

Expanded Dengue Syndrome

presenting as

thyrotoxic heart without
stigmata of *Graves disease*

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INTRODUCTION

- Dengue fever is a viral infection transmitted by mosquito *Aedes Aegypti*.
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- However the symptomatic dengue fever may follow unusual presentation of the disease now being increasingly recognized as expanded dengue syndrome incorporating wide spectrum of uncommon presentation of this common disease.
 - The present case of dengue fever presented with overt thyrotoxicosis during the course of illness.

CASE HISTORY

- A 27 year old Indian male presented with loose motions, high grade fever and breathlessness for 5 days prior to hospitalization . Patient had lost 3 kgs over last 2 weeks . He denied history of alcohol and smoking or any significant family history of thyroid disorder. On examination he was found to have respiratory rate of 30/ min, temperature of 39 degree, and pulse rate of 130/ min in sinus rhythm. Patient had no evidence of clubbing, icterus was present , no cyanosis and lymphadenopathy. Patient had no organomegaly.

INVESTIGATIONS

LABS	INTERPRETATION VALUE
Haemoglobin	10.2 gm%
Total leukocyte count	15,140/cumm
Platelets	1,29,000 → 95,000/cumm in 2 days however improved
Electrolytes	Within normal limits
INR	1.22
Serum. bilirubin	5.7 mg/dl
Direct bilirubin	4.6 mg/dl
AST	34IU/L
ALT	40IU/L
ALKALINE PHOSPHATE	169IU/L

LABS	INTERPRETATION VALUE
TOTAL PROTEINS ALBUMIN A: G	6.2 gm/dl 2.6 gm/dl 0.7
HEPATITIS B AND HEPATITIS C	NEGATIVE
CHEST - XRAYs	Bilateral minimal pleural effusions and bilateral patchy pneumonitis
DENGUE PROFILE	<u>Ig G and IgM and NS-1 positive</u>

2D ECHO: EF – 55%

***TYPE I DIASTOLIC DYSFUNCTION
MILD PULMONARY HYPERTENSION***

ABG : pH -7.35;PO2- 88mmHg; PCo2-34.0;
HCO3-26.5.

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- Patient was placed in non invasive ventilation for 4 days with supplemental IV crystalloids and beta lactam antibiotics.
 - Though his general condition improved in a week however sinus tachycardia persisted, which ranged from 120 -140/ min
 - His physical examination showed no thyroid masses or nodules but found to have fine tremors in hand and staring gaze.

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- Thyroid profile was performed and it showed markedly high FT₃ levels of 5.12 pg/ml(N- 0.80-1.90) , FT₄ was 10.9 ng/ dl (N -1.5 – 4.10) and TSH was 0.004 uIU/ml(N - 0.400-4.00)
 - CT scan of thyroid revealed no masses but had diffuse increased vascularity.
 - ⁹⁹Tc thyroid scan was performed which showed increased vascularity of both lobes of thyroid with delayed static image indicative of mildly enlarged thyroid(left> right) with diffuse increased radio uptake.
 - No definitive hot or cold nodules seen.
 - The total thyroid uptake was 7.4 % (normal 1 to 4%) and the thyroid to parotid ratio was 7.98(normal 0.9 – 2.9%)

- The values greater than 2.5% of thyroid to parotid ratio is indicative of Grave's disease.

- The scan findings were indicative of Grave's disease which persisted as thyroid disease , the clinical features chiefly were of acute thyrotoxic heart presenting with persistence of palpitation despite recovery of febrile illness and improvement in anemia. Patient was placed on Tab Neomercazole and Propranolol , he was discharged home with after a month of hospitalisation and was followed on outpatient basis 6 weeks post hospitalization
- FT₃- 8.51pg/ml FT₄- 2.28ng/ml TSH – 0.06
- Pulse rate varied from 120-130/ min in sinus rhythm

DISCUSSION

- Expanded dengue syndrome has unusual and atypical manifestations which includes various neurological, hepatic, renal , myocardial and other isolated organ involvements expressed as complications of severe profound shock or associated host conditions or co- infections.
- I am presenting this case of dengue syndrome with atypical clinical presentations of Graves disease including anemia, diarrhea, and jaundice.
- Furthermore patient has features of thyrotoxic heart having persistent tachycardia, wide pulse pressure , breathlessness, and Type I diastolic dysfunction and mild pulmonary hypertension ,without overt signs of heart failure.

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- Findings of marked suppression of TSH(0.004 uIU/mL) with elevated FT₃ and FT₄ increased diffuse tracer uptake and increased vascularity by thyroid glands of both lobes on immediate ⁹⁹Tc thyroid scintigraphy flow images suggest overt thyrotoxicosis which differentiates Graves disease from transient thyroiditis.
 - The presence of raised TPO antibodies suggest indicate an autoimmune thyroid disorder and raised TSI indicate Graves disease.

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- In this patient anti TPO was negative and Sr TSI could not be performed due to financial constraints.
 - Differentiating between subacute transient thyroiditis and Graves disease is essential , as medical treatment for subacute transient thyroiditis is not needed because symptoms are short lived.

CONCLUSION

- The disease i.e. Dengue fever can extend beyond the natural cause of the disease and affect many organs including thyroid and heart . Disease may present as thyrotoxic heart , the case warrants observation of feature of thyrotoxic heart in the similar situation ,wherever suspected.