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## Abstract

The accelerated development of various vaccines against COVID-19 was a global effort to curb the COVID-19 pandemic. As a result, several unique vaccine-related adverse events were observed. Vaccine-induced immune thrombotic thrombocytopenia (VITT) has been recognised as a clinically distinct entity with a predisposition for thrombosis at unusual sites with laboratory features of consumptive coagulopathy in addition to anti-PF4 assay seropositivity. The majority of cases reported were associated with adenoviral-based vectors such as ChAdOx1 nCoV-19 (Oxford-AstraZeneca) and Janssen Ad26.COV2.S (Johnson & Johnson). In our online search, we have not found any reports to date of VITT associated with Pfizer–BioNTech Comirnaty mRNA vaccine. We report a case of a previously healthy 76-year-old man who received his first-dose Pfizer Comirnaty vaccine on 11 October 2021 who developed left upper limb swelling on day 2 post-vaccination, which progressively worsened on day 4 post-vaccination. He was confirmed to have left axillary vein thrombosis on computer tomography arteriography/computed tomography venography of left upper on day 5 post-vaccination with new onset aphasia with unilateral limb weakness on day post-vaccination. Magnetic resonance imaging/magnetic resonance angiography of the brain confirmed acute left middle cerebral artery thrombosis with infarction. Blood investigations showed thrombocytopenia, elevated D-dimer, hypofibrinogenemia in addition to his unusual sites of thrombosis involving both arterial and venous circulation. His IgG ELISA assay for anti-PF4 antibody was positive.

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### References

1. Arepally GM, Ortel TL. Vaccine-induced immune thrombotic thrombocytopenia: what we know and do not know. *Blood* 2021; 138: 293–8.

[Crossref](#)

[Google Scholar](#)

2. Bussel JB, Connors JM, Cines DB, et al. *Thrombosis with thrombocytopenia syndrome (also termed vaccine-induced thrombotic thrombocytopenia)*. American Society of Hematology COVID19 Resources Version 1.6; last updated August 12, 2021.

[Google Scholar](#)

3. Thiele T, Ulm L, Holtfreter S, et al. Frequency of positive anti-PF4/polyanion antibody tests after COVID-19 vaccination with ChAdOx1 nCoV-19 and BNT162b2. *Blood* 2021; 138: 299–303.

[Crossref](#)

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4. Pavord S, Scully M, Hunt BJ, et al. Clinical features of vaccine-induced immune thrombocytopenia and thrombosis. *N Engl J Med* 2021; 385: 1680–89.

[Crossref](#)

[Google Scholar](#)

5. Medicines and Healthcare Products Regulatory Agency. *Research and analysis: Coronavirus vaccine—weekly summary of Yellow Card reporting*. Updated 24 December 2021.

<https://www.gov.uk/government/publications/coronavirus-covid-19-vaccine-adverse-reactions/coronavirus-vaccine-summary-of-yellow-card-reporting> (2021, assessed 3 January 2022).

[Google Scholar](#)

6. Centers for Disease Control and Prevention Emergency Preparedness and Response. *Johnson & Johnson/Janssen COVID-19 Vaccine and Thrombosis with Thrombocytopenia Syndrome (TTS): Update for Clinicians*. [https://emergency.cdc.gov/coca/calls/2021/callinfo\\_042721.asp](https://emergency.cdc.gov/coca/calls/2021/callinfo_042721.asp) (2020, assessed 31 January 2022).

[Google Scholar](#)

7. Sangli S, Virani A, Cheronis N, et al. Thrombosis with thrombocytopenia after the messenger RNA–1273 vaccine. *Ann Internal Med* 2021; 174: 1480–2.

[Crossref](#)

[PubMed](#)

[Google Scholar](#)

8. Tobaiqy M, MacLure K, Elkout H, et al. Thrombotic adverse events reported for Moderna, Pfizer and Oxford-AstraZeneca COVID-19 vaccines: comparison of occurrence and clinical outcomes in the EudraVigilance database. *Vaccines* 2021; 9: 1326.

[Crossref](#)

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9. Greinacher A, Thiele T, Warkentin TE, et al. Thrombotic thrombocytopenia after ChAdOx1 nCov-19 vaccination. *N Engl J Med* 2021; 384: 2092–101.

[Crossref](#)

[PubMed](#)

[Google Scholar](#)

10. Warkentin TE, Sheppard JI, Moore JC, et al. Quantitative interpretation of optical density measurements using PF4-dependent enzyme-immunoassays. *J Thromb Haemost* 2008; 6: 1304–12.

[Crossref](#)

[Google Scholar](#)

11. Huynh A, Kelton JG, Arnold DM, et al. Antibody epitopes in vaccine-induced immune thrombotic thrombocytopenia. *Nature* 2021; 596: 565–9.

[Crossref](#)

[PubMed](#)

[Google Scholar](#)

12. Schultz NH, Sørvoll IH, Michelsen AE, et al. Thrombosis and thrombocytopenia after ChAdOx1 nCoV-19 vaccination. *N Engl J Med* 2021; 384: 2124–30.

[Crossref](#)

[PubMed](#)

[Google Scholar](#)

13. Scully M, Singh D, Lown R, et al. Pathologic antibodies to platelet factor 4 after ChAdOx1 nCoV-19 vaccination. *N Engl J Med* 2021; 384: 2202–11.

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