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Letter to the Editor

Autoimmune Hypothyroidism and Pericardial Effusion in a Toddler

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Dear Sir,

We describe a 3 year old girl child presenting to the emergency department with bilateral pitting pedal edema for one month; and acute onset facial swelling and listlessness for last one week [Figure 1a]. Urine output was normal and there was no history of any fever or skin/mucosal rashes. Developmentally, she was appropriate to her age. On examination, pulse rate was 90/minute and blood pressure 80/54 mm Hg. Bilateral pitting pedal edema and facial puffiness was present. There was no pallor or dysmorphism. Thyroid was normally palpable [Figure 1b] but the skin and hair were coarse and dry [Figure 1a]. Cardiac apex was normally placed. Heart sounds were heard distant without any murmur or pulsus paradoxus. Respiratory, abdominal and neurological examination was unremarkable. Her height was 76.2 cm (far below 3rd percentile on height for age growth charts) and weight was 11.3 Kg (between 3rd and 10th percentile). Head circumference was normal. On the review of laboratory and radiological reports, patient was found to have mild macrocytic anemia (Hb 9.4 gm/dL with MCV 92 fL), hypercholesterolemia (total cholesterol 329 mg/dL), cardiomegaly on chest X-ray (cardiothoracic ratio 65%) [Figure 2a]. Echocardiography confirmed mild non-tappable pericardial effusion with good myocardial contractility and normal ejection fraction.

In view of short stature, edema, mild macrocytic anemia, hypercholesterolemia and pericardial effusion; differential diagnosis of hypothyroidism was considered. TSH levels were found to be highly elevated 746 mIU/L (normal 0.25-5.5 mIU/L) with T4 0.91 µg/dL (normal 4.6-11.5 µg/dL) and T3 12 ng/dL (normal 59.7-151 ng/dL). USG thyroid was normal and anti-microsomal antibodies level were elevated 450 IU/mL (normal <65 IU/mL) making a diagnosis of autoimmune/ hashimoto thyroiditis. Bone age of the patient was around one and half year, suggesting long standing antecedent hypothyroidism [Figure 2b]. Needle aspiration cytology of the thyroid was not done as there was no goiter or nodules. Blood sugars were normal and anti-tissue transglutaminase antibodies were negative. Her paternal grandmother was also suffering from autoimmune hypothyroidism since 35 years of age.

Pedal edema, facial puffiness and lassitude disappeared within 6 weeks of treatment with L-thyroxine [Figure 1c]. Thyroid function abnormalities and echocardiographic findings also reversed by 12 weeks of treatment.

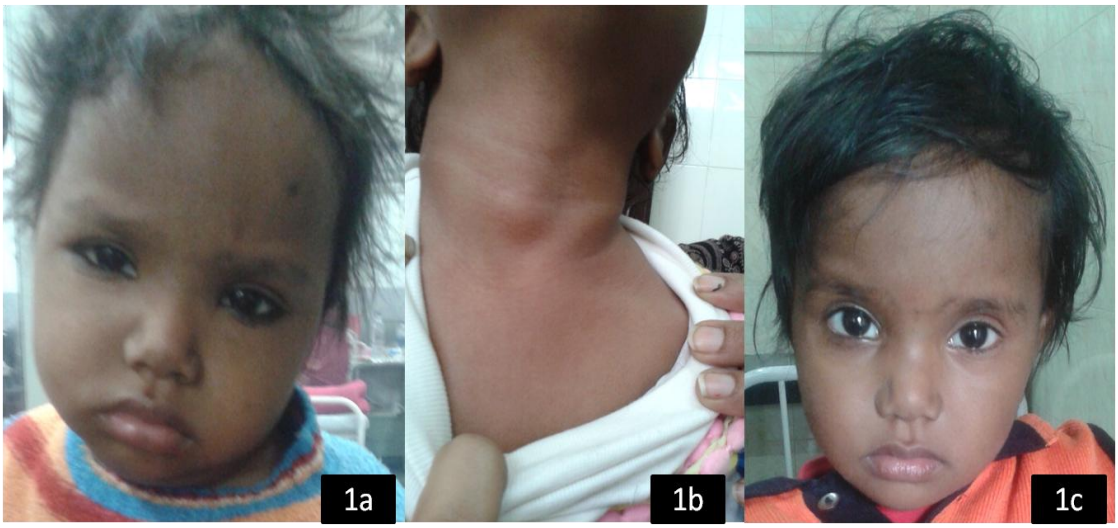

Figure 1: Facial puffiness, coarse and dry skin and hair (a) without any goiter (b) at presentation; Post-treatment disappearance of facial edema and visible changes in the alertness level (c).

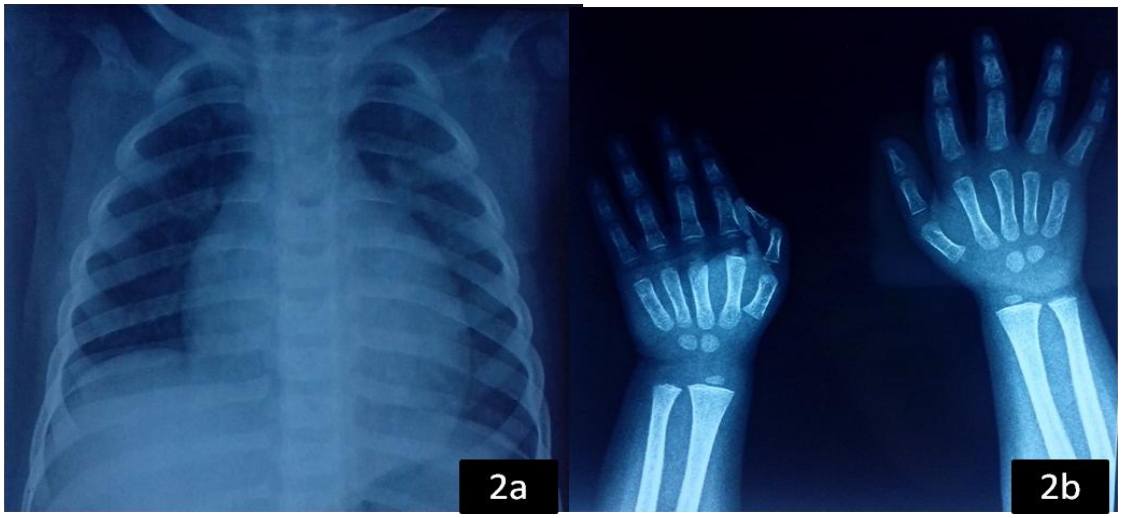

Figure 2: Chest X-ray showing cardiomegaly (a) and delayed bone age (b).

Autoimmune thyroid disease, also called chronic lymphocytic thyroiditis or hashimoto thyroiditis is infrequent below 3 years of age. [1] Pericardial effusion is a recognized complication of long standing hypothyroidism in adults [2] but it has been rarely reported in children with Down syndrome. [3-5] Incidental detection of pericardial effusion with hypercholesterolemia in the present case clinched the diagnosis which resulted in timely intervention. Hypothyroidism should be included in the differential diagnosis of unexplained pericardial effusion especially when associated with lipid abnormalities. Early recognition of hypothyroidism is critical because even the massive pericardial effusions tend to completely resolve with L-thyroxine replacement alone. [2-5]

Authors' contributions

All authors were involved in the patient care. They together reviewed the literature and drafted the manuscript. It has been read and approved by all the authors. All requirements for authorship have been met and each author believes that the manuscript represents an honest work.

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