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Thrombosis After Adenovirus-Vectored COVID-19 Vaccination: A Concern on Underlying Illness

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Dear Editor, we would like to share ideas on the publication "Effects of Thrombocytopenia and Thrombosis After Adenovirus-Vectored COVID-19 Vaccination."[1] Haimei noted that "*According to current research results, we have known…. the reasons and mechanisms need to be further explored*."[1] It is no doubt that adenovirus-vectored COVID-19 vaccination might induce thrombotic event. Haimei mentioned that there were many possible pathogenesis of COVID-19 vaccine induced thrombotic events.[1] Additionally, the hyperviscosity induced by COVID-19 vaccination can superimpose the problem and trigger thrombotic event, especially for the vaccine recipient with underlying diseases or prior infection.[2] Due to several factors, a thrombosis at heart, brain, lung or other organs might occur after COVID-19 vaccination. However, it should note that not all events are associated with vaccination. Sometimes, it might be difficult to finalize that a deadly thrombotic disorder that occurs after COVID-19 vaccination is directly caused by the vaccine or not. Here, the authors would like to share an interesting observation. A 72-year-old patients waiting for getting COVID-19 vaccination at a vaccination point developed sudden dyspnea. The medical personnel at vaccination unit observed the clinical problem, hence, referred this case to emergency unit and the patient was finally diagnosed to have a myocardial infarction. This patient has underlying poorly controlled diabetes, hypertension and dyslipidemia. Since she was a person at risk for getting COVID-19, she was included into the group for receiving COVID-19 vaccination according to local public health policies.

This clinical event occurred a few minutes before this patient would receive adenovirus-vectored COVID-19 vaccination. If the clinical problem occurs a few minutes late, it might be accused as a side effect of the COVID-19 vaccine. It is necessary to recognize that adenovirus-vectored COVID-19 vaccination is associated with thrombotic adverse effect and there are sporadic reports of the adverse events. However, it should restate that although pathological finding in case with thrombotic problems after vaccination can confirm the occurrence of thrombosis, it cannot definitively conclude that vaccine directly causes problems. In a recent report, post-COVID-19 vaccination acute myocardial infarction usually occurred within 24 h postvaccination.[3] Nevertheless that report on six cases of post-COVID-19 vaccination acute myocardial infarction patients is also insufficient to make general conclusions.[3] The present case occurring at very few minutes prior to COVID-19 vaccination is a good scenario implying that "not all post COVID-19 vaccination thrombotic event is caused by the vaccination". Although this case may speculate that if some of the reported cases may mistakenly reported as vaccine adverse events, a general conclusion cannot be derived from the outcome of only one patient. While it is important to understand the rare thrombohemostatic events after COVID-19 vaccinations, it is also important to highlight that vaccinations are safe and effective and most powerful tools for the fight against COVID-19.

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