



## BRAIN METASTASIS OF CERVICAL CARCINOMA ABOUT A CASE AND LITERATURE REVIEW

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### ABSTRACT

Brain metastases of cervical cancer are extremely rare. They are usually seen late in the clinical course and have poor prognosis. We report a case of a 45-year-old woman diagnosed with squamous cell carcinoma of the cervix and who developed supratentorial brain metastases after two years of treatment of the primary disease. The patient underwent surgical excision of the cerebral metastasis completed whole brain radiotherapy and palliative chemotherapy, with a good clinical and radiological evolution. **Resume:** Les métastases cérébrales du cancer du col utérin sont extrêmement rares. Leur pronostic reste sombre malgré toutes les options thérapeutiques. Nous rapportons l'observation clinique d'une jeune patiente de 47 ans, suivie pour un carcinome épidermoïde du col utérin, qui présente 2 ans plus tard des métastases cérébrales supratentorielles. Notre patiente a bénéficié d'une résection chirurgicale complétée par une radiothérapie encéphalique totale et une chimiothérapie palliative, avec une bonne évolution clinique et radiologique.

**KEYWORDS:** Brain metastasis-Uterine cervical cancer- Treatment – Prognosis.

### INTRODUCTION

Cervical cancer is characterized by locoregional extension, extra-pelvic metastases are rare, particularly at the brain level. The frequency of brain metastases of cervical carcinoma does not exceed 0.5 to 1.2%.

We report the observation of a young patient treated for cerebral metastasis of squamous cell carcinoma of the cervix while emphasizing the different epidemiological, clinical, radiological, therapeutic and evolutionary aspects of this unusual metastatic localization of cervical carcinoma.

**Mots clés:** Métastase cérébrale- Cancer du col utérin - Traitement- Pronostic.

### OBSERVATION

This is a 47-year-old patient with no specific pathological antecedents, treated in 2016 for stage IIb cervical squamous cell carcinoma, the patient was treated by concomitant chemo-radiotherapy and uterovaginal brachytherapy. In February 2018, the patient consulted for headaches with visual disturbances and dizziness, without sensitivomotor deficit.

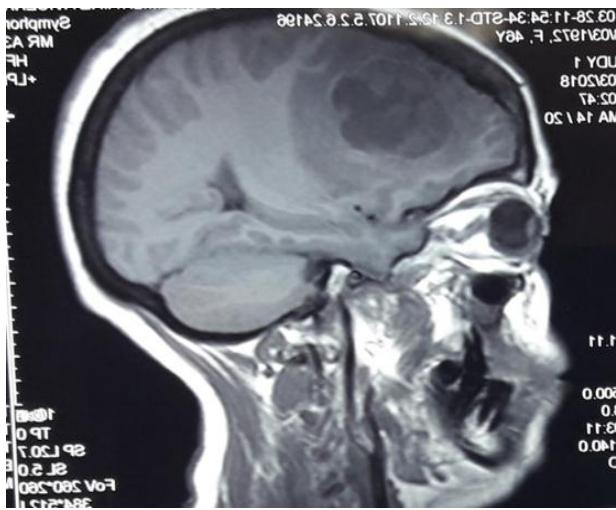
Cerebral MRI revealed a 5 cm left frontal tumor process, with a fleshy and cystic double tissue component, surrounded by vasogenic edema with a commitment

under falx, associated with another small temporal nodular lesion process without any repercussions on the neighboring and medial structures suggesting secondary locations.

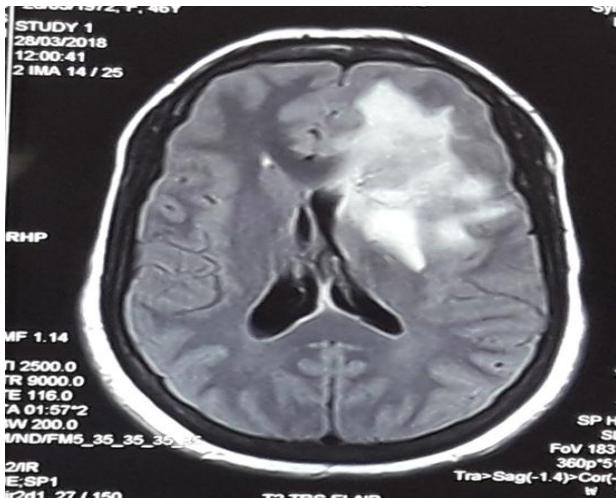
Thoraco pelvic abdominal CT scan requested looking for other secondary locations were without abnormalities.

The patient had a surgical excision of the left frontal process.

The anatomopathological study revealed a brain localization of a squamous carcinoma that is poorly differentiated and non-keratinizing, compatible with cervical metastases.



The patient received total brain radiotherapy at a dose of 30 Gy (10 fractions of 3Gy) and undergoing palliative chemotherapy: Cisplatin 50mg / m<sup>2</sup>, paclitaxel 175 mg / m<sup>2</sup> and avastin 15mg / kg, with good clinical and radiological evolution.



Cerebral MRI (axial and sagittal section) showing a left frontal tumor process, surrounded by vasogenic edema with commitment under falx, associated with another small temporal nodular lesion process without any repercussions on neighboring structures.

## DISCUSSION

Brain metastases of cervical carcinomas are extremely rare, as indicated by the small number of cases reported in the literature.<sup>[1]</sup> Their frequency does not exceed 0.5 to 1.2% in the various series reported.<sup>[2]</sup> The first case described in the literature is that of Henriksen,<sup>[3]</sup> reported in 1949.

The metastatic dissemination pathway is haematogenous, mainly via the vertebral venous system.<sup>[4,5]</sup> This dissemination depends on the patient's immune response, cerebral neovascularization, the number of vascular emboli and the characteristics of the tumor.<sup>[2]</sup> Brain metastases usually occur in the sixth decade.<sup>[6,7]</sup> These metastases are usually made from poorly differentiated

cervical carcinomas.<sup>[3]</sup> This is the case of our patient. On the other hand, our patient was a much younger she was 47 years old. The interval between the initial diagnosis of cervical cancer and the occurrence of brain metastases varies considerably, from 8 weeks to 8 years.<sup>[8]</sup> The diagnosis of cerebral metastasis in our case was made 24 months after the diagnosis of primary cancer.

The topographic diagnosis is essentially based on magnetic resonance imaging. Most brain metastases are supratentorial localization, which may be related to vascularization and spatial features of this region.<sup>[2,7]</sup> They are usually unique and frequently sit at the frontal lobe.<sup>[1,9]</sup>

However, multiple and subtemporal localizations have also been reported.<sup>[10]</sup>

The symptoms are not specific, depend on the location of the brain process.<sup>[5]</sup> Headache and hemiparesis are the most commonly reported symptoms.<sup>[2]</sup> Nausea, vomiting, gait disturbances may also exist and should alert the clinician.<sup>[2]</sup>

Brain metastases from cervical cancer usually occur in the context of polymetastatic neoplasia, especially in the lungs, liver and bone.<sup>[2]</sup> However, isolated cerebral metastatic disease has already been described.<sup>[11]</sup> This is the case of our patient.

There is no standard treatment for brain metastases of cervical cancer. The treatment depends on the location, the number of metastases, the presence of other secondary locations and the clinical status of the patient. Surgery has become an effective local treatment for these metastases.<sup>[12]</sup> It is indicated in case of single lesion with the absence of other distant metastases.<sup>[7,13]</sup> Surgical resection associated with radiotherapy results in better survival compared to radiotherapy alone. Radiosurgery and hypofractionated stereotactic radiotherapy are currently recognized treatments for small and inaccessible brain metastases.<sup>[14]</sup> As for palliative total encephalic radiotherapy is recommended in case of multiple or inoperable lesions.<sup>[12]</sup>

Chemotherapy including cisplatin may be recommended as the first treatment for multiple brain metastases that are recurrent or associated with extra-cranial metastases.<sup>[2,12]</sup>

The prognosis for cervical metastases of cervical cancer is generally poor despite all treatment options with a median survival that does not exceed a few months.<sup>[1,6,15]</sup>

The prognosis depends on the patient's age, neurological status, clinical history, number of lesions, other extra-cranial metastases and co-morbidities.<sup>[15]</sup>

## CONCLUSION

The occurrence of a brain metastasis of cervical cancer is extremely rare, possible even after several years of remission. His prognosis remains poor. It requires a multimodal therapeutic approach, uses the skills of a multidisciplinary team and is based on surgery, radiotherapy and / or chemotherapy.

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