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MACROPROLACTINEMIA WITH CO-EXISTING PITUITARY MACROADENOMA AS A DIFFERENTIAL FOR DOPAMINE-AGONIST RESISTANT PROLACTINOMA

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INTRODUCTION

Macroprolactinemia is a condition where there is assay interference resulting to a falsely elevated prolactin level. The interference is due to the presence of antibodies that form large complexes with existing prolactin. This condition is asymptomatic and has no direct effects on health. It may coincide with a non-functioning pituitary adenoma and may be mistaken for drug resistant prolactinoma.

CASE

We present a case of a 63-year-old female with chronic headaches for 2 years with blurred vision which necessitated imaging. There was a finding of pituitary macroadenoma (0.7 x 1.2 x 0.8 cm) on MRI Brain. Anterior pituitary hormone panel revealed hyperprolactinemia and hypogonadotropic hypogonadism. Serum prolactin was 8510 mIU/L (NR <500 mIU/L), serum oestradiol <43 pmol/L, leutenizing hormone (LH) 0.1 mIU/L (NR 2.4 – 12.6) and follicle-stimulating hormone (FSH) 3.2 mIU/L (NR 3.5 – 12.5). Other pituitary hormones were normal.

A diagnosis of prolactinoma was made. She was started on cabergoline initially at 0.25 mg twice weekly and dose increased according to serum prolactin response. She required cabergoline doses of 7 mg weekly to achieve normalization of serum prolactin. Serial MRI Pituitary showed no change in size of pituitary lesion despite treatment duration of >2 years. These are consistent with Dopamine-agonist resistant prolactinoma. Subsequently, PEG Precipitation analysis of serum prolactin was performed to assess for macroprolactinemia. This confirmed presence of macroprolactinemia with the percentage of PEG-precipitable prolactin being 64% (>60% is diagnostic). Cabergoline was stopped with subsequent monitoring of anterior pituitary hormones.

CONCLUSION

The diagnosis is Macroprolactinemia with co-existing non-functioning pituitary adenoma. The management is drastically different from a drug resistant Prolactinoma which requires surgical intervention. This highlights the importance of establishing the correct diagnosis and having a high index suspicion of assessing for macroprolactin.

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NEW-ONSET THYROID EYE DISEASE AFTER COVID-19 VACCINATION: A CASE REPORT

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INTRODUCTION

The relationship between autoimmunity and SARS-CoV-2 vaccine has explained how thyroid dysfunction developed following vaccination but the onset of thyroid eye disease (TED) is scarcely described. We report a case of Graves' disease (GD) who developed TED after three weeks of BNT162B2 SARS-CoV-2 vaccine (Pfizer-BioNTech) injection.

CASE

A 54-year-old non-smoking male presented with new-onset bilateral eyes redness, proptosis, and diplopia three weeks after receiving the second dose of mRNA BNT162B2 SARS-CoV-2 vaccine. He was diagnosed with GD without TED in 2003 and underwent radioactive iodine ablation in 2020. He subsequently developed hypothyroidism and was started on levothyroxine with stable thyroid function test throughout clinic visits. There were no recent stressful events including COVID-19 infection. On examination, he has bilateral exophthalmos, chemosis, conjunctival injection, swollen eyelids and caruncles, with intact vision. Blood tests revealed normal TSH, free T4, and T3, but elevated TSH-receptor antibodies of 3.60 IU/L (<1.75) and anti-thyroid peroxidase (TPO) antibodies of >600 IU/ml (0-34). MRI orbit showed bilateral extraocular muscle enlargement and proptosis. Intravenous methylprednisolone was given weekly for 12 weeks. There was significant improvement concerning congestive symptoms and diplopia after the third dose of methylprednisolone.

Thyroid eye disease is the extrathyroidal manifestation of GD resulting from the autoimmune and inflammatory process. The temporal relationship of the onset of TED after mRNA SARS-CoV-2 vaccination in our case was suggestive, and there were no other inciting events identified. The postulated mechanisms include immune reactivation, molecular mimicry between the SARS-CoV-2 spike proteins and thyroid proteins, and the autoimmune/inflammatory syndrome induced by adjuvants present in the mRNA vaccine.

CONCLUSION

Patients with autoimmune thyroiditis should be monitored closely after SARS-CoV-2 vaccine as they may develop TED and require treatment.