Brief Communication

Deep vein thrombosis in a patient of Sheehan's syndrome: Autoimmunity or hypercoagulabilty

Shahnaz Ahmad Mir, Shariq Rashid Masoodi, Arshad Iqbal Wani, Khalid Jamal Farooqui, Mir Iftikhar Bashir

Department of Endocrinology, Sher-I-Kashmir Institute of Medical Sciences, Soura, Srinagar, Jammu and Kashmir, India

ABSTRACT

Introduction: Literature is inconsistent whether patients with hypopituitarism have increased risk of thrombosis. Recent data has shown problems with the coagulation system in Sheehan's syndrome (SS). Here, we describe a case of SS which presented with deep vein thrombosis. **Objective:** To describe a case of SS presenting as deep vein thrombosis. **Case Report:** A 30-year-old female was admitted to the general medicine ward with 1 month history of gradual onset swelling and pain in the left leg. The left calf diameter was 5 cm greater than the right. Doppler of the lower limbs revealed thrombosis in the left popliteal vein. Patient's coagulation profile revealed a normal prothrombin time of 12 sec, activated partial thromboplastin time of 30 sec, positive D-dimer, negative protein C and protein S and normal titres of antinuclear antibodies. Echocardiography showed an ejection fraction of 52 percent. Endocrinology consultation was sought in view of clinical suspicion of hypothyroidism. Endocrinology review revealed a significant past history of primary postpartum hemorrhage, lactation failure and secondary amenorrhea since the delivery of the last child 6 years back. She had clinical features of growth hormone, thyroid hormone and adrenocorticotropic hormone deficiency. Hormonal analysis showed features of central hypothyroidism, secondary adrenal insufficiency and growth hormone deficiency which was subsequently confirmed by insulin tolerance test. **Conclusion:** SS patients may have increased risk of thrombosis

Key words: Autoimmunity, deep vein thrombosis, Sheehan's syndrome

Introduction

Deep vein thrombosis (DVT) is not described in patients of Sheehan's syndrome (SS). Patient's with hypopituitarism may have increased risk of thrombosis, the precise mechanisms of which remain unexplored, but may include problems with coagulation system. Patient's with SS have been observed to have a shorter prothrombin time (PT), activated thromboplastin time and higher fibrinogen and D-dimer levels[1]

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Case Report

We present a 30-year-old female who presented with 1 month history of gradual onset swelling and pain involving the left leg. Physical examination revealed features of hypothyroidism, blood pressure of 100/70, pulse of 68/min and normally palpable peripheral pulses. The cardiovascular and respiratory system examination was normal. The left calf diameter was 5 cm greater than the right. Laboratory investigations revealed normocytic normochromic anemia, normal liver and kidney function test. Patient's blood glucose was 72 mg/dl; normal serum electrolytes; normal chest X-ray. Electrocardiogram revealed low voltage complexes with normal sinus rhythm. Doppler lower limbs revealed thrombosis in left popliteal vein. Patient's coagulation profile revealed normal prothrombin time of 12 s, activated partial thromboplastin time (APTT) of 30 s, positive D-dimer, negative protein C and protein S and normal titres of antinuclear antibodies. Echocardiography showed

Corresponding Author: Prof. Shariq Rashid Masoodi, Department of Endocrinology, Sheri-I-Kashmir Institute of Medical Sciences, Soura, Srinagar, Jammu and Kashmir, India. E-mail: shariq.masoodi@gmail.com

an ejection fraction of 52 percent. Patient was initially treated with heparin followed by warfarin. Endocrinology consultation was sought in view of clinical suspicion of hypothyroidism. Endocrinology review revealed a significant past history of primary postpartum hemorrhage, lactation failure and secondary amenorrhea since the delivery of the last child 6 years back. She had clinical features of growth hormone, thyroid hormone and adrenocorticotropic hormone deficiency. Hormonal analysis showed features of central hypothyroidism, secondary adrenal insufficiency and growth hormone deficiency which was confirmed by insulin tolerance test [Table 1]. Patient was put on thyroxine; prednisolone and anticoagulants were continued for 3 months. Patient is regularly following in the endocrinology OPD with no further recurrence of DVT.

Discussion

Patient with hypopituitarism have increased risk of cardiovascular disease though no literature is available for SS.[2] It is proposed that growth hormone deficiency is the main contributor of increased cardiovascular mortality. Alteration in coagulation system is well- studied in case of both overt and subclinical hypothyroidism. These patient's have hypocoagulable state contributed by increased bleeding time, APTT along with factor VIII and von Willebrand factor deficiency.Data regarding the increased propensity towards thrombosis in patients with hypopituitarism is inconsistent. Johansson *et al*., compared 20 hypopituitary adults with 20 age matched controls and demonstrated higher plasma fibrinogen and plasminogen activator inhibitor-1 suggestive of defective fibrinolytic system.[3] However, in another study by Johannsson *et al*., showed normal level of plasma fibrinogen, tissue plaminogen activator, fibronectin, factor VIII and Von Willebrand factor in 22 growth hormone deficient adults.[4] Pasa *et al*., studied prothrombin time, activated thromoplastin time, fibrinogen and D-dimer in 32 patients with SS and observed a shorter PT, activated thromoplastin time and higher fibrinogen and D-dimer levels.[1] Tanriverdi *et al*., described a 62 year old female with massive cardiac thrombosis who presented with pulmonary edema which the authors attributed to hypercoagulable state secondary to growth hormone deficiency.[5] Ishizu *et al*., reported a SS patient who developed acute adrenal insufficiency and inferior vena cava thrombosis.[6]

Table 1: Hormonal analysis of patient

Investigation	Patient value	ITT peak	Normal value
GH (U/L)	<1	2.5	>3
Serum TSH (U/L)	6.90		0.5-6.5
T4 (μg/dl)	1.85		>4.5
Serum T3(ng/ml)	1.09		
Serum LH (U/L)	4.92		3-12
Serum FSH (U/L)	5.18		2-6.6
PRL (ng/dl)	2.10	3.10	5-10.2
Cortisol (μg/dl)	6.07	10.13	>18

T4: Thyroxine, TSH: Thyroid stimulating hormone, LH: Luteinizing hormone, FSH: Follicle stimulating hormone, GH: Growth hormone, PRL: Prolactin, ITT: Insulin tolerance test

Autoimmunity may be another mechanism that can explain the pathogenesis of DVT in the present patient as pituitary antibodies are more frequent in SS.[7] Patients of antiphospholipid antibody syndrome have been described to develop SS. Ikeda *et al*., described a 39 year women of SS and anti-phospholipid antibody syndrome. Patient had thrombocytopenia and immunological examination was positive for lupus anticoagulant. Patient responded to trophic hormonal replacement with complete recovery of thrombocytopenia.[8] Though no immunological or autoimmune markers were available in our patient, she had a complete recovery and had no recurrence of DVT during a long follow up.

Conclusion

To the best of our knowledge, present case is first reported case of SS with DVT and may be related either to their problem with coagulation system or underling autoimmunity.

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