A Case of Hashimoto's Thyroiditis Induced Coagulopathy

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HISTORY

A 26yr old man presented to haematology with a short history of easy bruising. There was no history of spontaneous bleeding. Past medical history was unremarkable other than childhood asthma for which he was on inhalers. Family history was non-contributory. On examination there was significant lower limb bruising. Investigation of coagulation indicated the following:

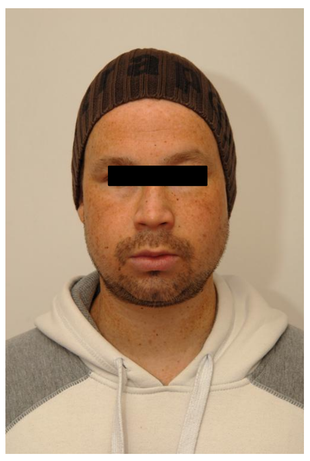

Fig 1. Photograph indicating typical hypothyroid facies

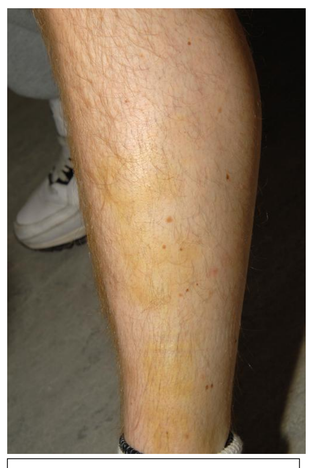

Fig 2. Photograph demonstrating bruising in lower limbs at presentation

INVESTIGATIONS

	Result	Normal Range
Platelets	238	150-450
Prothrombin time	12.0	12-17 secs
APTT	41.0	24-38 secs
Chromogenic Factor VIII	0.46	0.6-1.3 U/dl
Factor VIII clotting assay	0.4	0.6-1.3 U/ml
von Willebrand Factor antigen	0.31	0.7-2.0 U/ml
von Willebrand Factor activity	0.39	0.7-2.0 U/ml
Factor IX assay	0.63	0.6-1.3 U/ml
Factor XI assay	0.60	0.6-1.3 U/ml

Elevation in APTT indicated an intrinsic pathway abnormality and further deficiencies in factor VIII and von Willebrand Factor antigen and activity confirmed a diagnosis of Acquired von Willebrand's disease

The causes of acquired von Willebrand's disease are listed below

ACQUIRED VON WILLEBRAND'S DISEASE

Malignant disease
MGUS and multiple myeloma
Non Hodgkin lymphoma
Chronic lymphocytic leukaemia
Polycythaemia vera; Chronic myeloid leukaemia; Essential thrombocythaemia

Other disorders
SLE
Hypothyroidism
GI angiodysplasia
Uraemia

von Willebrand disease continued...

Drugs
Sodium valproate
Ciprofloxacin
Griseofulvin

On further questioning he reported cold intolerance, dry skin and lethargy and family history revealed an aunt with hypothyroidism. Thyroid function tests were sent:

	Result	Normal Range
Free T_4	<5.5	9.0-19.0 pmol/l
TSH	711.1	04.-4.5 mU/l
Anti TPO Abs	3000	0-135 U/ml

He was diagnosed with Hashimoto's thyroiditis, commenced on thyroxine replacement (100mcg daily) and coagulation normalised as thyroid function improved

Date	Free T4 (pmol/L)	TSH (mU/L)	Thyroxine dose (mcg)	APTT (24-38 secs)	VIII Clotting assay (0.6-1.3 U/ml)	vWF antigen (0.7-2.0 U/ml)	vWF activity (0.58-1.96 U/ml)
Aug 10	<5.5	711.1		41.0	0.40	0.31	0.39
Nov 10	13.2	11.4	100	36.3	0.71	0.58	0.78
Apr 11	14.1	57.1	100	30.3			
Jan 12	18.0	40.2	125				
Jan 13	20.0	2.24	150	34.0	0.67	0.65	0.61

DISCUSSION

Coagulation disorders can occur in up to 3% of patients with thyroid disease ranging from subclinical findings to haemorrhage or thromboembolism. Coagulation disturbance in hypothyroidism is usually associated with varying severity of disorders of haemostasis. Von Willebrand's disease is the most common disorder occurring and is characterised by easy bruising, epistaxis or mucosal bleeding. It is confirmed on laboratory finding of increased APTT with reduced factor VIII and vWF.

The pathogenesis is unclear but has been attributed to a reduction in vWF protein synthesis in the absence of adequate levels of thyroxine and reduced adrenergic stimulus which stimulates vWF synthesis.

It responds to treatment with desmopressin with normal half life times for factor VIII and vWF and disappears completely with thyroxine replacement.

CONCLUSION

This case demonstrates an interesting endocrine cause of coagulopathy which is simply and completely reversible with thyroxine replacement.