First Case of Isolated Cystic Brain Metastasis from Endometrial Adenocarcinoma Treated by Surgery

Primeiro Caso de Metástase Cerebral Cística de Adenocarcinoma Endometrial Tratado por Cirurgia

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ABSTRACT

Introduction: Lung cancer, breast cancer, renal cell cancer, gastrointestinal carcinoma, and melanoma are common sources of cerebral metastasis. Brain metastasis from malignant gynecological tumors are considered rare. According to the literature, fewer than 3% of all brain metastases originate from gynecological lesions. The primary mechanism of metastatic spread from genital tract cancers to the brain is through the hematogenous route. The endometrial carcinoma metastasis to the brain is a very rare event. The objective of this study is to describe this rare event and conduct a brief review of the literature.

Case description: We report on a unique case of a cystic endometrial adenocarcinoma metastasis treated by neurosurgical procedure. The patient underwent “en bloc” tumor resection guided by neuronavigation and there were no complications during surgery. After discharge, she underwent whole brain radiation therapy, currently makes quarterly outpatient follow-up and showed no signals of tumor recurrence.

Conclusion: In this article we present a case of cystic brain metastasis from an endometrial adenocarcinoma that was successfully treated by neurosurgery tumoral resection. To our knowledge, this condition has not been reported previously in the literature.

Key words: Brain Neoplasms; Endometrial Carcinoma; Neurosurgery; Oncology

RESUMO


Palavras-chave: Neoplasias Encefálicas; Neoplasias do Endométrio; Neurocirurgia; Oncologia

INTRODUCTION

The incidence of brain metastases from ovarian carcinoma is higher than those from endometrial carcinoma, uterine cervix carcinoma, and other female genital tract malignancies combined (vagina, vulva, and fallopian tube carcinoma)¹. Standard treatments for brain metastasis have not been well established in literature, however some general guidelines are available: radiosurgery, radiation therapy, surgery and chemotherapy have proved to be effective²-⁴. The objective of this article is to describe the unique case of a cystic endometrial adenocarcinoma metastasis treated by neurosurgical procedure and conduct a brief review of the literature.
Discussion

The incidence of brain metastasis of endometrial adenocarcinoma is extremely low (0.3-0.9%). The primary mechanism of metastatic spread from genital tract cancers to the brain is by the hematogenous route. It has been speculated that tumor cells from the genital tract may also go to the brain via the Batson plexus (paravertebral venous plexus)\textsuperscript{1,5-7}.

The prognosis of brain metastasis from gynecological cancers is poor, with an average survival rate around eighth month\textsuperscript{8}. There is no single definitive treatment regimen for these metastases. The number of brain metastases and the presence of widely disseminated disease are important factors to determine treatment options. Surgical resection followed by adjuvant therapy (radiotherapy and chemotherapy) is considered to be the best option for patients with solid solitary and/or resectable brain metastasis in the absence of other metastatic sites\textsuperscript{9}.

Cystic brain metastases are rare and may occur due to necrosis of a solid lesion secondary of insufficient blood supply or, less often, due to cyst formation by the tumor itself. In the present case, the patient had a solitary lesion in the brain without evidence of metastases in other organs, featuring a direct hematogenous spread. The patient has another peculiarity, confirmed by histopathological report that is the presence of cystic endometrial adenocarcinoma metastasis, an exceptionally rare fact.

In this article we present a case of brain metastasis from cystic

Case Presentation

A female patient, 51 years-old, was diagnosed with endometrial adenocarcinoma in 2012. She was submitted in February 2012 to oophorectomy, salpingectomy, omentectomy and resection of paraaortic and pelvic lymph nodes. In November 2013 the patient presented neurological symptoms, with sensitivity alteration in the left body and incomplete disproportionate left hemiparesis grade II/V in upper limb and grade III/V in lower limb. Brain magnetic resonance was performed for diagnostic investigation, evidencing cystic lesion on right frontal lobe, suggestive of brain metastasis (Figure 1A).

Figure 1 A. Axial (Flair enhanced) head magnetic resonance image showing cystic lesion on right superior frontal gyrus and pre-central gyrus, with clear-cut edges (arrow). B. Axial head computed tomography showing adequate control on the first postoperative day.

Neurosurgical brain metastasis resection was performed. There were no complications during surgery and was made an “en bloc” tumor resection guided by neuronavigation, as shown in the postoperative cranial tomography (Figure 1B). Histopathological report confirmed the presence of endometrial adenocarcinoma cells (Figure 2). After discharge, she underwent whole brain radiation therapy (WBRT). She currently makes quarterly outpatient follow-up and showed no signals of tumor recurrence.

Figure 2. Histopathological findings on microscopy, 40X magnification, hematoxylin and eosin. Presence of cells with endometrioid glandular pattern and intense nuclear atypia, suggestive of endometrial adenocarcinoma.
endometrial adenocarcinoma metastasis that was successfully treated by neurosurgery tumoral resection, a condition that has not been reported previously in the literature. Although the prognosis of brain metastasis is poor, with appropriate treatment, the survival rate increases. There is no consensus regarding the most appropriate treatment of metastatic brain cystic lesions, however, it is believed that the therapeutic response to radiotherapy alone is inferior to solid lesions, thus possibly the initial surgical approach is most appropriate.

REFERENCES


