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New onset Type 1 diabetes presenting as DKA simultaneously presenting with Graves' disease

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The case: A previously well 24-year-old man presented with polydipsia, polyuria and vomiting. He reported a recent 12 kg weight loss. Admission glucose was 26.1 mmol/l. His arterial blood gas measurements confirmed a metabolic acidosis. He was diagnosed with newly presenting Type 1 diabetes with DKA and managed appropriately. Further tests taken at the time of admission showed a thyroxine of 48 pmol/L (8–21), triiodothyronine of 16.7 pmol/l (3.8–6.0) and TSH of <0.01 mIU/l (0.35–3.5). Anti-TPO and anti-GAD antibodies were positive. New onset Graves' disease was also diagnosed and he was started on carbimazole.

Discussion: This case is unusual because both disorders presented for the first time together. We have found just three previous cases of newly diagnosed DKA and thyrotoxicosis presenting simultaneously. However, all were female and 2 presented with acute abdominal surgical emergencies. Over 13% of patients with Type 1 diabetes have thyroid dysfunction. Thyrotoxicosis worsens glycaemic control by various mechanisms such as increasing production of basal glucose and increasing absorption of exogenous glucose. It is also thought to increase peripheral insulin resistance. The co-existence of two or more autoimmune endocrine disorders in the same patient is described as an autoimmune polyglandular syndrome (APS). This case was an example of an APS Type 2 diabetes patient.

Summary: DKA can mask thyrotoxicosis. Exclusion of other associated endocrine conditions when an autoimmune disease is diagnosed is essential. Thyrotoxicosis should be added to the list of potential precipitants for DKA.