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A Case of Hypophysitis Associated With SARS-CoV2 Vaccination

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Objective: Although SARS-CoV2 vaccines have been developed with multiple novel technologies and rapidly disseminated worldwide, the full profile of adverse effects has not been known. Recently, there are sporadic but increasing reports of endocrinopathies in relation to SARS-CoV2 vaccination. Here, we report a rare case of hypophysitis with acute onset of diabetes insipidus after SARS-CoV2 vaccination.

Case Report: A 48-year-old female who had been in her usual state of health until she received the first SARS-CoV2 vaccine. Two days after the vaccination, she started to have flu-like symptoms including severe headache and myalgia as well as persistent headache, polydipsia and polyuria. On presentation, her vital signs were stable, with her pulse being 81 bpm, BP: 122/84 mm Hg, temperature: 98.6F. Her physical examination was unremarkable. Laboratory evaluation revealed normal values of the basic metabolic panel including sodium level of 142 mmol/L and normal complete blood count. Due to her prolonged and worsening headache, she underwent a brain MRI which revealed a 4 mm round shape of thickening pituitary stalk and partial empty sella. The polydipsia, polyuria, and the thickening of the pituitary stalk led to further pituitary work-up. She underwent the overnight water deprivation test followed by the desmopressin challenge test. Her overnight water deprivation test revealed hypernatremia (Na 147 mmol/ L), elevated serum osmolarity (309 mmol/kg), and low urinary osmolarity (83 mmol/kg) which were compatible with diabetes insipidus. Her IGF1 level revealed low normal range (66 ng/mL). Her 250 mcg cosyntropin test showed appropriate response without adrenal insufficiency. DDAVP was started. 3 months after the vaccination, her symptoms have partially improved, and on repeating the MRI brain she has persistent pituitary stalk thickening.

Discussion: We report a rare case of diabetes insipidus from hypophysitis associated with SARS-CoV2 vaccine. Mechanisms of SARS-CoV2 vaccination-associated endocrinopathy is unknown. From our literature search, we found increasing numbers of the cases of endocrinopathy reported after the SARS- CoV2 vaccination. The thyroid seems the most frequently reported endocrine organ (83%), followed by the pituitary (11%) and adrenal (6%). Average onset is 1-5 days after the vaccinations and reported with all types of SARS-CoV2 vaccines. More midage (average age 46) female (78%) cases have been reported. Although associations are not confirmed, endocrinopathies may be underestimated in the post vaccinated population. Further studies are warranted to better understand SARS-CoV2 vaccinations and potential associations of endocrinopathy.

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