

Solitary Non-Thrombotic Elevation in D-Dimer after COVID-19 Pfizer Vaccine: A Case Report

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Abstract

D-dimer is sensitive and early marker of both inflammatory and thrombotic insult, extremely elevated D-dimer might herald a serious events especially following receiving a shot of COVID-19 vaccine. The adverse effects of COVID-19 vaccine is simulating the rare but catastrophic thrombotic events following vaccination. so early alertness to this complication mandate search for this serious entity. D-dimer although non-specific but it is highly sensitive and early marker of thrombotic as well as other serious pathologies, we present a case with nonspecific symptoms with the only laboratory abnormality is lonely elevation in D-dimer. To our knowledge this is the first reported case of elevated D-dimer without clinically manifest thrombosis highlighting to possible newly emerging practice of using D-dimer as an early evidence of hidden thrombosis.

Introduction

The COVID-19 vaccine was considered among the strongest weapons that brought the horrible pandemic of COVID-19, caused by SARS-Cov2 potentially under control. Despite the highly tested safety and efficacy of COVID-19 vaccine, it is reported to be associated with exceedingly rare devastating and potentially lethal thrombotic complications. Elevation in D-dimer, although nonspecific marker of thromboinflammation but it still a cornerstone testing for thrombotic events after COVID-19 as well as the thrombotic events after vaccine[1]. D-dimer elevation might be elevated before clinically manifest thrombotic events in various hyper thrombotic diseases and predicts future development of thrombotic catastrophes and so this might be applied after COVID-19 vaccine[2]. We present a case who is 51 years old male previously healthy with unremarkable previous medical history who present with nonspecific symptoms with no evidence of thrombotic event 20 days after receiving the first shot of Pfizer vaccine which was attributed to adverse effect of vaccine but extensive evaluation disclose progressive

elevation in D-dimer which in turn treated by oral anticoagulation with subsequent normalization and recovery in symptomatology of the client.

Case Report

Fifty one years old male patient who is completely healthy before presented with headache, easy fatiguability and generalized weakness twenty days after receiving first shot of Pfizer vaccine. The symptomatology firstly attributed to usual adverse effects of vaccine both by the patient and primary health care provider, but since it is unusual for the adverse effects to be prolonged for such duration, the patient seeks our medical services. All examination of major systems including neurological examination as well as general examination were normal. D-dimer on first day was 1320mg/l. In the 2nd day it was 4001 mg/l. In the 3rd day it was 5517mg/l while in the 4th day the D-dimer became 10,000 mg/l. Complete blood count was normal including platelets 350,000cell/mm³. PCR of nasopharyngeal swab was negative for COVID-19. Searching for infectious focus was

unrevealing. Coagulation studies including prothrombin time , international normalized ratio and fibrinogen level were normal. Ferritin and CRP titer were within normal range. Other investigations revealed no evidence of thrombotic events. The patient received a course of anticoagulation by rivaroxaban 15 mg twice for 7

Discussion

D-dimer is a marker of fibrinolysis[3]. An increased D-dimer was specified by a value above 0.5 mg/l, the usual indication for requesting D-dimer is venous thrombotic events especially at deep veins of leg with or without pulmonary embolism, but other causes of elevated D-dimer including malignancy, trauma, sepsis among others should be elucidated[4] . D-dimer is considered an inflammatory markers beside its thrombotic concern especially thrombo-inflammatory events. It is one of ordinarily requested tests in COVID-19 which might reflect either hidden thrombosis or an indicators of severe inflammation with bad prognostic indication[6]. The rare but potentially lethal vaccine-induced thrombocytopenic thrombosis is an emerging but serious consideration that should alert the physician to think about vigilantly[5]. The extremely elevated D-dimer can be defined as a value more than 5000 mg/l[4].

In our case the D-dimer reached to 10,000 mg/l which mandates extensive search for an underlying grave illness Active infection including SARSCOV-2 and septic process were not found, there was neither history of cancer nor drug intake, and no history of trauma. Because the

days with subsequent gradual decrement in D-dimer until normalization with full symptomatic recovery. To our knowledge this is the first case who presented with laboratory evidence of hyper thrombosis without clinically manifested thrombotic events.

clinical manifestation of an adverse effects of vaccine can be intermingled with the rare manifestation of thrombocytopenic thrombosis after COVID-19 vaccine the physician should be alerted to this catastrophe as early as possible[5]. In our patient there is no evidence of neither micro nor macro vascular thrombosis or thrombocytopenia thus alerting our team to possibility of pre-clinical elevation of D-dimer that mandates use of novel oral anticoagulation with subsequent normalization consolidating retrospectively our suspicion highlighting that this marker might be the earliest manifestation of hidden thrombosis.

Conclusion

D-dimer elevation after Covid-19 vaccine herald a serious underlying thrombotic events which is not necessarily clinically evident, the physician should be alert to discriminate the adverse effects of vaccine from the rare thrombotic events. The a solitary asymptomatic elevation in COVID-19 vaccine might be an emerging clinical practice and heralding hidden thrombotic catastrophes.

References

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