



A strict vegetarian diet may be harmful: bilateral macular bleeding in vitamin B12 deficiency

Jitendra Singh ^{1,*} and Anju Dinkar ^{2,3}

¹Department of General Medicine, Institute of Medical Sciences, Banaras Hindu University, Varanasi, Uttar Pradesh, India

²Department of Microbiology, Sanjay Gandhi Postgraduate Institute of Medical Sciences, Lucknow, Uttar Pradesh, India

³Department of Microbiology, Institute of Medical Science, Banaras Hindu University, Varanasi, Uttar Pradesh, India

*Correspondence address. Department of General Medicine, Institute of Medical Sciences, Banaras Hindu University, Varanasi 221005, India. Tel: +91 7985204237; E-mail: drjitenngsm@gmail.com

Abstract

A 35-year-old Indian male office worker presented with complaints of progressive weakness, fatigability, and diminished vision. The patient followed a strict vegetarian diet. Clinical examination revealed pallor. Fundoscopy revealed a bilateral macular bleed. Vitamin B12 deficiency was determined to be the cause based on the clinical and laboratory results. Three months later, he reported a near-normal vision in both eyes and a normal complete hemogram. The present clinical picture demonstrates an unusual facet of clinical feature in vitamin B12 deficiency, an event rarely encountered.

A 35-year-old Indian male office worker presented with complaints of progressive weakness, fatigability and diminished vision. The patient followed a strict vegetarian diet. His previous medical record was not contributory. Clinical examination revealed pallor and stable vitals. Systemic examinations were unremarkable. He exhibited no signs of neuropsychiatric illness. Fundoscopy revealed a bilateral macular bleed (Fig. 1A).

A complete hemogram showed pancytopenia with hemoglobin (Hb) 3.2 g/dl [reference value 11–15], total leucocytes count (TLC) 2350/cmm [reference value 4000–10,000], platelets count (PC) 30000/cmm [reference value 150000–450000] and mean corpuscular volume 124 fl [reference value 80–100]. Peripheral blood smear showed hyper-segmented neutrophils and macro ovalocytes (Fig. 1B). Laboratory tests estimated serum Vitamin B12 97 pg/ml [reference value 211–911] and folic acid 11.3 ng/ml [reference value >5.38]. Blood tests for anti-parietal cell and intrinsic factor antibodies were negative. The autoimmune panel, serum electrolytes, renal, liver and thyroid functions were normal. Bone marrow aspiration was suggestive of megaloblastic features (Fig. 1C). Vitamin B12 deficiency was determined to be the cause based on the clinical and laboratory results. Other possible relevant causes of macular bleeding such as diabetes, hypertension, vein occlusions, leukemia, sickle cell anemia and trauma were ruled out. Due to certain concerns with his religion, the patient has always been a strict vegetarian and has never used supplements. The authors excluded further causes of vitamin B12 deficiency as well.

Vitamin B12 deficiency-induced severe thrombocytopenia most likely causes a bilateral macular bleed in the present

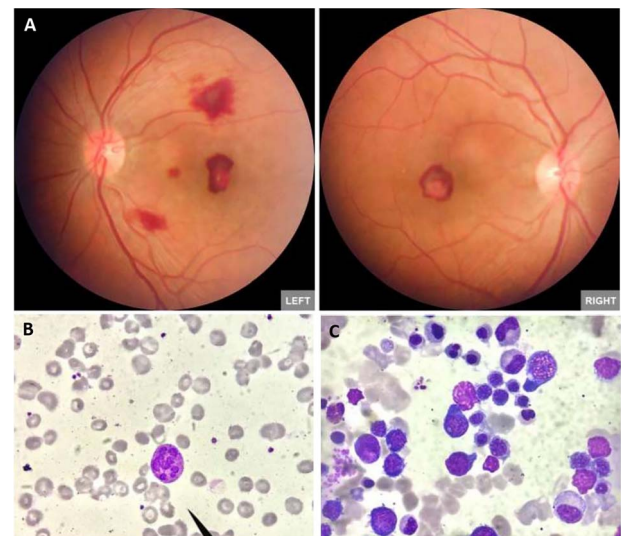


Figure 1. (A) Fundoscopy shows a bilateral macular bleed; (B) the peripheral blood smear shows hyper-segmented neutrophils and macro ovalocytes; (C) bone marrow aspiration shows marked erythroid hyperplasia with megaloblastic features.

case. Injectable cyanocobalamin (Vit B12) 1 mg was started after transfusing one unit of packed red blood cells. The patient improved satisfactorily in clinical (presenting complaints) and investigations (Hb 6.2 g/dl, TLC 4600/cmm, PC 115000/cmm) and was discharged home after 15 days of hospitalization. Three

Received: May 5, 2023. Revised: June 10, 2023. Accepted: July 10, 2023

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months later, he reported near-normal vision in both eyes and a normal complete hemogram.

Vitamin B12 has a vital role in Deoxyribonucleic acid synthesis and its deficiency leads to a diversity of symptoms involving hematologic, neurologic, psychiatric, cutaneous, gastrointestinal and cardiovascular disorders [1]. A strict vegetarian diet was India's leading cause of vitamin B12 deficiency as stated by 86.36% in a study [2]. Religion is the fundamental motivator for a strict vegetarian diet in India. Due to atypical manifestation, it becomes very difficult to suspect vitamin B12 deficiency. The present clinical picture demonstrates an unusual facet of clinical feature in vitamin B12 deficiency, an event that has been rarely encountered before [3]. As a result, a history of vegetarianism raises a person's risk of vitamin B12 insufficiency. Early identification and treatment, simple screening with Complete blood count (CBC) and vitamin estimation may prevent unnecessary workups, further complications and morbidity. Supplemental B12 is recommended to mitigate the negative effects of a strict vegan diet.

ACKNOWLEDGEMENTS

None.

CONFLICT OF INTEREST STATEMENT

No conflict of interest.

FUNDING

There was no funding for this publication.

ETHICAL APPROVAL

No ethical approval was required for this publication.

CONSENT

Informed and written consent from the patient was taken prior to publication.

GUARANTOR

Jitendra Singh.

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