Development, Diagnosis, Treatment, and Prevention of Hypophysitis

Introduction

The pituitary gland is the master gland of the body that causes chain reactions within the endocrine system. Its job is to maintain homeostasis within the body. With autoimmune diseases like hypophysitis on the rise and disrupting homeostasis, it is important to understand the pituitary's role in the body and how hypophysitis presents itself so that a diagnosis can be made and treatment and prevention can begin.

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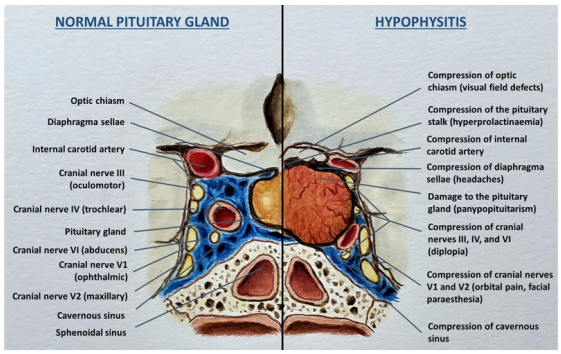
Research Question

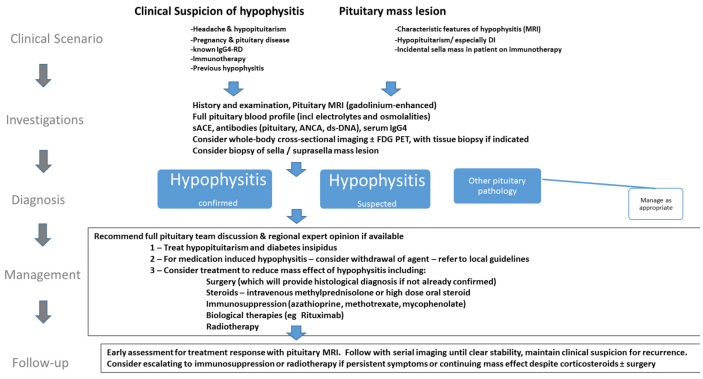
How does hypophysitis present itself as a disease?

What diagnosis procedures, treatment options, and prevention methods are available and effective?

Background and Literature Review



Management algorithm for the patient with hypophysitis



Characteristics	Lymphocytic adenohypophysitis (LAH)	Lymphocytic infundibuloneurohypophysitis (LINH)	Lymphocytic infundibulopanhypophysitis (LIPH)
Anatomical region	Anterior pituitary	Posterior pituitary	Anterior and posterior pituitary
Anterior pituitary hormone deficiencies	Very common	Uncommon	Very common
Diabetes insipidus	Less frequent	Core symptom	Core symptom
Hyperprolactinemia	Present in 17–23% patients	Rare (5% of patients)	Present in 17–23% patients
Female to male ratio	4:3	1:3	1:7
Association with pregnancy	Majority of affected women	Less frequent	Less frequent
MRI findings	Symmetrically enlarged anterior pituitary, often with suprasellar extension, enhancing with contrast	Diffusely thickened pituitary stalk, loss of the posterior pituitary bright spot, normal anterior pituitary appearance	Combination of changes seen in LAH and LINH
Histopathology	Diffuse lymphocytic infiltrate in anterior pituitary with disruption of normal architecture	Lymphocytic infiltration in neurohypophysis	Lymphocytic infiltrate in both anterior pituitary and neurohypophysis

Methods

This study involves analyzing peer-reviewed articles from animal and human clinical studies. There are statistics and reports available from different countries that review the ratio of men versus women as well as certain age groups that are susceptible to hypophysitis.

This study also analyzes what diagnosis procedures and treatments are effective. Some studies include in depth research into relapses due to medication tolerance as well as side effects to certain drugs.

Expected Results

Although there is room for improvement on ways to diagnose, treat, and prevent hypophysitis, studies show that some methods can be effective.

Because hypophysitis is classified as an autoimmune disease, one can expect to find T cells, B cells, cytokines, and other white blood cell components affecting the pituitary gland and the surrounding tissue.

Since the pituitary is a gland that secretes several different hormones to other endocrine tissues, one may also find insufficient hormone levels as well as impaired endocrine organs.

The article by Gubbi et al. (2018) notes a lack of studies to determine if certain geographic areas or ethnicities are affected more then others.

Significance

Science is continually finding new and more effective ways to treat diseases. Studying hypophysitis is crucial in understanding how it manifests so that effective diagnosis and treatments can be given to those who are suffering. The disadvantage to this topic is the lack of complete and long term human studies that are consistent.

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