Ontario Health
Cancer Care Ontario

Guidance for Medical Imaging – Adenopathy Related to Vaccination – 2021-04-16

To:	Medical imaging facilities
From:	Cancer Screening and Cancer Imaging, Ontario Health (Cancer Care Ontario)
Re:	Guidance for adenopathy related to vaccination

Background

COVID-19 vaccines have been reported to cause swelling in the lymph nodes. In the Moderna vaccine trial, axillary swelling or tenderness in the vaccination arm was reported in approximately 12% of participants following dose 1 and 16% of participants following dose 2 of the vaccine[1]. For the Pfizer-BionNTech vaccine, lymphadenopathy was reported as an unsolicited adverse event in 64 participants in the vaccine group compared to the 6 in the placebo group[2]. The rates of lymphadenopathy reported in the trials were based on physical examination; rates incidentally detected in general medical imaging will likely be higher.

Due to the mass COVID-19 vaccination underway in Ontario, lymphadenopathy is expected to be increasingly detected by radiologists when interpreting images related to the neck, shoulder and chest, as well as in breast imaging. This document provides recommendations for vaccine-related lymphadenopathy following COVID-19 vaccination. The recommendations were developed in consultation with Ontario Health (Cancer Care Ontario) clinical, imaging and primary care leads, and consider the most recently available information[3],[4]. Similar guidance specific to breast imaging in the context of the Ontario Breast Screening Program (OBSP) has been addressed in *Guidance for OBSP Sites – Adenopathy Related to Vaccination – 2021-04-05.* The evidence on management of lymphadenopathy continues to evolve and this guidance may be updated as new information emerges.

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[1] Local Reactions, Systemic Reactions, Adverse Events, and Serious Adverse Events: Moderna COVID-19 Vaccine [Internet]. Centers for Disease Control and Prevention; [updated 2020 Dec 20; cited 2021 Mar 21]. Available from: https://www.cdc.gov/vaccines/covid-19/info-by-product/moderna/reactogenicity.html

[2] Local Reactions, Systemic Reactions, Adverse Events, and Serious Adverse Events: Pfizer-BioNTech COVID-19 Vaccine [Internet]. Centers for Disease Control and Prevention; [updated 2020 Dec 13; cited 2021 Mar 21]. Available from: https://www.cdc.gov/vaccines/covid-19/info-by-product/pfizer/reactogenicity.html

[3] Becker AS, Perez-Johnston R, Chikarmane SA, Chen MM, El Homsi M, Feigin KN, Gallagher KM, Hanna EY, Hicks M, Ilica AT, Mayer EL. Multidisciplinary Recommendations Regarding Post-Vaccine Adenopathy and Radiologic Imaging: Radiology Scientific Expert Panel. Radiology. 2021 Feb 24:210436.

[4] A summary of the current status of the literature and considerations are noted in Tu W, Gierada DS, Joe BN. COVID-19 Vaccination-Related Lymphadenopathy: What to be Aware of. Radiology: Imaging Cancer. Epub 2021 Apr 9. Available from: https://pubs.rsna.org/doi/10.1148/rycan.2021210038

Recommendations

1. **Collect COVID-19 or other recent vaccination* information (within the last 3 months) and provide it to the interpreting radiologist.**
   Facilities should collect vaccination status, dates of vaccination for the first and second dose (as applicable), side of vaccination and vaccine type (e.g., Moderna), if known.

   *Other vaccines may also cause adenopathy. Facilities are advised to collect information on all recent vaccination for their patients.

2. **Where possible and when it does not unduly delay care, schedule imaging appointments that cover the axilla, neck, shoulder and chest before patients receive the COVID-19 vaccine, or 6 weeks after vaccination (either after the first or second vaccine dose) to allow for reactive lymphadenopathy to resolve.**
   - This scheduling guidance should be incorporated based on the facility's available resources to reschedule appointments and use imaging resources appropriately; where rescheduling is not feasible, ensure that vaccination information is collected.
   - Patients that report vaccination history less than 6 weeks at the time of their appointment may be advised of the possibility of lymphadenopathy but do not need to be rescheduled. Where possible, provide participants the choice to rebook if they prefer.

3. **Provide patients with information regarding vaccine-related lymphadenopathy.**
   The following information can be provided to vaccinated patients to help reduce anxiety:
   - *If you recently got the COVID-19 or other vaccine, you may have swelling in the lymph nodes on the side you got the injection (around or in your armpit or neck). This swelling is your body's normal reaction to the vaccine and is a sign that your body is making antibodies in response to the vaccine*
   - *If lymph node swelling is seen on your imaging test, the radiologist may ask you to come back for additional imaging to check that the swelling has gone away*
   - *If you notice swelling in your lymph nodes after vaccination, and it lasts for more than 6 weeks after your vaccination, you should let your family doctor or nurse practitioner know*

4. **Management of vaccine-related lymphadenopathy in medical imaging.**
   Vaccines are known to cause lymphadenopathy. This is a reaction to the vaccine and related to antibody production. If lymphadenopathy is detected within 4 weeks of vaccination and is ipsilateral to the vaccination site, management should be based on available clinical history as in Table 1.

Table 1: Management recommendations for vaccine-related lymphadenopathy in medical imaging

Type	Scenario	Management recommendation
Non-palpable*	Clinical and vaccination history is available, lymphadenopathy is likely due to vaccination	• This finding could be considered benign. • Radiologists should recommend that the primary care provider follow up with the patient to ensure that no lymph nodes are palpable 6 weeks after most recent vaccination.

Non-palpable*	Clinical and/or vaccination history insufficient, or participant is at risk from other etiology (e.g., high risk lung screening patients, cancer surveillance imaging patients)	• Patient should be recalled for further assessment.
		• Following appropriate diagnostic assessment:
		  ○ Patient may undergo short interval follow up, a minimum of 6 weeks after their last imaging test. Consider timing of second vaccine dose with respect to follow up imaging when appropriate.
		  ○ Follow up imaging using ultrasound is recommended.
		  ○ Unresolved lymphadenopathy should undergo further assessment.

Palpable	E.g., referral from primary care provider
	
	Note: Primary care providers have been asked to monitor their patients with suspected vaccine-related adenopathy clinically for 6 weeks from the date of vaccination. If adenopathy persists after 6 weeks, in-person physical examination and imaging is advised.
		• Diagnostic assessment with ultrasound and mammography (where relevant) is recommended.
		• Following appropriate diagnostic assessment:
		  ○ Patient may undergo short interval follow up, a minimum of 6 weeks after their last imaging test. Consider timing of second vaccine dose with respect to follow up imaging when appropriate.
		  ○ Follow up imaging using ultrasound is recommended.
		  ○ Unresolved lymphadenopathy should undergo further assessment.

*Similar guidance has been provided for axillary adenopathy detected in the OBSP.

5. **Radiologists should note all suspected vaccine-related lymphadenopathy in imaging reports for the awareness of the primary care provider.**