

COVID-19 Intramuscular Vaccines and Shoulder Injuries

The roll-out of coronavirus disease-2019 (COVID-19) vaccines has begun and it is extremely important that clinicians who administer the vaccine know and understand correct intramuscular (IM) administration technique to avoid a serious adverse event called shoulder injury related to vaccine administration (SIRVA).

SIRVA results from incorrectly injecting a vaccine into the shoulder capsule (joint) rather than the deltoid muscle. This can happen when the wrong IM injection technique is used or the injection site into the deltoid muscle is not correctly landmarked. The vaccine may be injected instead into and around the underlying bursa of the shoulder. Trauma may be caused by the needle as well. This may cause inflammation and injury to the tendons, ligaments and bursae. Symptoms of SIRVA include persistent shoulder pain, weakness, and reduced range of motion that develops within hours to a few days after receiving the vaccine. Symptoms may not improve with over-the-counter analgesics.

Strategies to prevent SIRVA include:

- Knowing the anatomical landmarks that identify the central and thickest part of the deltoid muscle
 - Identify the upper border of the injection zone - below the shoulder capsule, approximately 2 to 3 finger widths (2 inches) below the acromion process (the bony prominence above the deltoid)
 - Identify the lower border of the injection zone - above the level of the armpit
- Use correct IM administration technique
 - Inject the needle using a 90-degree angle
 - Do not inject too high (near the acromion process) or too low; injections below or too far to the side of the deltoid muscle could hit the radial or axillary nerve resulting in neuropathy or paralysis
 - Do not “eyeball” the injection site

Reference

1. Institute for Safe Medication Practices. (2020). *Nurse Advise-ERR*. Retrieved from Institute for Safe Medication Practices: <https://www.ismp.org/nursing/medication-safety-alert-january-2021>