

Nutritional Deficiency Dangers- A Rare Case of Severe Vitamin B12 Deficiency resulting in Permanent Brain Damage

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Background

Here, a case of a 21-year-old previously healthy university student is presented with an extreme case of cobalamin (Vitamin B12) deficiency which caused drastic neurological changes including partial brain tissue atrophy.

Case Report

The patient presented to the hospital with a 1-week history of swelling and discomfort in his right calf. Compression ultrasonography revealed deep vein thrombi in the right superficial femoral and popliteal vein. CBC, coagulation studies and renal function yielded normal results. Mean corpuscular volume was elevated, hence patient was prescribed anticoagulant therapy. 3 months later he reported progressive gait instability and intermittent paresthesia in his feet. He was having increasing difficulty concentrating on his university courses. Lab tests showed decreased serum cobalamin and increased plasma homocysteine levels. Peripheral blood smear showed macrocytes. MRI of the brain revealed atrophic changes and lesions in the white matter on both hemispheres.

Case History

Further history revealed the patient's diet included toasted cereal (cheerios) without milk, bread and fries. The patient had an aversion to most food and textures including meat since childhood. There were no elements of anxiety or eating disorders.

Follow Up Result

Eight weeks later, he reported improvement in gait and academic performance. Motor power had increased, but his reflex and sensory abnormalities persisted. At follow-up 2 years later, all neurologic deficits had resolved.

Conclusion

Cobalamin plays a vital role in major functions such as synthesis of myelin for nerves, conversion of homocysteine to methionine and is required for erythrocyte formation. This case highlights the importance of Vit B12 in the formation and maintenance of essential structural constituents of the body and the life altering changes caused by the deficiency of it. Awareness needs to be raised for healthy food intake to avoid such complications.

Keyword

Vitamin B12, brain atrophy, nutritional deficiency