Azd-1222/sars-cov-2-vaccine-inactivated-sinovac-biotech

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Shoulder injury related to vaccine administration following medication error: 7 case reports

A retrospective chart review was performed for 7 patients (including 4 men and 3 women) aged 51-71, who developed shoulder injury related to vaccine administration (SIRVA) following an improper injection technique for the vaccination with AZD-1222 or sars-cov-2-vaccine-inactivated-sinovac-biotech between April 2021 and October 2021.

Case 1: The 52-year-old man developed right shoulder pain on day 2 after an injection of sars-cov-2-vaccine-inactivated-sinovac-biotech [Sinovac] vaccination. At the time of vaccine administration, the direction of the needle was oblique to the skin cephalad. He began to experience severe and persistent shoulder pain on day 2 which did not improve, and he came to the orthopedic clinic 6 days following the injection. Physical examination shoed pain on all motion directions of his right shoulder and a low-grade fever. An MRI showed subacromial bursitis. He was diagnosed with SIRVA. Later, he was admitted and treated with cefazolin and celecoxib. Further, cefazolin was changed to cephalexin. After 1 day, his fever resolved, and he was discharged on day 4 after switching to an unspecified antibacterial [antibiotic]. Over the following few days his symptoms gradually improved, and he could move his shoulder with a full range of motion in all directions.

Case 2: The 51-year-old woman received an injection of Azd-1222 [Oxford-AstraZeneca COVID-19 vaccine]. At the time of administration, the direction of the needle was perpendicular to the skin. After 3 hours, she developed right shoulder pain with limited range of motion. After 4 days, the pain did not improve, and she came to the orthopedic clinic. Physical examination revealed pain with limited range of motion in all directions. An MRI showed combined subacromial-subcoracoid bursitis. She was diagnosed with SIRVA. Then, she was treated with prednisolone. Within 3 days, the pain and range of motion improved.

Case 3: The 66-year-old man developed the right shoulder pain immediately after an injection of second dose of Azd-1222 [AstraZeneca] vaccine. At the time of administration, the injection landmark was 3 fingerbreadths below the mid-lateral edge of the acromial process. The direction of the needle was 30 cephalad to the skin. The pain was severe enough to disturb his normal life activities. The pain did not improve after 7 days, then, he came to the orthopedic clinic. Physical examination revealed tenderness over the deltoid area and limited range of shoulder motion in all directions. He was diagnosed as SIRVA and treated with prednisolone. After 6 hours, his clinical symptoms improved. He had limited movement in his shoulder in 2 days and full return to normal functions in 7 days.

Case 4: The 71-year-old man developed the left shoulder pain one day after a second dose of Azd-1222 [AstraZeneca] vaccine. The injection was given with a 1.5-inch 25-gauge needle and the landmark was 1 fingerbreadth below the mid-lateral edge of the acromial process. The needle direction was perpendicular to the skin. His pain did not improve after 6 weeks, and he finally came to the orthopedic clinic. An MRI of the right shoulder showed a thin layer of subacromial-subcoracoid bursitis and a low-grade partial tear of the supraspinatous tendon. He was diagnosed with SIRVA. He was treated with prednisolone. After 1 day, his pain improved. Within 2 weeks, his condition resolved.

Case 5: The 68-year-old woman developed the right shoulder pain with limited range of motion 24 hours after a second dose of AZD-1222 [AstraZeneca] vaccine. The vaccination landmark was 3 fingerbreadths below the acromial process and the needle direction was 45 degrees cephalad to the skin. Her symptoms persisted for 14 days without improving. The symptoms were worse at night and she could not lay on her right shoulder. Clinical examination showed tenderness at the deltoid muscle. An ultrasonography showed a thin layer of subdeltoid bursal fluid and a partial thickness tear of the subscapularis tendon. She was diagnosed with SIRVA and was treated with prednisolone. After a week, her symptoms improved.

Case 6: The 64-year-old man received his first dose of Azd-1222 [AstraZeneca] vaccine. The vaccination landmark was 3 fingerbreadths below the acromial process with a needle direction of 30 degrees cephalad to the skin. After 48 hours, he developed right shoulder pain with limited range of motion in all directions. When the symptoms did not improve in a month, he visited orthopedist. Physical examination showed tenderness at the deltoid muscle with limited range of motion in all directions. An ultrasonography demonstrated tenosynovitis at the long head of the biceps and a low-grade partial tear of the subscapularis tendon. He was diagnosed with SIRVA and was treated with prednisolone and triamcinolone acetate. Eventually, his shoulder pain improved, and he could return to normal activities within 7 days after treatment.

Case 7: The 64-year-old woman presented with right shoulder pain 9 weeks after a first dose of an injection of Azd-1222 [AstraZeneca] vaccine. She developed the symptoms immediately after the vaccination and gradually gotten worse. The injection landmark was 1 fingerbreadth below the mid-lateral edge of the acromial process. Physical examination revealed limited range of right shoulder motion. Ultrasonography reveled calcific tendinopathy of the supraspinatous tendon without bursitis. She was diagnosed with SIRVA and was treated with prednisolone. After 1 month, she completely recovered.

1. Chuaychoosakoon C, et al. Shoulder injury related to Sinovac COVID-19 vaccine: A case report. Annals of Medicine and Surgery 68: 102622, Aug 2021. Available from: URL: http://doi.org/10.1016/j.amsu.2021.102622.
2. Boonsri P, et al. Combined subacromial-subdeltoid bursitis and supraspinatus tear following a COVID-19 vaccination: A case report: Complications following a COVID-19 vaccination. Annals of Medicine and Surgery 69: 102819, Sep 2021. Available from: URL: http://doi.org/10.1016/j.amsu.2021.102819.

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» **Editorial comment:** Details of this case report of 52-year-old man and 51-year-old woman have previously been published and processed for Adis PV [See [1] and [2]], respectively.