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Case Report

A Case of Severe Hypothyroidism Presenting only with Bleeding Diathesis

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Abstract

Hypothyroidism can present with variety of clinical features. But bleeding manifestations as a sole atypical presentation of hypothyroidism is extremely rare. Hemostatic disorder may be a manifestation of several underlying etiology. Here we have reported a case where a 14 yr old girl who initially presented with bleeding diathesis without any other symptoms suggestive of thyroid dysfunction but later found to be suffering from severe hypothyroidism after investigations.

Introduction

Hemostatic balance is a system where the delicate equilibrium is regulated by several factors, including hormones. The strong relationship between thyroid hormones and the coagulation system has been appreciated for a very long period of time [1]. Several biological mechanisms were proposed to explain this intriguing association, including effects of thyroid hormones on synthesis of coagulation factors as well as thyroid-related autoimmune processes, involving the hemostatic system [2].

Case Report

14 yrs old girl presented to Out Patient Department (OPD) of Endocrinology department of our hospital with easy bruising involving upper limb, trunk and lower limb for the last 6 months. She was apparently well 6 months back, when she developed bruises over right lower limb following mild trauma. Since then she has developed several bruises spontaneously involving all over body. There was no history of fever, gum bleeding, haematuria, melaena, haemoptysis, pain abdomen, bone pain, drug intake of any kind. She had started menstruating at the age of 12 yrs and was normal. She had no complaints of menstrual abnormality in any form. There was no past and family history of any bleeding diathesis. She was not taking any medication of any kind. She is of average built and nutrition and of normal intelligence. Examination of skin revealed multiple bruises all over body of varying size (Figure 1). She had mild pallor but no jaundice, cyanosis, clubbing or oedema. Examination of liver and spleen revealed no abnormality. She had a Pulse rate of 63/min, BP- 110/70 mm of Hg. A provisional diagnosis of bleeding disorder was made.

Investigations: Complete Hemogram is shown in the Table 1. Coagualtion studies revealed BT(Bleeding Time) - 2 mins (<7 mins) , CT(Clotting Time) - 7 mins(3-8 mins) , PT -16.6 s(11.4- 13.7), INR- 1.34, APTT- 50.8 s(27-40). Liver Function Test and Renal function test was within normal limits. Further investigations for increased APTT was done by assayingvon WillebrandFactor (vWF) which was normal. Assessment of other intrinsic factors were not done as there was no family history and the patient is a female. We went for Thyroid Function Test as subclinical hypothyroidism is a quite common problem in this region and there are association between coagulation disorder and thyroid dysfunction. It revealed that Thyroid Stimulating Hormone (TSH) was 940µu/ml (0.5-4.94), Free Thyroxine (FT4)- 0.13ng/dl (0.8-1.34), Anti Thyroid peroxidise (TPO) antibody - 290.90 (> 60 = positive). The only clue was high MCV, low heart rate and family history of thyroid dysfunction.

She was started on levothyroxine replacement (75 µg/day and increased to 100µg/day after 2weeks .She was revisited after 4 weeks and her bruises had decreased significantly and no new bruise had appeared. Repeat Coagulation profile came normal at that time. (Hb%- 8.43gm%, and APTT- 35s CT- 4.1 mins).

Discussion

We diagnosed this "a case of severe hypothyroidism presenting only with bleeding diathesis". It is well known now that haemostatic disorders occur in patients with hypothyroidism. There are several published reports of that. It can results in acquiredvWD [3,4], qualitative platelet abnormalities with prolongation of bleeding time [5], significant reduction in factors VIII, IX and

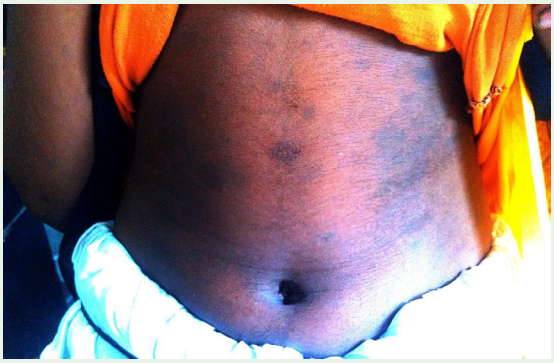

Figure 1: This is a photograph of patient showing bruises all over anterior aspect of the abdomen.

X [6], autoantibodies against factor VIII as part of the autoimmune process associated with hypothyroidism (acquired hemophilia A) [7], increased fibrinolytic activity in overt hypothyroidism and anti-fibrinolytic activity in sub-clinical hypothyroidism [8]. But what important in our case is that bleeding disorder may be the first and only presentation of undiagnosed hypothyroidism which has not been reported in medical literature so far. Clinical manifestation in such cases may be absent, may be subtle or may be missed. Initially our patient presented with increased APTT and mildly raised CT. BT was normal. Platelet function was also normal as evident from RIPA. vWF was found to be normal. So basically this haemostatic disorder was due to severe hypothyroid state as evident from correction of coagulation parameter after replacement with levothyroxine. Haemostatic dysfunction may be due to hypofunctioning of clotting factors as thyroid has permissive role on almost every metabolic activity in body. But what atypical here is that this was the only presentation of severe hypothyroidism. Young age may be an important factor for asymptomatic nature in this case. On the other hand autoimmunity might be playing regulatory role for underlying clotting abnormalities prolonging APTT.

To conclude thyroid function should be screened in an individual presenting with bleeding disorder. And lastly haemostatic disorder associated with hypothyroidism reverses with levothyroxine replacement.

Author's contributions

Sudeb Mukherjee – Conception and design, Acquisition of data, Analysis and interpretation of data.

Suhana Datta - Drafting the article.

Pramatha Nath Datta- Redefining several aspests of investigations.

Indira Miasnam- Critical revision of the article.

Table 1: Showing Complete Hemogram report of the patient.

Hb%	7.3 g/dl (11-15g/dl)
RBC(Red Blood Cell)	2.37 mil/µl(4.1-5.5mil/µl)
Haematocrit	24.1% (35-45)
Mean Corpuscular Volume(MCV)	101.4fl (80-96)
Mean Corpuscular Hemoglobin(MCH)	30.8 pg(26-30)
Mean Corpuscular HemoglobinConcentration(MCHC)	30.3g/dl (30-34)
Red cell Distribution Width(RDW)	16%
Platelet Count	150×10^3/µl
Peripheral Blood Smear	predominantly macrocytic normochromic anaemia.
TLC(Total Leukocyte Count)	5000/µl (4000-11000)
Neutrophil	38
Eosinophil	05
Basophil	00
Lymphocyte	54
Monocytes	03

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References

1. Squizzato A, Romualdi E, Büller HR, Gerdes VE. Clinical review: Thyroid dysfunction and effects on coagulation and fibrinolysis: a systematic review. J Clin Endocrinol Metab. 2007; 92: 2415-2420.
2. Franchini M. Hemostasis and thyroid diseases revisited. J Endocrinol Invest. 2004; 27: 886-892.
3. Dalton RG, Dewar MS, Savidge GF, Kernoff PB, Matthews KB, Greaves M, et al. Hypothyroidism as a cause of acquired von Willebrand's disease. Lancet. 1987; 1: 1007-1009.
4. Michiels JJ, Schroyens W, Berneman Z, van der Planken M. Acquired von Willebrand syndrome type 1 in hypothyroidism: reversal after treatment with thyroxine. Clin Appl Thromb Hemost. 2001; 7: 113-115.
5. Edson JR, Fecher DR, Doe RP. Low platelet adhesiveness and other hemostatic abnormalities in hypothyroidism. Ann Intern Med. 1975; 82: 342-346.
6. Gullu S, Sav H, Kamel N, "Effects of levothyroxine treatment on biochemical and hemostasis parameters in patients with hypothyroidism," European Journal of Endocrinology. 2005; 152: 355–361.
7. Meiklejohn DJ, Watson HG. "Acquired haemophilia in association with organ-specific autoimmune disease," Haemophilia. 2001; 7: 523-525.
8. Chadarevian R, Bruckert E, Leenhardt L, Giral P, Ankri A, Turpin G. "Components of the fibrinolytic system are differently altered in moderate and severe hypothyroidism," Journal of Clinical Endocrinology and Metabolism. 2001; 86: 732-737.