

Metastasis of Pituitary : A Case Report And Review of Literature

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Abstract: We report the observation of a patient aged 45, treated for trabeculo vesicle carcinoma of thyroid. A year later, the patient had a local recurrence, cervical lymph node metastases and bone with the finding of a central diabetes insipidus and a dissociated hypopituitarism. Magnetic resonance imaging revealed metastasis of pituitary. The treatment consisted of a pituitary hormone replacement deficits and cervical and pituitary radiotherapy

Keywords: Thyroid cancer; Pituitary metastases; Diabetes insipidus; Pituitary RMI

I. Introduction

Metastasis is a rare cause of tumor of the sellar region. Their frequency varies from 1 to 5% depending on whether one considers symptomatic cases or systematic autopsy series.^{1,2} In the majority of cases (85-90%), they are asymptomatic.³ The two most common primary cancers metastatic to the region are breast cancer and lung cancer with small cell. Other cancers are rarer. In order of frequency we find colon cancer, prostate cancer, renal cell carcinoma and pancreatic cancer.^{4,5} Thyroid origin is extremely rare. We report a case of metastasis from a little differentiated thyroid carcinoma.

II. Observation

A patient aged 45 years was rehospitalized in endocrinology for recurrence of vesicle trabeculo carcinoma diagnosed and operated a year earlier. He has no personal or family history. The diagnosis of thyroid cancer was established before the onset of rapidly progressive nodular goiter associated with ipsilateral latéro-cervical lymphadenopathy. Thyroidectomy with lymph node dissection is performed. Histological study and assessment of tumor scalability was in favor of a trabeculo vesicle thyroid carcinoma stage T4 N1M0 (TNM). The treatment was completed with an isotopic aggregation by 131 and the power suppression therapy with levothyroxine. The evolution was steady until the local recurrence.

The clinical examination at admission found altered patient with cervical thinner and compressive hard mass associated with bilateral latéro-cervical lymphadenopathy. We noted spontaneous bone pain on thoracic spine and the left leg without neurological signs and no palpable masses. The endocrine examination found signs of adrenal insufficiency type of weakness and low blood pressure with polyuria syndrome amounted to 4 liters per day. The radiological assessment (chest X-rays, back and lower limbs, bone scan and thoracoabdominal CT) revealed pulmonary, spinal and multiple bone locations, thyroid mass infiltrating the surrounding muscle and carotid.

The endocrine balance confirmed adrenal insufficiency of central origin and the presence of a central diabetes insipidus (Table I). pituitary magnetic resonance imaging was performed showing a large Heterogeneous tumor lesion with suprasellar extension compressing the optic chiasm. It associated thickening of the pituitary stalk (Fig 1 and 2).

The record field at Goldmann perimeter showed bilateral and asymmetrical reached hemianopic temporal slightly more pronounced in the upper quadrants. Due to the clinical condition very faded and diagnostic of thyroid carcinoma, we did not consider it necessary to obtain a histological evidence of metastasis in the pituitary region. After hormone replacement by glucocorticoids and DDAVP, the patient is referred to cervical and pituitary radiotherapy. Chemotherapy will be discussed later.

III. Discussion

Pituitary metastases are a rare cause of pituitary lesion. asymptomatic In majority of them, they are found at several known systemic carcinoma with metastatic sites.^{6,7} More rarely, they may be indicative of the cancer disease. Diabetes insipidus is the principal mode of revelation of pituitary metastases (70%) due to the frequent posterior pituitary location of the tumor; the invasion of the anterior pituitary being by continuity.

This distinction is explained by differences in blood supply between the anterior and posterior pituitary. The anterior pituitary gland receives its blood supply from a capillary bed after the Rathke pouch that would be a natural filter metastatic hematogenous spread. While the posterieur pituitary has a direct systemic arterial vasculature. 51% of cases of pituitary metastases have only locations in the posterior pituitary, 15% in the anterior pituitary and 33% in both lobes. Anterior

pituitary then being reached by continuity.^{7,1,5,6} The ante-pituitary insufficiency is mainly due to hypothalamic damage and frequently associated with the compression of the pituitary stalk which prevents the passage of hypothalamic hypophysiotropic hormones. Visual problems (decreased visual acuity and visual field) are the first clinical manifestation in 22% of cases.^{6,7,8} When the pituitary lesion was found in a context of neoplasia, the diagnosis of metastasis is discussed systematically.

When the lesion of the hypothalamic-pituitary region is unique, it is more difficult to make the differential diagnosis of pituitary adenoma. The association of diabetes insipidus, a ante-pituitary insufficiency and suggestive imagery are elements that eliminate the diagnosis of benignity. The Magnetic Resonance Imaging (MRI) occupies a special place in the positive diagnosis of pituitary metastasis. It shows invasive mass intra- and suprasellar Iso or hypointense T1 with heterogeneous enhancement, loss of physiological the posterior pituitary hypersignal, thickening of the pituitary stalk:> 2.5- 3mm and potential invasion of adjacent structures: back of the saddle Turkic, third ventricle and infundibulum.^{9,10,11,12} Decompressive emergency of the optic pathways motivate the rapid completion of a surgical tumor resection by transsphenoidally. Pathological examination of the surgical specimen confirms the diagnosis. Preserving visual function is an emergency, even in the case of metastatic general extension. Surgery is usually completed by radiotherapy and chemotherapy in particular in the case of chemosensitive bronchial cancers. In order of 50% we obtain total responses with exclusive cerebral radiotherapy (10 x 3.0 Gy) however short median survival (4.7 months) are reported in the literature. Hormone replacement of secondary pituitary insufficiency improves comfort patient and reduce morbidity.^{13,14,15}

On the other hand, note is the sometimes clinically silent nature of primary cancer to be searched. The realization of chest CT in men (lung cancer) or a mammogram in women (breast cancer) can be a major element of the etiologic diagnosis given the predominance of these neoplasias.

The frequent association with other distant metastases darkens the prognosis of these patients, the duration of survival is about one year. Indeed, a strong correlation between the onset of pituitary metastases and the presence of metastatic bone especially broadcast was recorded

IV. Conclusion

frequency of Pituitary metastases is rare. It is underestimated because in the absence of symptomatology they are not very searched in daily practice. it is important to diagnose them due to the risk of pan-hypopituitarism and chiasma compression.

References

- [1]. Kovacs, K : Metastatic cancer of the pituitary gland. *Oncology* 1973; 27(6): 533-42
- [2]. Nugent, JL, Bunn, PA, Matthews, MJ Idhe, DC, Cohen, MH, Gazdar, A Central nervous system metastases in small cell bronchogenic carcinoma. *Cancer* 1979; 44: 1885-93.
- [3]. Ntyonga-Pono MP, Thomopoulos P, Luton JP. the metastases Hypophysaires. *Presse Med*, 1999;28:1567-71.
- [4]. Teears RJ, Silverman, EM :Clinicopathologic review of 88 cases of carcinoma metastatic to the pituitary gland. *Cancer* 1975; 36: 216-20.
- [5]. Halpert, B, Erickson, EE, Fields, WS Intracranial involvement from carcinoma of the lung. *Arch Pathol* 1960; 69: 93-103.
- [6]. McCormick PC, Kalmon D Post, Kandji AD, Hays AP. Metastatic carcinoma to the pituitary gland. *Br J Neurosurg*, 1989;3:71-80.
- [7]. Eksi Ms, Hasanoy T, Yilmaz B, Akakin A, Bavri Y, Bozkurt SU, Kilic T .Isolated metastasis of breast cancer to the pituitary gland.*Neurol India* ; 2014; 62(1) : 70-1
- [8]. Fujimori T, Okauchi M, Shindo A, Kawanishi M, MivakeK,Kawai N, Tamiva TIntrapituitary adenoma metastasis from lung cancer with progressive cranial nerve palsies: a case report and literature review.No *ShinkeiGeka* 2014 Oct;42(10):943-9.
- [9]. Wiggli U, Benz U, Muller HR. Chiasmatic syndromes diagnostic possibilities with computerized tomography (CT). *KlinMonatsblAugenheilkd*, 1977;170:290-6.
- [10]. Schubiger O, Haller D: Metastases to the pituitary-hypothalamic axis. An MR study of 7 symptomatic patients. *Nuroradiology* 1992, 34:131-134.
- [11]. Mayr NA, Yuh WT, Muhonen MG, Koci TM, Tali ET, Nguyen HD, Bergman RA, JinkinsJR:Pituitary metastases: MR findings. *J Comput Assist Tomogr* 1993, 17:432-437.
- [12]. Chaudhuri R, Twelves C, Cox TC, Bingham JB: MRI in diabetes insipidus due to metastatic breast carcinoma. *ClinRadiol* 1992, 46:184-188.
- [13]. Branch CL Jr, Laws ER Jr: Metastatic tumors of the sellaturcica masquerading as primary pituitary tumors. *J ClinEndocrinolMetab* 1987, 65:469-474.
- [14]. Ithimakin S, Suttinont P, Akewanlop C. Pituitary metastasis from renal cell carcinoma: a case report with literature review.*J Med Assoc Thai* 2013 Feb;96 Suppl 2:S257-61.
- [15]. Orhan B1, Yalçin S, Evrensel T, Yerci O, Manavoglu O..Successful treatment of cranial metastases of extrapulmonary small cell carcinoma with chemotherapy alone. *Med Oncol* 1998; 15(1): 66-9.
- [16]. Postmus PE1, Haaxma-Reiche H, Gregor A, Groen HJ, Lewinski T, et al. Brain- only metastases of small cell lung cancer ; efficacy of whole brain radiotherapy. An EORTC phase II study. *RadiotherOncol* 1998; 46: 29-32.

Figures

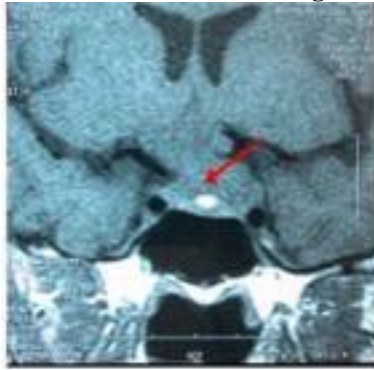


Fig1: Coronal section in MRI : Pituitary metastasis



Fig2: Saggitale section in RMN : Pituitary Metastasis