A CASE OF LUNG CANCER WITH PITUITARY METASTASIS PRESENTED BY DIABETES INSIPIDUS

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Introduction:

Pituitary metastases are rare in patients with cancer [1]. They are often related to primary breast (20 % to 30% of cases) or lung cancers (30% to 50% of cases) [2]. Pituitary metastases are symptomatic in only 8% of cases [2]. The most common presenting symptoms are diabetes insipidus (DI) and/or oculomotor nerve palsies [1]. Herein, we report a case of diabetes insipidus that was caused by pituitary metastasis from lung adenocarcinoma.

Case Report:

A 71-year-old male was admitted to Endocrinology department with polydipsia, polyuria and blurred vision. Urine volume was approximately 5L per day. He had been diagnosed as having lung adenocarcinoma with multiple liver and bone metastases one year ago. He took chemotherapies with 4 cycles of paclitaxel, carboplatin, zoledronic acid and radiation therapy (RT) .The size of the lung mass was reduced on the follow-up computed tomography scan; thus, patient exhibited a partial response. Due to his complaints like as DI, pituitary MRI was done that showed a mass which occupied infundibulum and the pituitary gland. Older MRI was explored again by us and seen an undiagnosed mass involved stalk and part of the right anterior pituitary (Figure 1). The serum osmolality was 310 mOsm/kg, whereas the urine density was 1005. Laboratory results were; GH: 0.098 ng/mL, IGF-1 was 51.4 µg/L (64-188), TSH: 0.249 IU/mL (0.27- 4.2), free T4: 0.452 ng/dL (0.93-1.7), FSH: 0.492 IU/mL (1.5-12.4), LH: 0.1 IU/mL (1.7-8.6), total testosterone: 0.025 ng/mL (1.93-7.4), ACTH: <1 pg/mL (7.2-63.3), cortisol: 0.755 µg/dL (6.2-19.4), prolactin: 2.71 ng/mL (4.04-15.2), Na:143 mEq/l (135-145). Patient started to use desmopressin nasal spray %0.1 mg/ml two puffs/day, prednisolone 5 mg, levothyroxine 25 µg/day. His urine volume was normalized; the polydipsia ceased and his condition becomes clinically better. Also radiation oncology department planned RT for pituitary metastases. After RT finished control hypophyseal MR was performed. There has been any difference between two MRI studies yet (Figure 2).

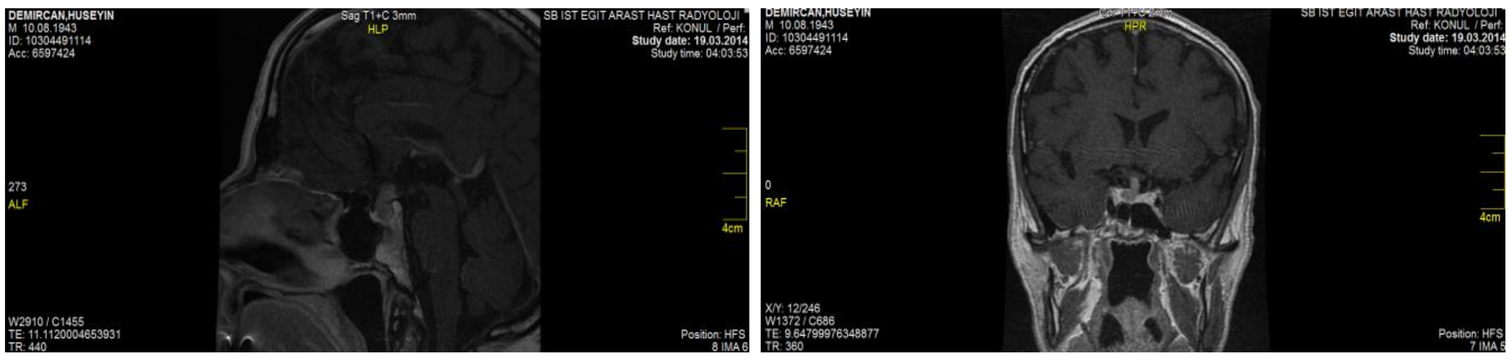

Figure 1. A mass involved stalk and part of the right anterior pituitary on the first MRI

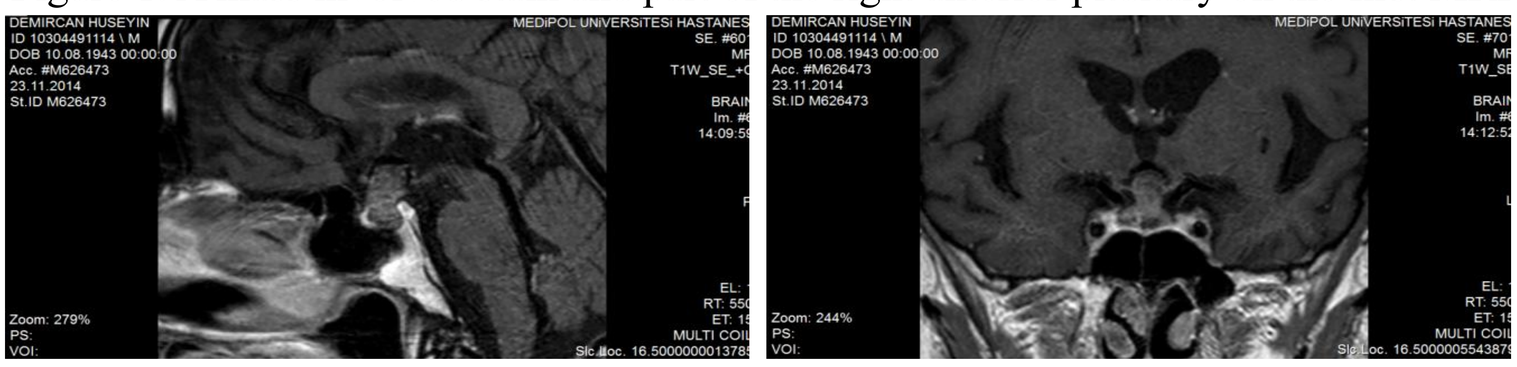

Figure 2. After RT, there is any treatment response on the last pituitary MRI.

Discussion:

In differential diagnosis we considered pituitary adenoma, Langerhans cell histiocytosis, lymphocytic hypophysitis, sarcoidosis and metastasis of lung cancer. Because of his performance and primary disease we could not perform biopsy. When we compared his cranial MRI studies there was progression in size of the lesion and also on T1-weighted MRI, the signal intensity was decreased, suggesting metastasis of current lung cancer. When a patient first presents with pituitary mass and DI, pituitary metastasis should be included in the initial differential diagnosis [3]. Sioutos [4] suggested that possibility of pituitary metastasis is high when a patient with known metastatic cancer develops DI and has radiographic evidence of a pituitary mass. Due to the high incidence in pituitary metastasis, some authors suggest that the manifestations of DI and/or cranial neuropathies point toward pituitary metastasis rather than pituitary adenoma especially when these symptoms develop in a rapid course and in patients older than 50 year old [5]. When symptoms of DI appear in a patient with lung cancer, pituitary metastasis should be considered and evaluated properly. Thus patient can be protected from morbidities of panhypopituitarism and we can maximize the remaining quality of life.

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