

UNEXPECTED SOLITARY BRAIN METASTASIS OF ENDOMETRIAL CARCINOMA IN A PRIMARY INFERTILE WOMAN: REPORT OF A CASE AND REVIEW OF THE LITERATURE

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SUMMARY

We present a 32-year-old patient with solitary brain metastasis of endometrial carcinoma. The single frontal lobe metastasis was determined seven months after surgical staging of endometrial adenocarcinoma. The initial diagnosis was determined by hysteroscopic resection of an endometrial polyp. The lesion was only limited to the endometrial polyp and there was no evidence of disease at the pathological examination of uterus and lymph nodes.

Key words: brain metastasis, endometrial carcinoma

ÖZET

Primer İnfertil Hastada Endometrial Adenokarsinomun Beklemeyen Beyin Metastazi: Olgu Sunumu ve Literatür Derlemesi

Bu çalışmada 32 yaşındaki kadın olguda endometrial adenokarsinomdan kaynaklanan beyin metastazı sunulmuştur. Tek frontal lob metastazı endometriyum adenokarsinomunun cerrahi evrelemesinden 7 ay sonra ortaya çıkmıştır. İlk tanı endometrial polipin histeroskopik rezeksiyonu ile konmuştur. İlk lezyon endometrial polibe sınırlıydı ve uterus ve lenf bezlerinin incelenmesinde hastalığa ait bulgu izlenmemiştir.

Anahtar kelimeler: beyin metastazı, endometrial karsinom

INTRODUCTION

Choriocarcinoma is the most common gynecologic malignancy that metastasizes to the central nervous system (CNS)⁽¹⁾. Endometrial carcinoma is the most common gynecologic malignancy but CNS metastasis is a rare phenomenon. CNS metastases develop in 0.3-0.6 % of the patients with endometrial carcinoma^(2,3). In literature, there are small series of cases about the

patients with brain metastasis from endometrial carcinoma. Generally, brain metastasis from endometrial carcinoma is associated with disseminated disease. Sometimes, similar to the patient that we present, the brain metastasis from endometrial carcinoma may develop without the presence of disseminated disease. The aim of this study is to present the characteristics of the patient with brain metastasis from endometrial carcinoma without disseminated disease in a young woman.

CASE

A 32-year-old primary infertile woman was admitted to our institution with the symptom of menorrhagia. In her history, she had hypertension of three years duration. Her mother and two aunts had a history of endometrial carcinoma. Laboratory tests were within normal limits. At bimanual digital pelvic examination the uterus was six weeks' gestational size and the adnexa was non-palpable.

Endometrial sampling was performed by hysteroscopic endometrial sampling. Hysteroscopy showed a polypoid lesion which was extirpated. The histopathology revealed indifferently differentiated adenocarcinoma limited to the top of the polyp without invasion to the myometrium. Immunohistochemically estrogen and progesterone receptors were negative at the primary tumor. Then, the patient underwent a surgical staging procedure including abdominal total hysterectomy with unilateral salpingo-oophorectomy and pelvic-paraaortic lymph node samples. In the histopathological examination of the uterus focal endometrial hyperplasia with complex atypia was found and no remaining tumor tissue was identified. The peritoneal washings were negative as well. Then, the patient was registered for the regular follow-up.

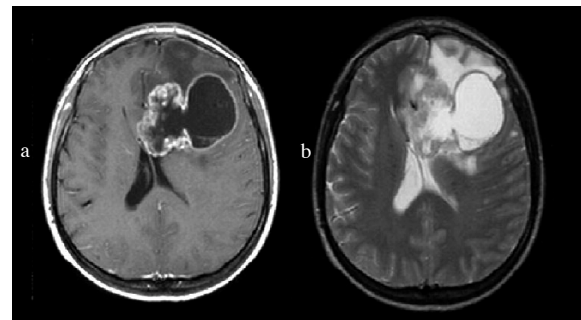
Seven months after the first diagnosis of indifferently differentiated carcinoma, she presented with change in mental status. Magnetic resonance imaging revealed a mass in the left frontal lobe of the brain 6 x 4 cm in diameter; hypointense on T-1W images, hyperintense on T-2W images and surrounded by digital edema. Primary tumor and the whole body scans were negative. The mass was removed totally by craniotomy. Histopathological examination of the lesion revealed metastasis of indifferently differentiated carcinoma. Thereupon, she received chemotherapy with cisplatin and etoposide and adjuvant pelvic radiotherapy to the cranium after the surgery. After 10 months of surgical treatment for brain metastases from endometrial carcinoma, she is well and alive. We did not find any evidence of recurrence in her follow-up.

DISCUSSION

Lung cancer, breast cancer and melanoma are the most often malignancies that metastasizes to the CNS⁽⁴⁾.

Endometrial carcinoma is the most common gynecologic malignancy but CNS metastasis is rare. Endometrial carcinoma most often spreads to lymphatic channels and makes local invasion to the surrounding tissue. Although, some hypothesis try to explain what determines the site of preference of distant metastases, the most accepted hypothesis suggest presence of specific tumor cell receptor and endothelium receptors on the target organs^(5,6).

The most common metastase areas of endometrial carcinoma are lung, liver and bone. Generally, distant metastases from endometrial carcinoma are associated with disseminated disease⁽⁷⁻⁹⁾. Sometimes, the brain metastasis from endometrial carcinoma may develop without disseminated diseases. For this patient that we present, there is not any disseminated disease. Moreover, before determining primary focus, the patient may present with brain lesion.



Resim 1: Magnetic resonance showed 6 x 4 cm in size and mixed density metastatic lesion, the invasion the corpus callosum, keeping to contrast in the membrane on T1W images (A) and hypointense on T2W images (B).

Andrea et al⁽¹⁰⁾ determined that tumor's liver/other organ (exception to lung) metastases were associated with non-endometrioid histology, young age and poor differentiation. This patient that we present is young (32 year-old) and she has a poor differentiation. The period between the diagnosis of brain metastasis and primary tumor was different. This period was determined by Gien⁽¹¹⁾ et al., followed up eight patients, as a mean 8,5 months; Mahmoud-Ahmed⁽¹²⁾ et al., followed up ten patients, as a mean 8 months; Sewak⁽¹³⁾ et al., followed up a patient; as a 48 months and Martinez-Manas⁽⁷⁾ followed up a patient, as a 18 months. In this patient that we present, brain metastasis developed after 7 months from first primary tumor. Delattre⁽¹⁵⁾ reported that pelvic malignancy most oftenly metastases to posterior fossa of cranium.

Mahmoud et al⁽¹²⁾ reported the patients with brain metastasis from endometrial carcinoma. The lesions were located in the cerebral hemisphere at eight patients, both in cerebral and cerebellar hemispheres at one patient and in the cerebellum at only one patient. For both this patient that we present and the reported patients in the literature, metastatic lesions were located in supratentorial region.

Because of this, the series of patients with brain metastasis from endometrial carcinoma are too small, there is not any consensus about the follow up and treatment options. Brain metastasis from endometrial carcinoma may be solitary or multiple. Generally, for solitary brain metastasis, there is longer survival period than multiple metastases.

Most of the studies emphasized that the patients with a solitary brain metastasis from endometrial carcinoma who were treated with surgery and radiation therapy lived longer than those who were treated with radiation therapy alone^(9,15,16). The symptomatic patients with multiple metastases were treated with radiation therapy alone. In our patient, we treated with radiation and chemotherapy after removing the solitary lesion surgically.

Brain metastasis from endometrial carcinoma shows poor prognosis. It can be explained with disseminated disease associated with brain metastases. The mean survival after diagnosis of brain metastasis from endometrial carcinoma was determined by Gien⁽¹¹⁾ et al. as 3,5 months, Sewak⁽¹³⁾ et al. as 6 months, Mahmoud-Ahmed⁽¹²⁾ et al. as 3,2 month and Martinez-Manas⁽⁷⁾ as 8 months. In our patient, we did not find any recurrence in the period of 10 months after diagnosis of brain metastasis from endometrial carcinoma. Finally, patients with brain metastasis from endometrial carcinoma show tendency to poor prognosis. Compared to the patients with multiple lesions, the patient with solitary lesion has good prognosis. If the patient has a single brain metastasis from endometrial carcinoma, radiation therapy must be added to the surgery.

REFERANCES

- Graf AH, Buchberger W, Langmayr H. Site preference of metastatic tumors of the brain. *Virchow's Arch A: Pathol Anat* 1988;412: 493-498.
- Aalders JC, Abeler V, Kolstand P. Recurrent adenocarcinoma of the endometrium: a clinical and histopathological study of 379 patients. *Gynecol Oncol* 1984;17:85-103.
- Cornio G, Lissoni A, Losa G, Zanetta G, Pellegrino A, Mangioni C. Brain metastases from endometrial carcinoma. *Gynecol Oncol* 1996;61:40-43.
- Cappuzzo F, Mazzoni F, Matri A, Di Stefano A, Calandri C, Crino L. Medical treatment of brain metastases from solid tumors. *Forum(Genova)* 2000;10:137-148.
- Nicolson GL, Winkelhake JL. Organ specificity of blood-borne tumor metastasis determined by cell adhesion. *Nature* 1975; 255:30-232.
- Gilbert HA, Kagan AR. Metastases: Incidence, Detection, and Evaluation without Histologic Confirmation. *Fundamental Aspects of Metastases*. L. Weiss (ed): North Holland, Amsterdam-Oxford, 1976:385-405.
- Martinez-Manas RM, Brell M, Rumia J, Ferrer E. Brain Metastases in Endometrial Carcinoma *Gynecol Oncol* 1998;70:282-284.
- Ogawa K, Toita T, Kakkinomana Y, Kamata M, Moromizato H, Nagai Y, Higashi M, Kanazawa K, Yoshii Y. Palliative radiation therapy for brain metastases from endometrial carcinoma. *Jpn J Clin Oncol* 1999;29:498-503.
- Cornio G, Lissoni A, Lossa G, Zanetta G, Pellegrino A, Mangioni C. Brain metastases from endometrial carcinoma. *Gynecol Oncol* 1991;41:40-43.
- Mariani A, Webb MJ, Keeney GL, Calori G, Podratz KC. Hematogenous Dissemination in Corpus Cancer . *Gynecol Oncol* 2001;80:233-238.
- Gien LT, Kwon JS, D'Souza DP, Radwan JS, Hammond A, Sugimoto AK, Carey MS. Brain metastases from endometrial carcinoma: a retrospective study. *Gynecol Oncol* 2004;93:524-528.
- Mahmoud-Ahmed AS, Suh JH, Bamett GH, Webster KD, Belinson JL, Kennedy AW. The effect of radiation therapy on brain metastases from endometrial carcinoma: a retrospective study. *Gynecol Oncol* 2001;83:305-309.
- Sewak S, Muggia FM, Zagzag D. Endometrial carcinoma with cerebellar metastasis: a case report and review of the literature. *J Neuro-Oncol* 2002;58:137-40.
- Delattre JY, Krol G, Thaler HT, et al.: Distribution of brain metastases. *Arch Neurol* 1988;45:741-744.
- Kottke-Marchant K, Estes ML, Nunez C. Early brain metastases in endometrial carcinoma. *Gynecol Oncol* 1992;41:67-73.
- Sawada M, Inaggaki M, Ozaki M, Yamasaki M, Nakagawa H, Inoue T, Terada N, Wada A. Long-term survival after brain metastases from endometrial carcinoma. *Jpn J Clin Oncol* 1990;20:312-315.