Lymphocytic Hypophysitis: Case Report

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Abstract: The lymphocytic hypophysitis is a rare autoimmune process; its diagnosis is difficult because of the low specificity of the clinical signs. The diagnosis is based on the association of clinical, radiological, hormonal and immunological data.

We report the case of a 43 years old female patient suffering from chronic headache with decreased visual acuity for 1 year, amenorrhea and galactorrhea, and progressive fatigue.

The complete hormonal examination showed adrenocorticotropic failure, thyrotropic deficiency, moderate hyperprolactinaemia and normal FSH.

MRI showed a nodular intrasellar mass extending to the upper border, measuring 11x11x13 mm, enhancing after contrast injection. The mass was filling the optochiasmatic space and lifting the optic chiasm. There was an associated thickening of the pituitary, which was not displaced and was still taking the contrast.

Lymphocytic hypophysitis was suspected and the patient was treated with Prednisone 1mg / kg / day (60 mg) with reduction of dosage over six months, and substitution by thyroid hormones with a dosage of about 75 µg per day.

The treatment was followed by reestablishment of menstruation and by the disappearance of headaches. The control MRI showed a reduction in the size of pituitary process.

Keywords: Lymphocytic hypophysitis, pituitary gland, hypopituitarism, autoimmunity, Magnetic Resonance Imaging.

INTRODUCTION

The lymphocytic hypophysitis looks like an autoimmune process first described in 1962 by Goudie and Pinkerson [1] on occasion of the autopsy of a 22 years old woman, with a history of Hashimoto's thyroiditis, dead 14 months after her second childbirth.

Classically, it is described as rare, but given the number of cases reported in the literature, its frequency is probably undervalued.

The classic presentation contains symptoms of sellar mass with or without hypopituitarism in variable degrees [2, 3].

The MRI is a referential examination [4].

The diagnostic confirmation is obtained by the pituitary biopsy; some cases can be treated on the basis of clinical and radiological data [5].

The present case is useful to describe clinical, therapeutic and evolutionary aspects of lymphocytic hypophysitis.

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CASE DESCRIPTION

This is about a 43 years old female patient, with primary infertility, who suffered for 1 year from chronic headaches with a decrease in visual acuity, without diplopia, complicated, since 8 months by amenorrhea, galactorrhea and asthenia without polyuropolydipsic syndrome.

Adrenocorticotropic hormone insufficiency was documented by a cortisol level cortisol of 3.5µg/dl at 8AM (normal range values are 62-194), thyroid deficiency by a fT4 to 0.59 ng/dl (normal range values are 9-20), with normal TSH, while plasma prolactin was 39.74 ng/ml and 43.28ng/ml in two measurements (normal range values are 3.24- 29.12). FSH was 60.6 mui/ml (normal values are 36.6- 168.8). It should be noted that the patient was amenorrheic at the time of the measurement.

Hypophysar MRI revealed a well-rounded expansive intrasellar mass, limited to the upper border and convex in iso T1 signal, enhancing after contrast injection, measuring 11 x 18 x 13 mm, filling the optochiasmatic space and lifting the optic chiasm; associated with a thickening aspect of the pituitary stalk that remains median and takes contrast (Figure **1a**, **b**, **c**).

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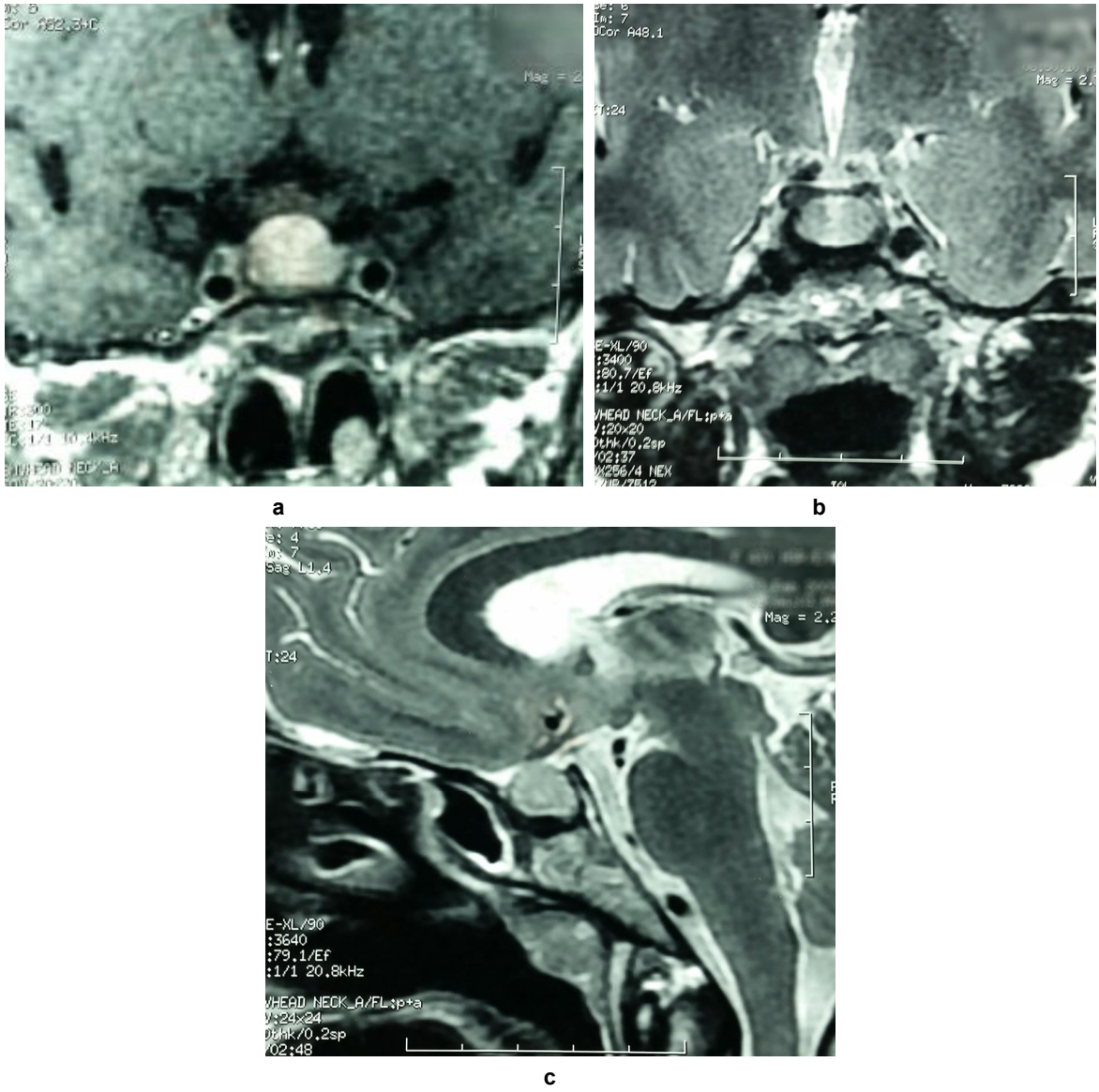

Figure 1: Initial MRI of the patient.

(**a**) Coronal section in T1 and T1 + Gadolinium contrast sequence, showing an Intrahypophyseal lesion filling the optochiasmatic space, in isointense T1, enhancing with contrast.

(**b**, **c**) Discrete Intrahypophyseal mass on T2.

Perimetry assessment revealed the patient's visual field was altered (Binasial hemianopsia).

Lymphocytic hypophysitis was suspected and the patient was given Prednisone 1 mg / kg / day (or 60 mg) with reduction of the doses over 6 months, and substitution by thyroid hormones with dose of 75µg per day.

The treatment was followed by reestablishment of menstruation and by the disappearance of headaches.

The MRI scan performed after one year showed a reduction of the size of the pituitary process (Figure **2**).

DISCUSSION

Since the first description by Goudie and Pinkerson in 1962, about 400 cases of lymphocytic hypophysitis have been reported [6], its incidence is estimated 1/9 million / year [7].

The frequency of this pathology is difficult to evaluate because of the variability of symptoms and potential spontaneous remission making us probably underestimate its incidence [2, 3].

There is a female predominance, particularly among women in per partum period. The sex ratio is approximately 5/1 [8].

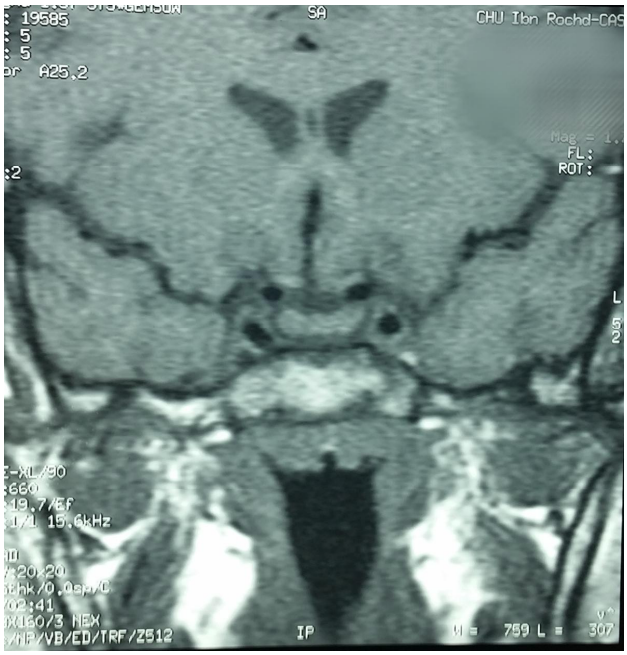

Figure 2: Control MRI after treatment showing the reduction of the size of the pituitary mass.

The average age at the diagnosis is 34.5 years old for women and 44.7 years for men [9].

Histological examination after pituitary biopsy is the gold standard for the diagnosis of the lymphocytic hypophysitis showing lymphoplasmacytic infiltration of the pituitary [4].

Being invasive, biopsy is often avoided and the diagnosis is based on the association of clinical, hormonal, immunological and radiological data [5], as well as on the response to immunosuppressive treatment.

The clinical picture is associated to variable degrees of a tumoral syndrome and endocrine deficiencies.

Endocrine deficiency may be highly variable depending on the cases: adrenocorticotropic (about 65% of cases) [10], thyrotropic (over 60% of cases) [8], somatotropic (25% of the cases) [11] and gonadotropic [8]. Hyperprolactinemia is present in about a third of the patients, causing amenorrhea and galactorrhea in women [12] and sexual dysfunction in men [13]. In our case, the increased prolactin was probably due to infundibulum compression. The affection of the neurohypophysis is manifested by diabetes insipidus, sometimes concealed by an associated adrenocorticotropic hormone deficiency.

MRI in the hypophysitis case is the best diagnostic test. The clinical signs are nonspecific but may permit the diagnosis in association with the clinical evidence and the complete physical examination. It shows a homogeneous pituitary, expanded with symmetric suprasellar extension with intense and homogeneous contrast enhancement. The pituitary stalk remains median and is in place, it may be thickened. At the post pituitary level, we notice loss of T1-hypersignal.

The differential diagnosis concerns, in essence, the distinction of hypophysitis from pituitary adenomas. The Table **1** summarizes the features that allow distinguishing between the two entities [8, 14].

Therapeutically, the treatment of the patients with hypophysitis is variable depending on the clinical presentation.

In all the cases, diabetes insipidus and anterior pituitary deficiency, especially corticotropic, are researched and treated.

In the case of diagnostic dead-end (nonspecific neuroradiological aspect and clinical context and not sufficiently evocative hormonal exploration) and a rapid deterioration of the acuity and / or the visual field, only a pituitary surgery allows both freeing the visual pathways and establishing a definitive histological diagnosis of the lesion [15].

Table 1: Comparison of MRI Signs of Lymphocytic Hypophysitis and Pituitary Adenoma

	Hypophysitis	**Macroadenoma**	**Our patient**
Symmetry	Symmetrical	Asymmetrical	Symmetrical
Signal before injection	Homogeneous	Variable	Homogeneous
Intact sellar floor	Yes	Variable	Yes
Pituitary stalk	Thickened	Thin	Thickened
Pituitary stalk	In place	Deviated	In place
Contrast enhancement	Intense	-	Intense
Posterior hypophysis	Loss of hypersignal T1	-	Loss of the hypersignal T1

The surgery by transsphenoidal way is effective but the mortality it engenders makes it a second-line treatment after failure of medical treatment in severe forms [16, 17].

Conversely, when the imagery and the context are suggestive of lymphocytic hypophysitis, we can try medical treatment.

Glucocorticoids, anti-inflammatory and immunosuppressive drugs, have been suggested as a choice treatment [18, 19].

The national group of research about hypothalamic pituitary disorders (20) provides an equivalent dose of prednisolone 1 mg / kg / day for patients with signs of compression resulting from the pituitary enlargement.

The high dose of methylprednisolone bolus therapy appears to be effective in about 30% of the patients [21].

Finally, when there is little or no visual degradation, even when the diagnosis is uncertain, the treatment may be limited, after the substitution of the hormone deficiency, to close monitoring of the lesion by MRI and visual functional explorations [8].

In the absence of treatment, the lymphocytic hypophysitis may change in different ways. We may observe spontaneous regression or increase of an anterior pituitary failure or even death [8, 22].

CONCLUSION

The diagnosis of the lymphocytic hypophysitis is a difficult diagnosis. The MRI is a referential examination. In our patient the diagnosis was based on various clinical, radiological and evolutive arguments.

The authors declare that there is no conflict of interest regarding the publication of this paper.

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