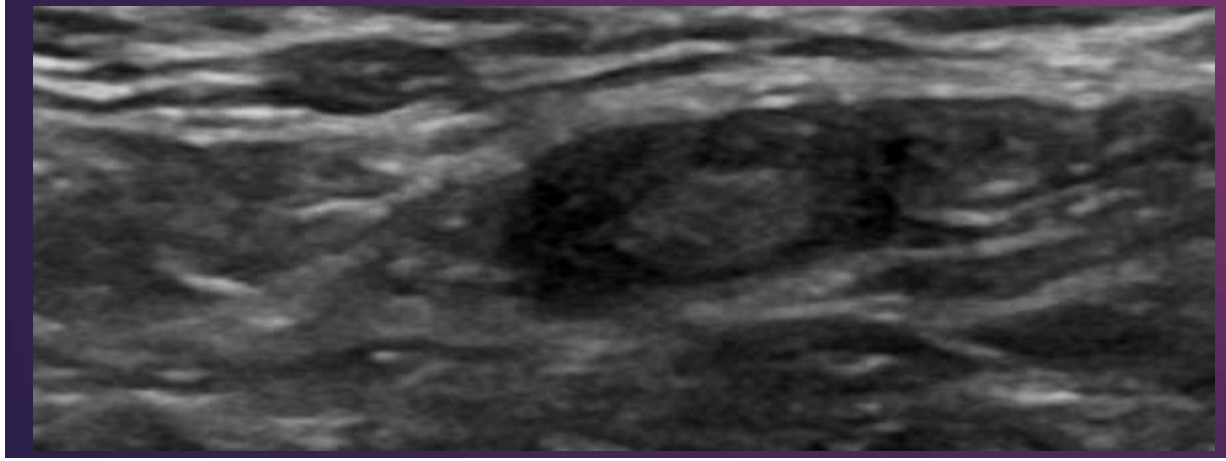
- 0.02-0.04% of screening mammos
- Malignancy rate variable 20-56%
- Axillary adenopathy has been reported following multiple vaccines (BCG, HPV, influenza)



Clinical axillary adenopathy/swelling as an adverse event (AE) to COVID-19 vaccines

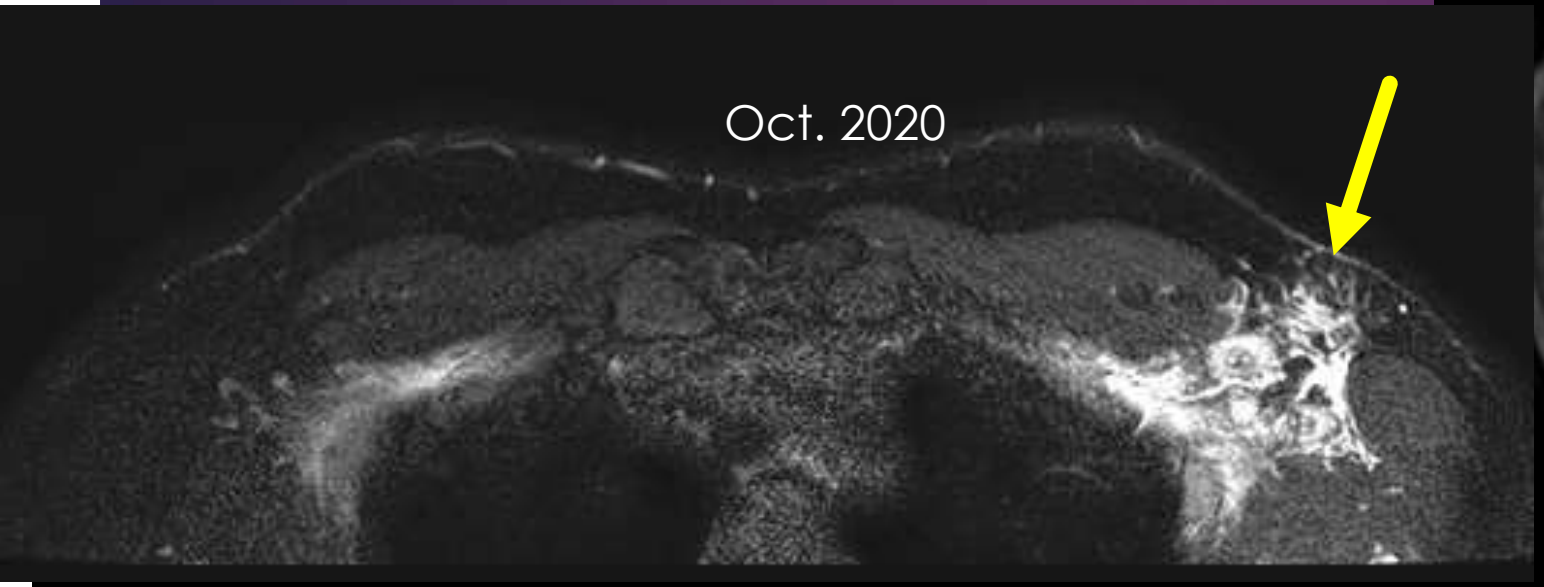
- **Moderna:**
  - **Solicited event** in 11.6% patients for first dose (vs 5% for placebo) and 16% for second dose (vs 4.3% placebo).
  - **Unsolicited event** in 1.1%
- **Pfizer-BioNTech:**
  - **Unsolicited event** (64 events vs 6 in placebo).
  - Occurred 2-4 days after admin and mean duration 10 days
- All reported AE's were based on **clinical assessment** (not imaging).
- Actual rates and durations likely higher on imaging.
- Can be seen on breast imaging but also chest CT, PET CT, etc.

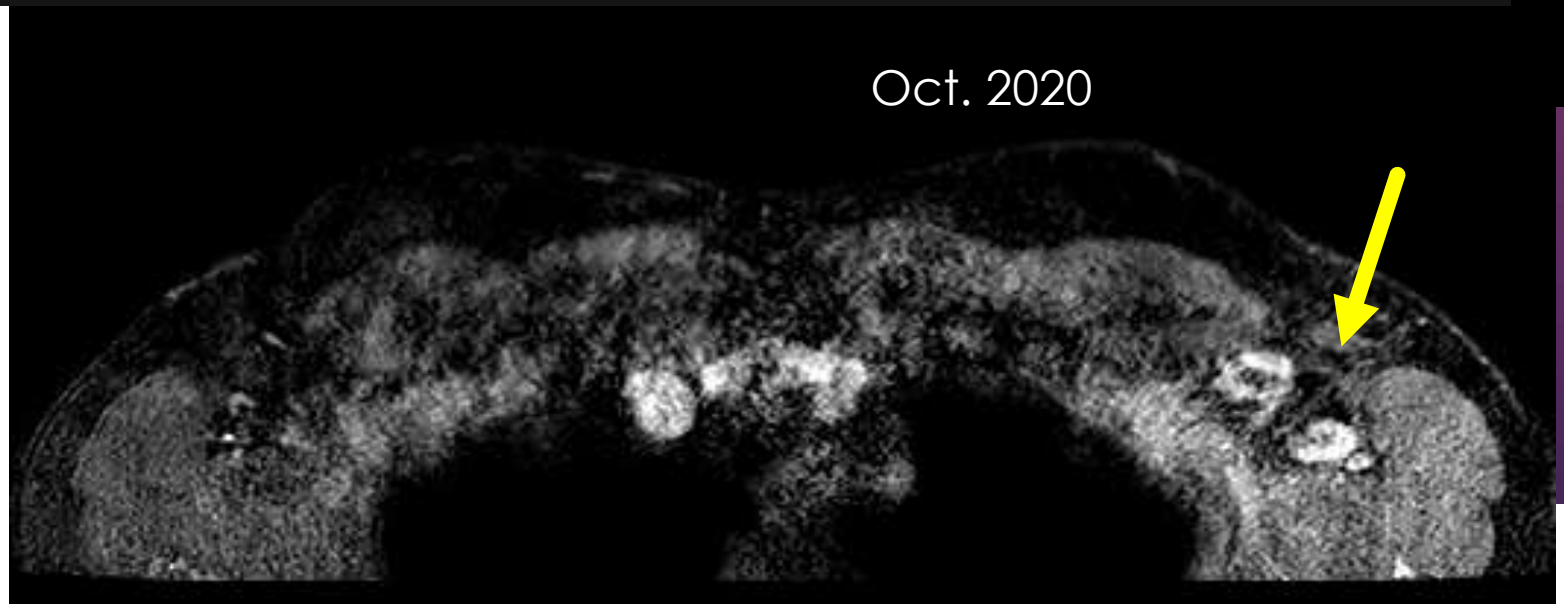




2 patients with left axillary pain and swelling S/P COVID vaccine

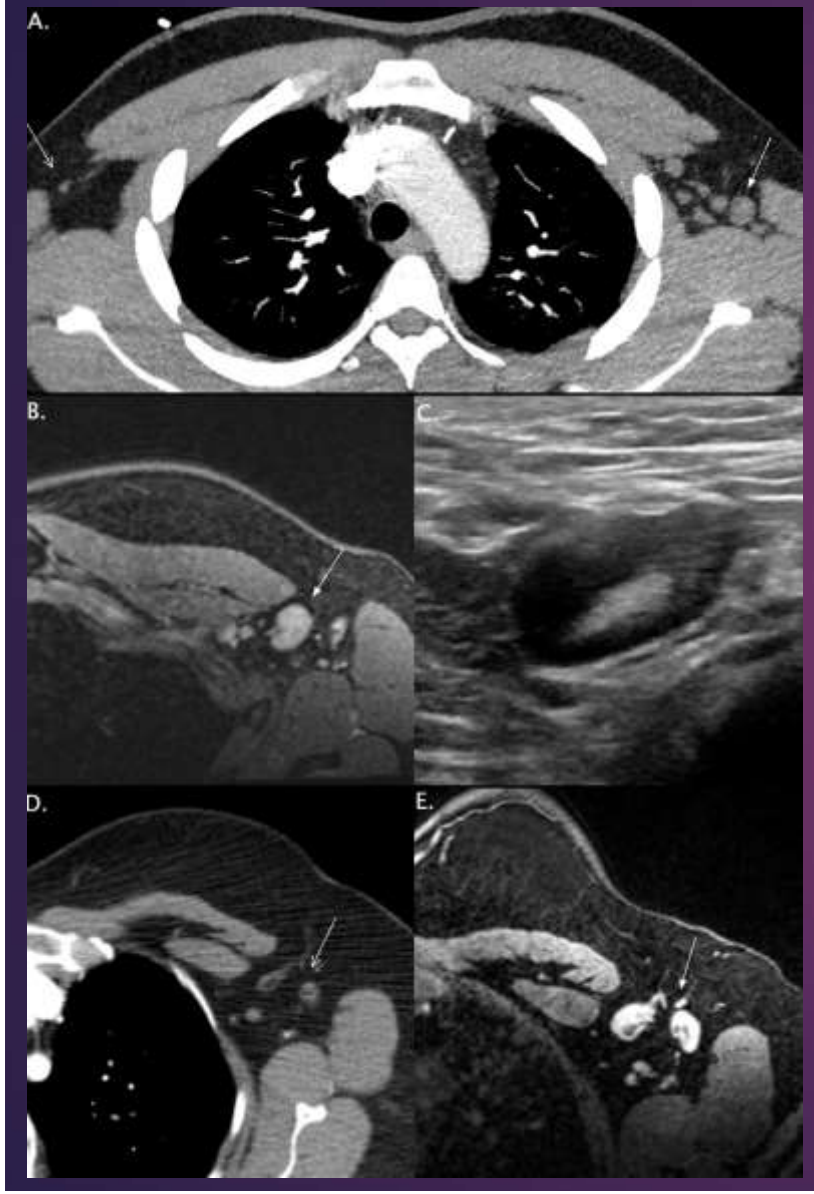
37 y.o. high risk patient for screening MRI





Influenza vaccine

Axillary Lymphadenopathy After mRNA COVID-19 Vaccination



7 days S/P second dose left arm

13 days after first dose left arm

8 days S/P vaccination

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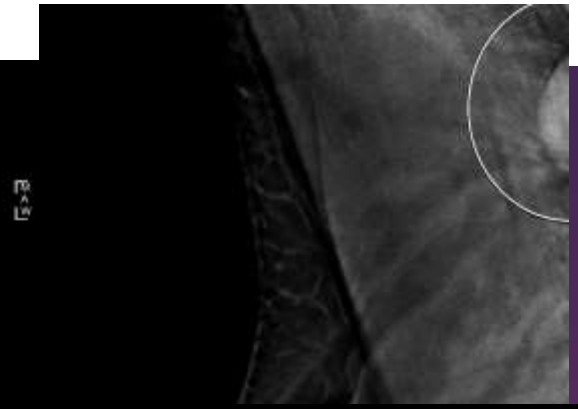
Ahn RW. Published Online: February 03, 2021
https://doi.org/10.1148/ryct.2021210008

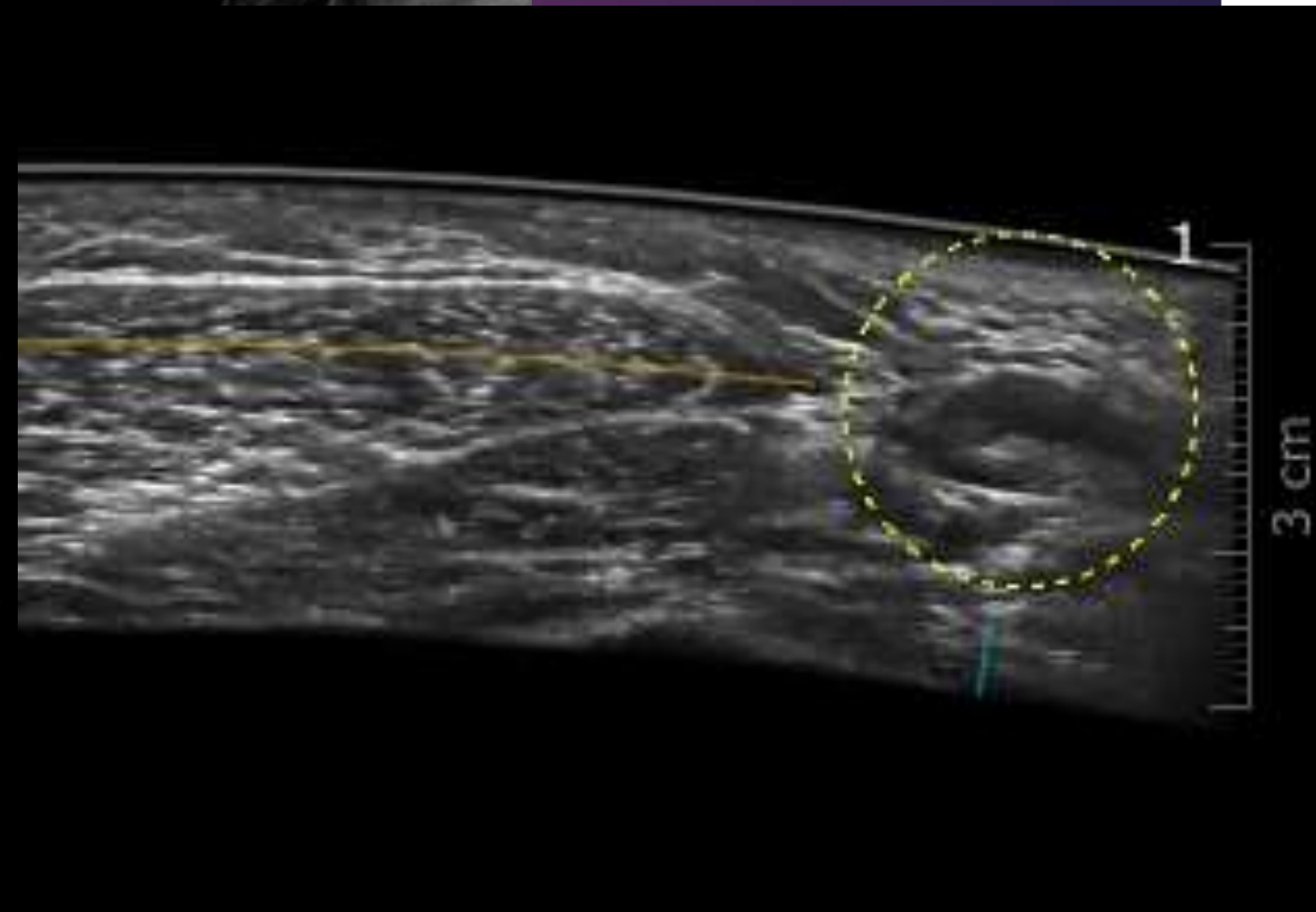
Increasing volume of patients sent in for axillary pain/swelling workups and call backs from screening for enlarged axillary nodes

- Workups and follow-ups are a huge cost for patients and for the medical system.
- Workups and follow-ups cause anxiety for patients.
- We are already behind in screening and diagnostic workups due to the pandemic.
- There will be a “tsunami” of the symptomatic and screen detected axillary adenopathy workups and follow ups, given the volume of patients to be vaccinated if we don’t do something..

SBI recommendations for axillary adenopathy seen on screening

- Unilateral axillary adenopathy on screening is **BIRADS 0**
- Following axillary US that demonstrates mildly enlarged axillary nodes (and no breast findings) and recent ipsilateral vaccine administration history, short interval follow-up in **4-12 weeks after second dose** recommended: **BIRADS 3**
- If adenopathy persists on follow-up, consider sampling
- **Recommendations and timing of follow-up imaging may change as we get more experience**

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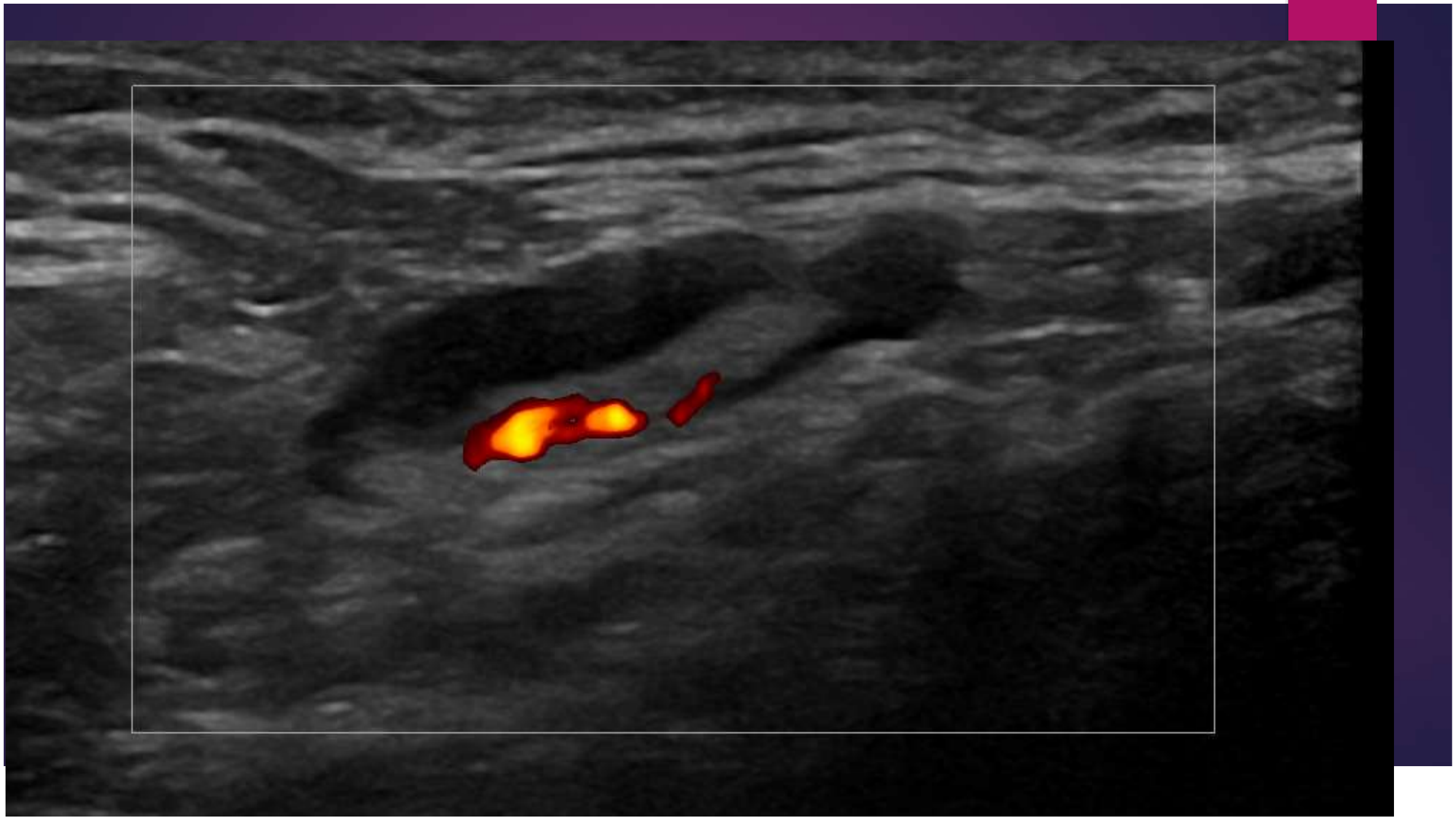
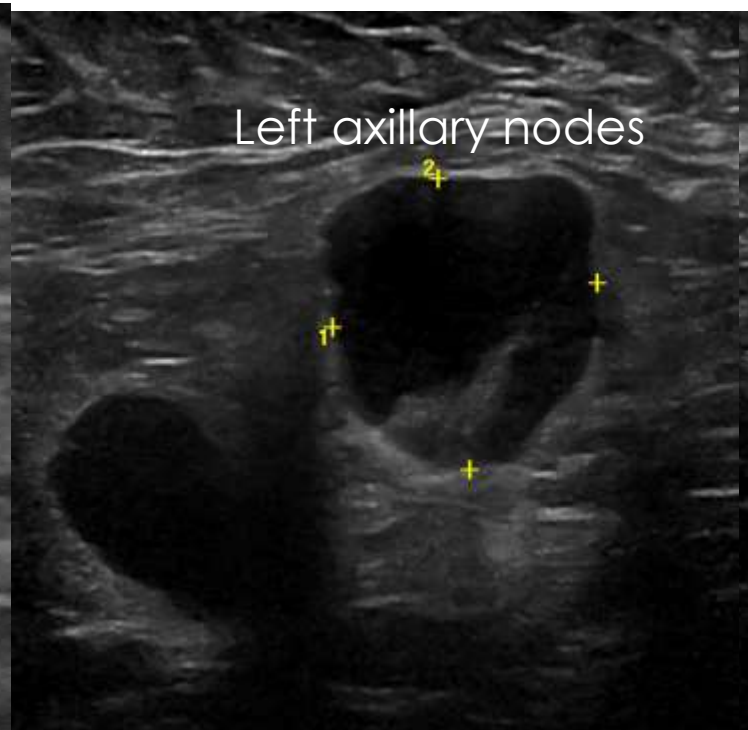


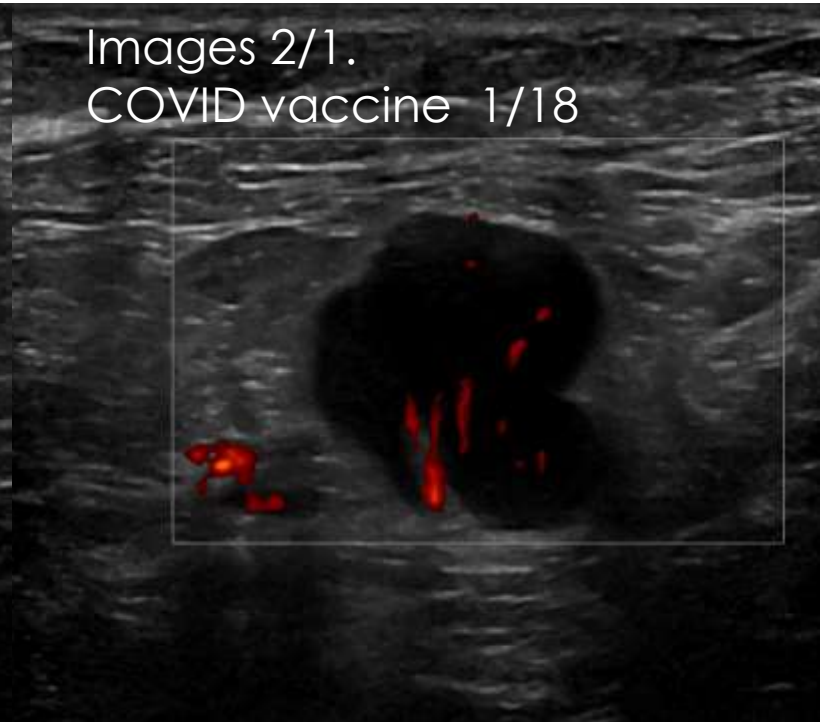
Our recommendations

- Perform screening exams either **prior to first COVID vaccine** administration or **4+ weeks after second dose.**
- If patient presents with unilateral axillary lump/swelling/tenderness, elicit history of recent ipsilateral COVID vaccine. If history present, consider delaying imaging and follow clinically in 2-4 weeks. **Explain to patients that axillary adenopathy is a normal reaction to a vaccine, a sign their body is making antibodies.**
- If resolved at f/u, no need for imaging.
- If still present in 4 weeks, proceed with diagnostic mammo and US.
- **Do not delay imaging for clinically suspicious breast or axillary lumps.**

For patients recently diagnosed with breast cancer

- While in the process of workup:
- If possible, administer vaccine in arm contralateral to breast cancer





Support for both vaccination and screening

- We strongly believe it is important for all patients to be vaccinated to mitigate the risk of COVID-19 infection.
- We also strongly believe in screening for breast cancer.
- The extra effort required to separate these two necessary health promoting endeavors will save costs, reduce anxiety, and continue to allow patients who have non-transient breast related problems to be seen and cared for in a timely manner.

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