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Sellar metastases

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Summary

Tumor metastases within the sellar region are uncommon, accounting for up to 5% of all malignant lesions, and they can mimic pituitary tumor. These metastases are usually observed in older patients, with advanced and generalized neoplastic disease, but also can be the first manifestation of the cancer. Possible hormonal disturbances are diabetes insipidus, hypopituitarism, isolated hormone deficiency and mild hyperprolactinemia. Mass effects, visual field defects, and headaches occur, too. The most common origin of the pituitary metastases are breast and lung cancer, then colon, prostate, pancreas, thyroid, hematologic disorders and other neoplasms. The treatment options include neurosurgical resection, irradiation and chemotherapy. In some cases transsphenoidal surgery might be helpful for the proper histological diagnosis. The prognosis is poor and is related to the response to the therapy of primary focus. Cases of lung tumor metastatic to the pituitary and lymphoma infiltrating the hypothalamus will be presented and discussed.

KEY WORDS: sellar metastases; hypopituitarism; cancer.

Introduction

Tumor metastases within the sellar region are uncommon, accounting for up to 5% of all malignant lesions, and they can mimic pituitary tumor. Similarly, the autopsy studies show their presence in less than 5% (1-3). These metastases are usually observed in older patients, with advanced and generalized neoplastic disease, but also can be the first manifestation of the cancer. It is difficult to differentiate the benign pituitary adenomas from metastatic masses basing only on the visualization by MRI or CT, (4,5). In many cases the clinical course and anamnesis are crucial. Metastatic lesions more often result in the hormonal deficits of several axes, mild hyperprolactinemia, they cause diabetes insipidus due to localization in posterior pituitary. They can be clinically silent for long time, and diagnosed in advanced stage or by autopsy. Symptomatic metastatic tumors lead to local complications, as optic chiasm compression or infiltration with vision disturbances and loss, optic nerve palsy, osseous destruction, cavernous sinuses and brain structures involvement with intracranial hypertension. Headache or ophthalmoplegia occurrence suggests pituitary metastasis (1-6).

The most common origin of the pituitary metastases are breast and lung cancer, then colon, prostate, pancreas, thyroid, uterus, bladder, liver, hematologic disorders and other neoplasms (1-8).

The treatment options include neurosurgical resection, irradiation and chemotherapy. In some cases transsphenoidal surgery might be helpful for the proper histological diagnosis. The prognosis is poor and is related to the response to the therapy of primary focus (5-10).

Cases of lung tumor metastatic to the pituitary (9) and lymphoma infiltrating the hypothalamus with secondary hypopituitarism (10) are presented.

Case 1

67-ys man with prostatic cancer history, suffering from fatigue, weakness, cold feeling, blurred vision was submitted to the endocrinologist. Head CT revealed large sellar mass, 3.3 x 2.1 x 1.8 cm in diameter, with contrast enhancement and partial sellar osteolysis, the mass compressed optic chiasm and infiltrated the sphenoid sinus. Pituitary MRI showed large tumor 4.0 x 3.4 x 1.8 cm, located intra- and extrasellar, infiltrating cavernous and sphenoid sinuses, compressing optic chiasm and third ventricle (Fig. 1). Hypopituitarism was confirmed and replacement therapy was administered, and because of progressing vision loss the patient was submitted to neurosurgery. Following the successful neurosurgery the histology of resected tumor revealed small cell carcinoma with neuroendocrine granulations. The diagnosis of metastatic pituitary tumor was established, and further diagnostics was continued. Lung small cell carcinoma with metastases to the liver and pituitary was diagnosed, and chemotherapy started. Patient died due to progression of lung carcinoma.

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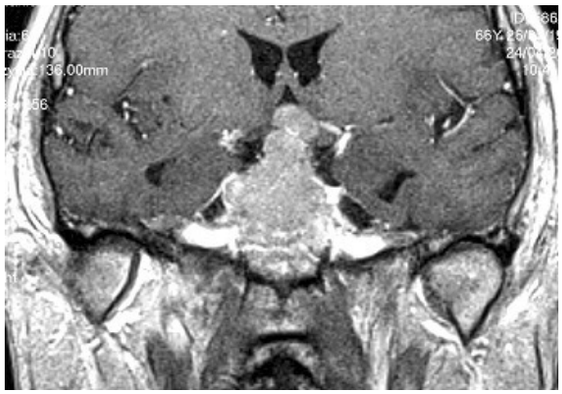

Figure 1 - Coronal contrast-enhanced T1-weighted MR image of expansive large pituitary mass (4.0 x 3.4 x 1.8 cm) intra- and suprasellar, infiltrating left and right cavernous sinus, sphenoid sinus, with optic chiasm and third ventricle compression.

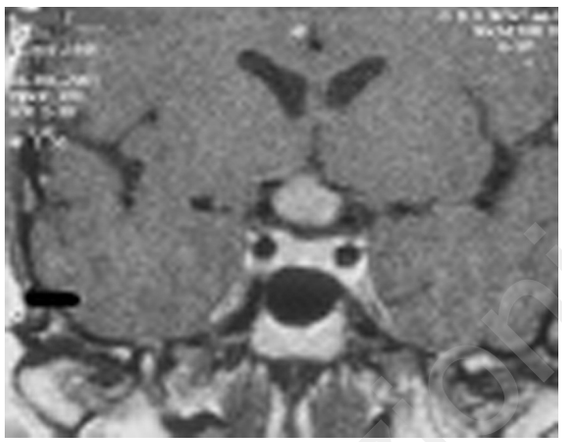

Figure 2 - Coronal contrast-enhanced T1-weighted MR image shows optic chiasm infiltration 1.7 x 1.3 cm. Pituitary gland is normal.

Case 2

In 55-ys man with diffuse malignant lymphoma type B transient optic chiasm infiltration and visual disturbances but with persistent hypopituitarism, hyperprolactinemia and diabetes insipidus occurred. The patient was administered chemotherapy and radiotherapy. Repeated MRI and CT scans showed optic chiasm infiltration (Fig. 2), which disappeared in the course of the chemotherapy but then recurred, changed its appearance and finally disappeared again (Fig. 3). In the meantime visual disturbances occurred and disappeared during the therapy. Hypopituitarism due to hypothalamus infiltration, diabetes insipidus and hyperprolactinemia were diagnosed and replacement therapy was administered. The patient died as a result of systemic complications of the disease. Although pituitary metastases are rare, their occurrence must be taken into consideration in patients with cancer history, progressive course and aggressive behavior of pituitary mass. Sometimes, histological examination following tumor surgery can indicate the origin of metastasis and allow to start proper therapy.

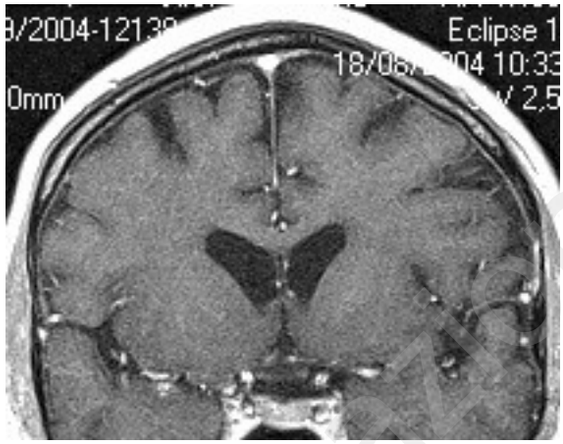

Figure 3 - Coronal contrast-enhanced T1-weighted MR image shows no pathological changes within suprasellar region. Optic chiasm is still normal; regression of the lesion previously seen.

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