A Rare Case of Autoimmune Thyroid Disease Associated Nephropathy in a Child

Dear Editor,

Autoimmune thyroid disease (AITD) is often accompanied by damage and lesions on several organs. AITD-associated nephropathy is rare.[1,2] We report a 14-year-old developmentally normal girl who presented with short stature, bilateral genu valgus deformity, menstrual irregularities, and constipation for the last 3-4 years. Examination showed paleness, hypertension (BP=140/90 mmHg), proportionately short stature, bilateral wrist widening, genu valgus, and rachitic rosary [Figure 1]. Her investigations revealed microcytic hypochromic anemia, uremia (urea-90 mg/dL, creatinine-3.4 mg/dL), with 12.5 mL/min/1.73m^2 eGFR, hypocalcemia (6.4 mg/dL), hyperphosphatemia (phosphates- 6.5 mg/dL), high ALP (740 IU/L), low vitamin D3 (6 ng/mL) and high parathormone level (724 pg/mL). Urine analysis showed granular cast and proteinuria. Ultrasound abdomen revealed a bilateral small kidney (6.5, 6.7 cm) and a normal renal doppler. Radiography wrist and knee revealed features of rickets [Figure 2]. Autoimmune profile (ANA, ANCA, C3, C4, IgA) and viral markers (Hepatitis B, Hepatitis C, HIV) were normal. Further evaluation showed high TSH (>100 mIU/L) and very high anti TPO antibodies (>1000.00 IU/mL). She was diagnosed with stage V chronic kidney disease (CKD) associated with autoimmune hypothyroidism. Kidneys were shrunken, so a biopsy could not be done. Although CKD etiology could not be confirmed, it could be related to autoimmune hypothyroidism, which can be complicated by immune complex-mediated chronic glomerulonephritis and subsequent CKD.[1,2] Glomerular involvement is seen in 10-30% AITD cases.[2] The most common renal diseases in AITD are membranous nephropathy, membranoproliferative glomerulonephritis, minimal change disease, IgA nephropathy, focal segmental glomerulosclerosis, and antineutrophil cytoplasmic autoantibody vasculitis.[3,4] Glomerular deposition of immunocomplexes of thyroglobulin and autoantibodies, as well as impaired immune tolerance for megalin (a thyrotrophin-regulated glycoprotein expressed on thyroid cells), are the most probable mechanisms causing nephropathy.[2]

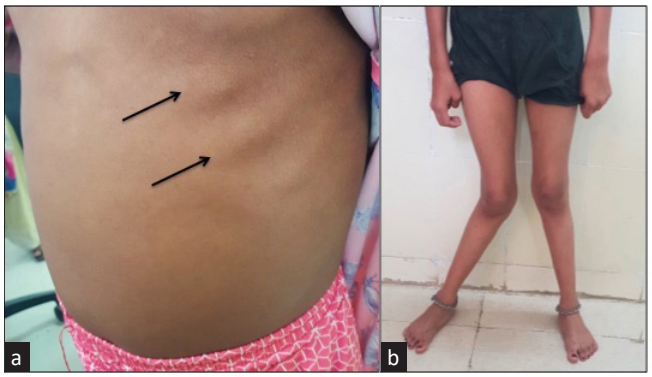

Figure 1: (a) Chest photograph showing rachitic rosary at left costochondral junction (black arrows), (b) Bilateral lower limb photograph showing genu valgus deformity.

Figure 2: (a) Wrist radiography showing features of rickets, (b) bilateral knee radiography showing features of rickets (cupping, splaying, and fraying).

Conflicts of interest: There are no conflicts of interest.

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