

# Case of report of Deep Vein Thrombosis after first vaccination of Vaxzevria

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**Background:** According to European Medicines Agency (EMA), there are safety issues of thrombosis events after being vaccinated with Vaxzevria, which includes Pulmonary Embolism and Deep Vein Thrombosis. We present a case of thrombosis event after vaccination with Vaxzevria, which does not fit in the criteria for Vaccine Induced Prothrombotic Immune Thrombocytopenia(VIPIT)

**Case presentation:** A 29-year-old woman without any medical history was diagnosed with pulmonary thromboembolism and multifocal thromboses at right posterior calf deep veins. The patient was vaccinated with Vaxzevria on March 25th and didn't feel any discomfort on that day. Since then, the patient experienced headache on the next day and cramping pain and swelling of right calf on the 9th day after vaccination. On the 13th day after vaccination, the patient paid visits to outpatient clinic and Lower Extremity CT scan and Pulmonary CT angiography revealed multifocal thromboses at right post calf deep veins and decreased pulmonary arterial perfusion in Right Segment 9, which implies pulmonary thromboembolism. We also took brain MRI, which showed no acute infarction or hemorrhage. On the laboratory test, the patient's platelet, fibrinogen and D-dimer level was within normal range and there was no evidence of inherited thrombophilia or other rheumatic disease.

**Discussion:** According to the recently reported case of thrombosis event after vaccination of Vaxzevria, it is suspected that pathophysiology of thrombosis might be related to the one of HIT(Heparin Induced Thrombocytopenia). In our case, thrombocytopenia was not present and also show no presence of antibodies to Platelet factor 4(PF4)-polyanion complexes, which implies that this case does not fit into the case of VITT. But regarding the patient was a young healthy adult, who doesn't meet any major or minor risk factor for thrombosis such as old age, cigarette smoking, immobilization, oral contraceptives, it is reasonable to assume that vaccination might be the preceding factor of this thrombosis event. We recommend early imaging studies although the patient does not show thrombocytopenia.

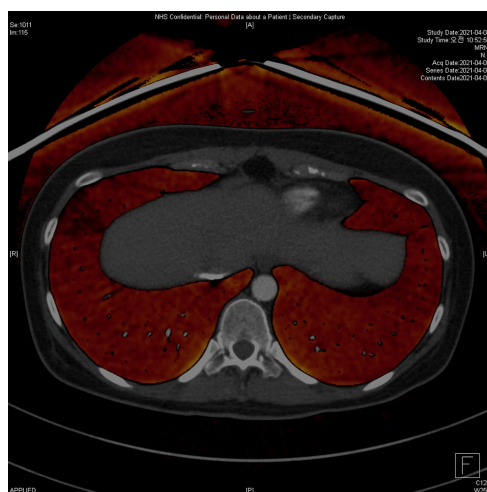


Table 1. Test results

Measure	Reference range	Result
Platelet		438,000
Fibrinogen (mg/dL)	186-431	247
D-dimer (mg/L)	<0.55	0.27
Protein C(% of normal activity)	72-160	95
Protein S(% of normal activity)	60-150	79.2
Activated Protein C resistance	-	Negative
Factor IX(% of normal value)		
Factor XI(% of normal value)	60-140	91
Factor VIII(% of normal value)	60-150	52□
Antithrombin III(% of normal activity)	80-120	95
vWF activation level (Ristocetin cofactor activity, %)	56-187	83
vWF Ag(%)	47-197	74
Lupus anticoagulant	-	Negative
Cardiolipin Ab IgM (U/ml)	<11	Negative(3.1)
Cardiolipin Ab IgG (U/ml)	<23	Negative(4.7)
Homocysteine (mmol/L)	7.6-18.2	12.4
ADAMTS 13 activity (%)	≥40.0	96.9
Anti Heparin/PF4 Ab	-	Negative

Table 2. Data elements of VTE

Variables	Content
Date of acute VTE	Date VTE diagnosed : 04/09/2021
Anticoagulant therapy at time of event	Unfractionated Heparin
Type and location of VTE	<ul style="list-style-type: none"> <li>Type : DVT <ul style="list-style-type: none"> <li>Location : Lower extremity, Rt.</li> <li>Most proximal vein : Calf vein</li> <li>Associated with Central venous catheter ? : No</li> </ul> </li> <li>Type : PE <ul style="list-style-type: none"> <li>Fatal PE : No</li> <li>Location : Unknown location (presumed PE due to perfusion defect on CTPA and symptom)</li> </ul> </li> </ul>
Symptoms of VTE	Symptoms triggered testing
Diagnosis of VTE	<ul style="list-style-type: none"> <li>Objectively confirmed using diagnostic imaging <ul style="list-style-type: none"> <li>DVT diagnostic findings</li> <li>Suspicious thrombosis on CT venography</li> </ul> </li> <li>PE diagnostic findings <ul style="list-style-type: none"> <li>Perfusion defect on pulmonary CTPA</li> </ul> </li> </ul>

Note: Data elements based on the developed sets by the American Society of Hematology Research Collaborative COVID-19 Non-Malignant Hematology Task Force. Deborah M. Siegel,1,2 Geoffrey D. Barnes,3 Nicole J. Langlois,2 Adrienne Lee,4 Saskia Middeldorp,5 Leslie Skrzith,4 William A. Wood,6 and Gre goire Le Gal A toolkit for the collection of thrombosis-related data elements in COVID-19 clinical studies. Submitted 10 September 2020; accepted 30 October 2020; published online 17 December 2020. DOI 10.1182/bloodadvances.20200003269.