



CASE REPORT

Vitamin K1 injection induced localized scleroderma like lesion in pregnancy: A case report

Priyanka Banik ^a, Lopamudra Dhar Chowdury ^b, Koustuv Chowdhury ^c, Abhik Saha ^d

^a2nd year MD Post Graduate Trainee, Department of Pharmacology, R. G. Kar Medical and Hospital, Kolkata, West Bengal, India

^b Professor, Department of Pharmacology, R. G. Kar Medical and Hospital, Kolkata, West Bengal, India

^c Assistant Professor, Department of Pharmacology, R. G. Kar Medical and Hospital, Kolkata, West Bengal, India

^d Jr. Pharmacovigilance Associate Indian Pharmacopoeia Commission National Coordination Centre Pharmacovigilance Programme of India R. G. Kar Medical College., West Bengal, India

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Cutaneous reaction due to Vitamin K1 (Phytomenadione) injection can present as hypersensitivity reaction at the injection site with morphea like lesion that can be deep seated, involving the dermis & subcutaneous tissue, several days or weeks after injection of vitamin K1. Texier Disease, which is a scleroderma like lesion secondary to vitamin K1 injection is one of the rarely encountered & reported condition.

Localised scleroderma is a rare autoimmune disorder characterized by fibrosis of the skin and subcutaneous tissues. Although its etiology is not fully understood, several factors including environmental triggers and genetic predisposition have been implicated.

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Introduction

Vitamin K is a fat soluble vitamin which reduces the chances of bleeding in liver disease. It is indicated mainly to prevent hemorrhagic disease of newborn and also in pregnant mother with liver disease with deranged coagulation profile (Choudhary et al., 2016).

Cutaneous reaction due to Vitamin K1(Phytomenadione) injection is very rare. It can present as delayed hypersensitivity reaction at the injection site with morphea like lesion that can be deep seated, involving

the dermis and subcutaneous tissue, several days after injection (Pang et al., 1996).

Localised scleroderma, is a rare autoimmune disorder characterized by excessive collagen deposition leading to fibrosis of the skin and underlying tissues (Mi et al., 2014). Its etiology remains unclear, but it is believed to involve a combination of genetic predisposition and environmental factors, including hypersensitivity to certain medications (Moreau-Cabarrot et al., 1996).



* Corresponding Author

Abhik Saha

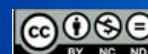
E-mail: pharma.abhik91@gmail.com

Contact: +7602929801

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Case report

A 35 year old pregnant lady of 3rd trimester presented in the dermatology outdoor with well demarcated erythematous annular plaque with hyper-pigmented border in right arm. The patient was given intramuscular vitamin K1 injection in right arm 2 weeks before. No history of any other injection taken in last 3 months. Also no history of any dermatological disorder or family history of autoimmune disease elicited. Lab investigation shows nothing significant finding, only moderate increase in ESR. Conservative management was given to the patient with oral antihistamines, topical steroid and moisturiser cream. This lesion gradually healed with a minimal scar after normal delivery of a healthy child.



Fig 1. Showing localised scleroderma due to vitamin K1 injection



Fig 2: Erythematous annular plaque with hyper-pigmented border in right arm

Discussion

Localised scleroderma is a rare disorder, and its occurrence following drug administration, particularly in pregnant women, is even rarer. Vitamin K1 injection-induced localised scleroderma has been reported sporadically in the literature, with proposed mechanisms including direct toxicity to fibroblasts and immune-mediated processes triggered by the drug (Sousa et al., 2010; Sousa et al., 2010; Pereira et al., 1998).

In our case, the temporal relationship between the Vitamin K1 injection and the development of the skin lesion, along with the absence of other inciting factors, strongly suggests an adverse drug reaction as the underlying cause. Although the precise mechanism remains unclear, the importance of considering a drug-induced etiology can not be ignored specially in pregnant patients presenting with unusual cutaneous manifestations (Choudhary et al., 2016; SFDA PRC, 2011).

Texier disease is an iatrogenic panniculitis due to vitamin K1 injection. It is a subcutaneous sclerosis with or without fasciitis and appears at the injection site many days to months after Vitamin K1 treatment. The fibroblasts are activated in the injection site to synthesize excess collagen due to elevated collagen gene expression by external stimuli. Cytokines appear to stimulate for the proliferation of the fibroblast which secrete TGF- β and platelet derived growth factor which causes localised scleroderma like lesion.

The early lesion presents with an eczematous appearance but longstanding reactions mimic morphea followed by scleroderma like lesion. (Riegert-Johnson et al., 2002; Wilkins et al., 2000).

The case was reported to the AMC for causality assessment and as per WHO scale it was found to be “PROBABLE” category and by NARANJO scale, also was found to be in the “PROBABLE” category. Severity assessment by Modified Hartwig’s Criteria shows that the ADR was of “MODERATE” nature.

Other injectable drugs causing scleroderma like lesion: (Rook’s Dermatology)

- Pentazocin
- Heparin
- Valproate sodium
- Glatiramer acetate
- Tetanus antitoxoid
- Hepatitis B Vaccine

Conclusion

It is a case of localised scleroderma induced by Vitamin K1 injection in a pregnant woman, highlighting the need of heightened awareness regarding the potential danger associated with adverse drug reactions in pregnancy. Such Case reports are powerful tools for recognizing the rare adverse drug reactions, specially in pregnant patients who are high risk, needing utmost patient care and safety.

Such rare Adverse Drug Reaction during pregnancy should essentially be reported for 'signal' generation.

Acknowledgments

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Conflict of Interest

The authors declare no conflicts of interest.

Informed Consent

Written informed consent was obtained from the patient for the publication of this case report and accompanying images.

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