

# Axillary Mass in a 29-Year-Old Female Following COVID-19 Vaccination

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# Patient Presentation

- A 29-year-old female with no significant past medical history presented with a palpable right axillary mass noted shortly after receiving her COVID vaccination.
- Denies concurrent fever, tenderness to palpation, overlying erythema, rash, and history of breast mass,
- She reported a recent history of COVID-19 infection 4 weeks prior and suspected the mass could be related to COVID infection or vaccination.



# Initial Differential Diagnosis

- Reactive lymphadenopathy, Infectious lymphadenopathy
  - Axillary lymphadenopathy often presents ipsilateral to the site of a recent COVID-19 vaccine
  - Vaccine-related LAP presents with cortical thickening without associated irregularity
  - The CDC reports vaccine-associated LAP persisting up to 16 days post-vaccine, with other studies reporting persistence from 4 up to 11 weeks<sup>1</sup>
- Breast cyst, or other benign changes
  - 25% of all breast masses<sup>2</sup>
  - Most common in premenopausal women, peak incidence 30-50 years
  - Clinical features: smooth, mobile, soft or firm, may be tender, single or multiple.
- Malignancy
  - Significantly less common in a patient of this age (ductal carcinoma in situ, adenocarcinoma, metastases, etc.)
  - Suspicious findings on initial presentation (BI-RADS 4 and up) as well as follow-up (BI-RADS 3 and up) should be addressed accordingly

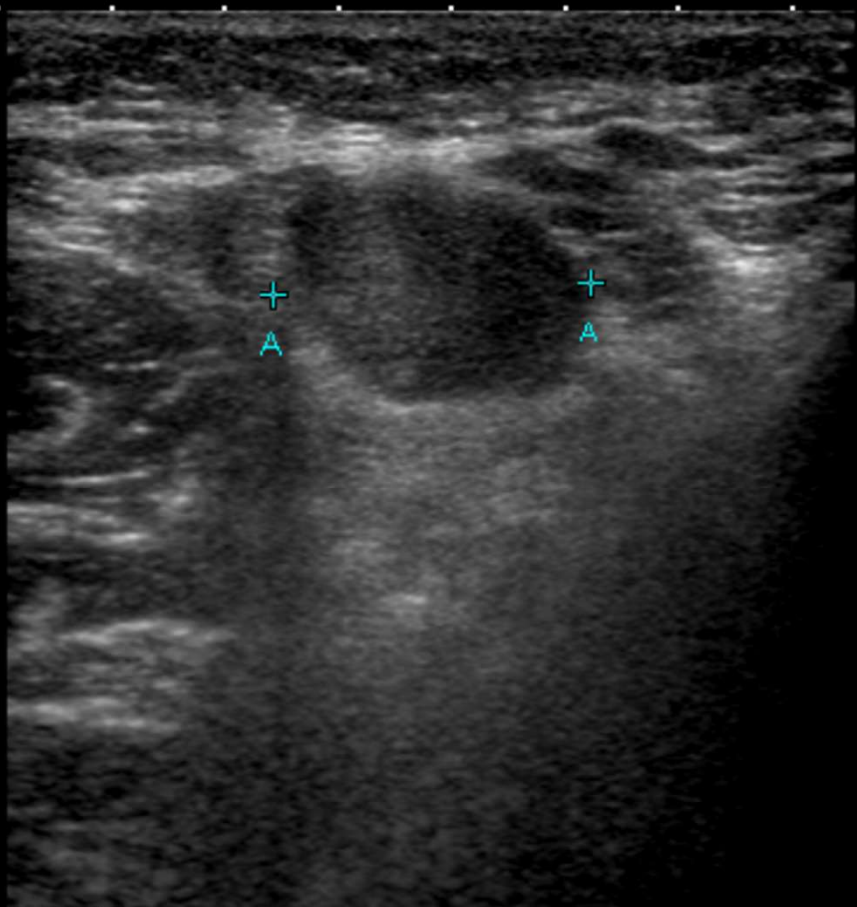


# Initial Screening

- She subsequently underwent ultrasound evaluation, which demonstrated a mildly prominent right axillary lymph node with mild hypervascularity.
- A BI-RADS 3 category was given due to probable decrease in size over time as per her own assessment.



APure



MIm:(1.1)  
Qscan  
79  
DR  
65

0 ♦  
1 ♦  
2 ♦  
3 ♦  
4 ♦

18LX7  
diffT13.0

21 fps

TRANS  
RT BREAST AXILLA 12CMFN  
PALPABLE



Dist A 14.0 mm

#30  
A2 IPO



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# BI-RADS

- Smooth, mostly uniform hypoechoic mass with well-defined borders consistent with enlarged lymph node
- 14 mm diameter
- Posterior acoustic enhancement
- No calcifications seen
- Follow-up in 6 months recommended

Category	Category1	Management	Likelihood of Cancer
0- Assessment	Incomplete Assessment	Additional imaging required	Not applicable yet
1	Negative	Routine annual screening	No cancer detected
2	Benign	Routine annual screening	0%
3	Probably Benign	Follow-up scan after 6 months or earlier, as advised by your doctor	0% to 2%
4	Probably Malign	Breast tissue biopsy recommended by the doctor	4A - 2% to 10% 4B - 10% to 50% 4C - 50% to 95%
5	Malignant	Biopsy to be done essentially	>95%
6	Biopsy- Proven Malignancy	Further treatment evaluation is done by the oncologist	Cancer already present

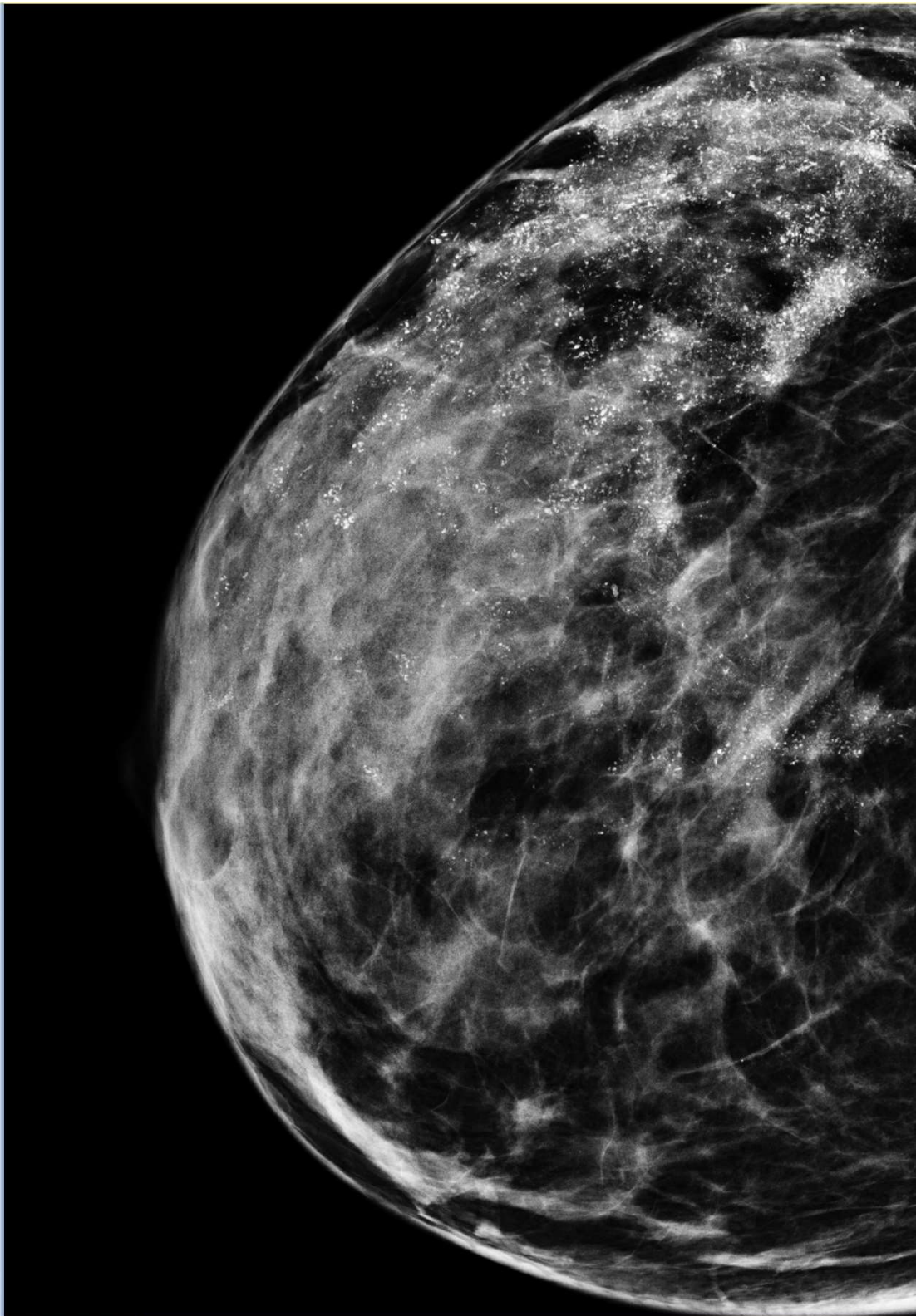
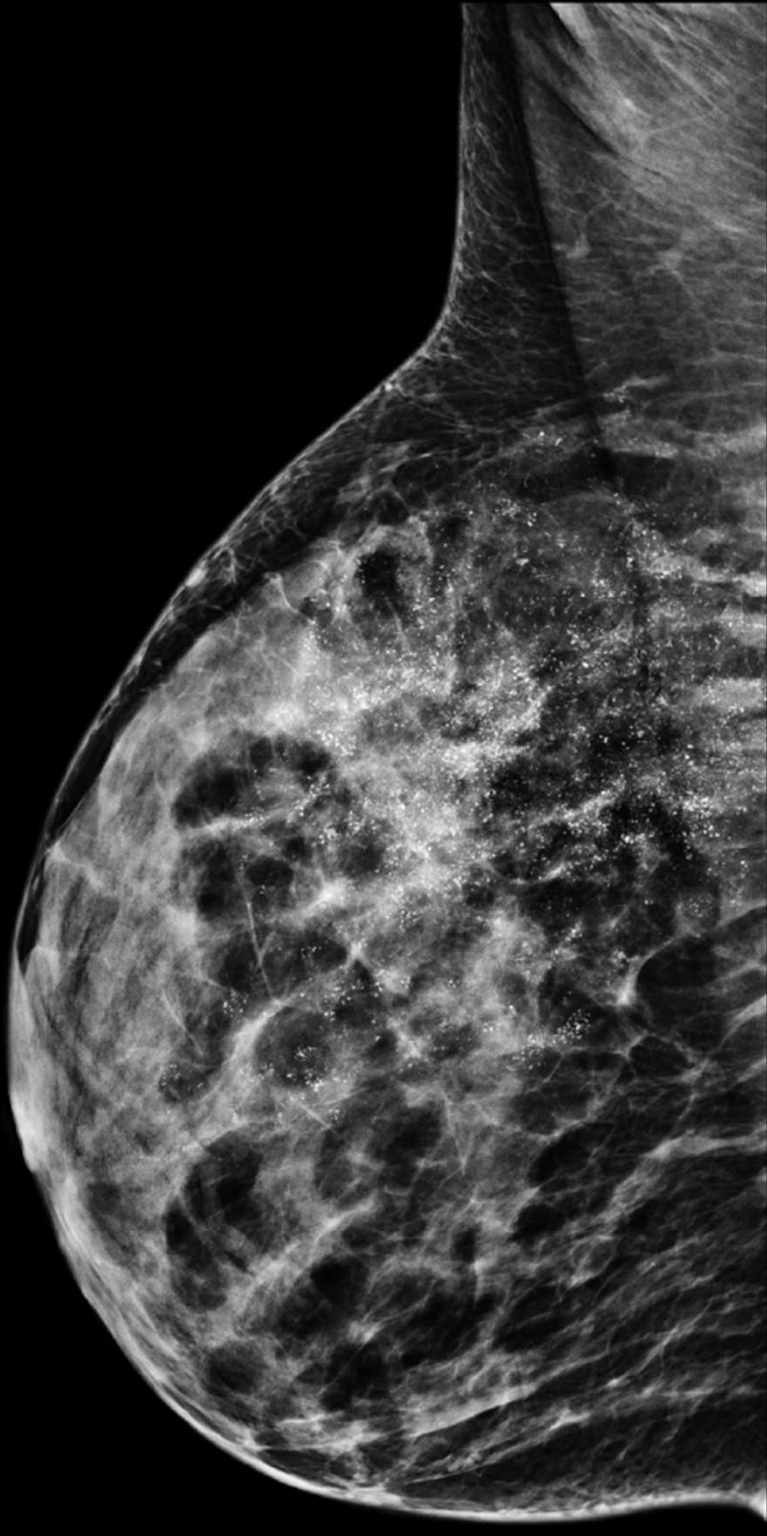


# Follow-up

- With no change in the size of the mass, the patient continued to express concern after 6 weeks (>16 days post vaccine, as per CDC guidelines)
- Follow-up was scheduled. A core-needle biopsy was performed.
- Pathology yielded invasive adenocarcinoma of ductal type.
- A mammogram of the right breast was obtained



ML  
RMLO





# Mammogram Results

- Demonstrated innumerable groups of amorphous and pleomorphic calcifications in the upper outer breast suspicious for diffuse ductal carcinoma in situ with sites of invasive components.



# Conclusion

- There is a new trend in breast cancer centers where patients are asked to note details regarding the site of COVID vaccination given the higher association with lymphadenopathy in the ipsilateral axilla.<sup>3</sup>
- Follow-up should be informed by BI-RADS guidelines—although the potential for post-vaccination LAP may be a refuting factor for more serious illness, even category 3 findings should receive a follow-up by 6 months
- The Society of Breast Imaging recommends a BI-RADS 3 score when post-vaccine LAP is suspected, with follow up in 4-12 weeks to ensure proper resolution of the mass(es)<sup>1</sup>



# Bibliography

1. Lim J, Lee SA, Khil EK, Byeon SJ, Kang HJ, Choi JA. COVID-19 vaccine-related axillary lymphadenopathy in breast cancer patients: Case series with a review of literature. *Semin Oncol*. 2021;48(4-6):283-291. doi:10.1053/j.seminoncol.2021.10.002
2. Breast Cysts. <https://www.breastcancer.org/symptoms/benign/cysts>. Updated: October 28, 2020. Accessed: May 10, 2022.
3. Locklin JN, Woodard GA. Mammographic and sonographic findings in the breast and axillary tail following a COVID-19 vaccine. *Clin Imaging*. 2021;80:202-204. doi:10.1016/j.clinimag.2021.07.015

