

Phenytoin Induced Thrombophlebitis

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ABSTRACT

A 40-year-old female patient, with history of cerebral palsy and mental retardation associated with subsequent seizure disorder developed **thrombophlebitis** following treatment with IV **Phenytoin**. It is important to identify such adverse drug reactions and report them.

Keywords: Phenytoin, Thrombophlebitis, Seizure, Vein

CASE REPORT

A 40-year-old female patient, with history of cerebral palsy and mental retardation associated with subsequent seizure disorder presented to med. unit 1 GMC Anantnag. The patient was given an injection of 100mg of phenytoin.

INTRODUCTION

Phenytoin is a first-generation anticonvulsant used to treat status epileptics, tonic-clonic, and partial seizures [1]. The mechanism of action is not fully understood but it is believed to stabilize the seizure threshold and prevent the dissemination of seizure activity through non-synaptic, presynaptic, and postsynaptic actions in the motor cortex[2]. Oral maintenance dosing ranges from 3mg to 5 mg/kg daily for adults and the desirable therapeutic range is 10-20 mg/L. It is highly protein-bound and is extensively metabolized through the cytochrome P450 system.

Thrombophlebitis is a circulatory condition that occurs when a blood clot develops due to venous inflammation and inhibits the blood flow. Most commonly thrombophlebitis affects the superficial veins of the extremities (arms and legs)[3]The causes of superficial thrombophlebitis are different for the lower and upper extremities. For the lower extremities, the causes are often a combination of suboptimal condition of the veins and disease predispositions, as well as exposure to risk factors, all of which include Varicose veins, Trauma, Immobilization, Smoking and Obesity [4].

Thrombophlebitis can be diagnosed based on a clinical examination. If symptoms are visible/palpable, Initial diagnostics can include the comparison of pulse palpation proximal and distal to the affected area. This test is positive if the pulse is barely or not at all detectable, distal to the affected area. To ensure the diagnosis and to differentiate phlebothrombosis, an ultrasound (e.g. Doppler ultrasound) can be used [5].

The patient developed severe thrombophlebitis with cellulitis. On examination the BP recorded was 120/80mmHg, PR- 99bpm and SP02=98% RA.

On physical examination redness, swelling, warmth, and tenderness over the hand of right arm were noticed and Cord- like texture was felt just underneath the skin.

Based on history/clinical presentations a diagnosis of phenytoin-associated thrombophlebitis was made. So the drug was immediately discontinued and the IV cannula was removed. The patient was put on oral phenytoin and ibuprofen was prescribed to reduce pain and swelling. Cellulitis was treated with topical antibiotics [5,6].



Phlebitis over right hand(photograph is shared after taking consent from patient)

DISCUSSION

Thrombophlebitis in common parlance means inflammation and formation of blood clots in superficial veins close to skin inhibiting blood flow, blood clots may block the veins completely or partially . Sometimes the clot may form deep within the muscle called *deep vein thrombosis* as opposed to superficial Thrombophlebitis.Thrombophlebitis of the superficial veins of the breast and anterior chest wall is very rare condition named as *Mondor's disease*. Thrombophlebitis occurs mostly in legs. Deep vein thrombophlebitis is more serious as clots may break and lead to pulmonary embolus, which is life threatening.

The treatment of superficial thrombophlebitis should improve local symptoms while preventing development of complications such as venous thromboembolism.

Phenytoin is usually used to control certain types of seizures and to treat and prevent seizures that may begin during or after surgery in the brain or nervous system. Phenytoin is in a class of medications called anticonvulsants. It works by decreasing abnormal electrical activity in the brain.

CONCLUSION

Thrombophlebitis may turn life-threatening condition if immediate interventions are not undertaken. Phenytoin used in patient of epilepsy should be supervised to avoid ADR related to this drug.

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