Unusual MRI findings in lymphocytic hypophysitis with central diabetes insipidus

Abstract We report an unusual case of lymphocytic hypophysitis, which proved to be cystic at surgery.

Key words Hypophysitis · lymphocytic · Pituitary tumour · Diabetes insipidus · Magnetic resonance imaging

Introduction

Previous reports of lymphocytic hypophysitis have described nonspecific enlargement of various components of the gland. We describe an unusual case with a necrotic cyst.

Case report

A 28-year-old woman suddenly developed galactorrhea, followed 2 weeks later by polyuria and polydipsia. Neurological examination was normal. The data (plasma osmolarity 281 mOsm, urine 141 mOsm, urinary specific gravity 1.005, antidiuretic hormone 0.9 pg/ml) and a hypertonic saline loading test confirmed the diagnosis of central diabetes insipidus. Serum prolactin was slightly increased. T1-weighted MRI revealed a homogeneous, slightly high-signal mass in the posterior lobe of the pituitary. A sagittal section demonstrated the contrast enhancing gland and infundibulum, which was displaced anteriorly. Coronal sections revealed a nonenhancing mass on the left. With a diagnosis of cystic pituitary tumour, transphenoidal exploration was performed. Behind the normal pituitary gland, a yellowish, elastic, firm cyst wall was exposed. On incising the cyst creamy, necrotic material was obtained. Pathological examination revealed dense infiltration of lymphocytes, plasmacytes and some eosinophils with remnants of normal fibrotic neurohypophyseal tissue, compatible with a chronic inflammation change. The adenohypophysis also showed striking infiltration of lymphocytes, but less than in the posterior lobe. There were no casseous necrosis, epithelial cells, granulomas, giant cells, neurophils or neoplastic elements. A diagnosis of lymphocytic hypophysitis was made.

Postoperative endocrine examinations showed a normal prolactin level and the galactorrhea disappeared. The patient needed DDAVP to control her diabetes insipidus.

Discussion

Dense lymphocytic and plasma cell infiltration of the pituitary has been categorized according to the site of the infiltrate location: lymphocytic adenohypophysitis (LAH): infiltration confined to the adenohypophysis [1]; lymphocytic infundibuloneurohypophysitis (LINH):
Fig. 1  a Sagittal T1-weighted image demonstrating a slightly high-signal intrasellar mass in the posterior lobe.  b A contrast-enhanced image shows anterior displacement of the enhancing gland and infundibulum.  c A coronal view demonstrated enhancement of the gland on the right side.

infiltration of the infundibulum and neurohypophysis [2]; and lymphocytic hypophysitis (LH): infiltration of both the adeno- and neurohypophysis [3]. We diagnosed our case as LH.

On MRI LAH shows symmetrical enlargement of the pituitary gland, homogeneous enhancement of the mass and often compression of the optic chiasm [1]. LH in some cases and LINH characteristically show lack of the high signal of the normal neurohypophysis on T1-weighted images, thickening of the pituitary stalk, and enlargement of the pituitary gland [2, 3]. No clear distinction between LH and LINH was made on MRI in previous reports. MRI in LH, therefore, shows a symmetrical pituitary mass without focal signs in the infra- and suprasellar region. Nishioka et al. [4] reported a patient with LH who presented with diabetes insipidus. An intrasellar mass was found in the sella. Our patient, however, had a cystic mass in the posterior lobe. There are thus variations of the MRI features of LH.

References