Hypopituitarism presenting with features of stiff person syndrome

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Introduction

- Stiff person syndrome (SPS) is a progressive neurological disorder characterized by fluctuating stiffness, rigidity, and spasms involving both axial and limb muscles. It is associated with a variety of conditions, such as paraneoplastic neurological disease, infection, and autoimmune disorders. The pathophysiology of SPS remains incompletely understood, and the diagnosis is often challenging.

Case

A 66-year-old woman presented to the hospital with a 12-month history of lower back pain and progressive stiffness, with symptoms involving both axial and limb muscles. She had been experiencing migrainous headaches, cranial nerve abnormalities, and upper limb examination was normal. Lower limb examination showed resistance to passive movements, power was normal, but limited by pain, reflexes were brisk, and planters were equivocal. Continuous muscle activity was noted over the medial thighs bilaterally. Initial investigations were equivocal. Continuous muscle activity was noted over the medial thighs bilaterally.

- A diagnosis of possible SPS was made, and regular benzodiazepines were commenced. Extensive investigation ruled out other neurological disease and conditions associated with SPS (Table 1).
- Endocrine assessment showed TSH and gonadotrophin deficiency. A short synacthen test was normal and an ACTH deficiency was suspected.
- MRI spine showed no intrinsic cord abnormality. Central disc portions - D4/5, D5/6.
- No structural brain abnormality. No ictal or interictal epileptiform activity in EEG.
- No characteristic abnormalities seen on MRI, with normal uptake in the right tonsil.
- No evidence of malignancy.
- No intrinsic cord abnormality.
- No atrophy of cerebellar folia.
- No intrinsic cord abnormality.
- No structural brain abnormality.
- No intrinsic cord abnormality.

Investigations

- Regular hydrocortisone was weaned down and stopped, with advice to take steroids during intercurrent illness. Within 4 days of stopping treatment, her symptoms recurred and mobility worsened. There was no response to baclofen and increased benzodiazepines.
- Recommmencement of hydrocortisone replacement resulted in a dramatic resolution of symptoms. Three months later she remains in remission with normal mobility.

Discussion

- The diagnosis of SPS is based on characteristic clinical features, supported by the presence of anti-GAD antibodies and continuous motor-unit activity on EMG.
- Our patient’s history, examination findings, and response to benzodiazepines were suggestive of SPS even though the stiffness was confined to the legs and anti-GAD antibodies were negative (can be absent in 40% of cases). Although EMG was negative, the muscles of interest (adductors) could not be assessed.
- Complete resolution of neuromuscular symptoms with hydrocortisone in our case, as well as in a few previously reported cases, has led to the suggestion that presentation of hypopituitarism with a syndrome like SPS is a rare but recognised entity.
- The pathogenesis of SPS is unclear, although an autoimmuno toxicity is suspected.
- The role of cortisol deficiency in the pathophysiology needs to be elucidated further. Glucocorticoids have a role in maintaining metabolic function within muscles. The features of SPS in our patient could simply represent the musculoskeletal manifestations of cortisol deficiency.
- Thus, we describe a case of hypopituitarism (GH, gonadotrophin, TSH and partial ACTH deficiency) presenting in a patient with clinical features suggestive of SPS. Despite a favourable initial response to GABA-enhancing drugs, a lasting clinical remission was only achieved with hydrocortisone replacement therapy.
- Appropriate endocrine evaluation and pituitary hormone replacement may alleviate the significant morbidity associated with this condition.

References: