

## Cancerous Patient, COVID-19 Vaccination, Blood Viscosity and Stroke-Like Complication

Dear Editor,

The coronavirus disease 2019 (COVID-19) vaccine is the hope for the management of the COVID-19 outbreak. At present, the COVID-19 vaccine is already in use in several countries. An important concern is the adverse effect of vaccination. There are many possible adverse effects of the COVID-19 vaccine including vascular complication. The possible neurological complication due to the COVID-19 vaccine is an important present consideration.<sup>[1]</sup> There are many recent reports on neurological incidences including stroke-like complication after vaccination.

In a recent local report from Indochina (<https://www.reuters.com/world/asia-pacific/thailand-sticks-with-sinovac-vaccine-after-cases-stroke-like-side-effects-2021-04-21/>), a post-COVID-19 vaccination stroke-like incidence occurs. A patient with underlying breast cancer is a member of all six affected cases, there is a patient with underlying breast cancer. It is questionable on the exact pathomechanism of the incidence. Indeed, a possible explanation of post-vaccination vascular complication is the change of blood viscosity. The COVID-19 vaccination can result in a change of blood viscosity due to an increased level of immune elements.<sup>[2]</sup> An increase in immunoglobulin is confirmed as a possible cause of increased blood viscosity.<sup>[3]</sup> A cancer patient, including the one with breast malignancy, might have a background high-blood viscosity.<sup>[4]</sup> Therefore, after vaccination, a hyperviscosity might occur, and it might result in a stroke-like event. For COVID-19 vaccination, it should be used with precaution in a patient with the underlying malignancy.

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### Conflicts of interest

There are no conflicts of interest.

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