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Cervical Carcinoma Metastasizing to the Orbit: A Case Report

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Abstract--- *Metastasis to the orbit is a rare and unusual complication of cervical cancer. The most common organs for cervical cancer metastasis are the lungs and the liver. Only a handful of reports exist in the literature about cervical adenocarcinoma metastasizing to structures of the eyes. We report a case of a 52 year old woman with a history of cervical adenosquamous carcinoma presenting with symptoms of headache and eye pain, which eventually revealed metastasis to the orbit with lympho-vascular involvement. While rare, development of ocular symptoms in patients suffering from cervical malignancies should alert physicians of possible ocular tumor invasion, a condition which is generally perceived to harbor a poor prognosis.*

Keywords--- *Cervical Cancer, Adenosquamous Carcinoma, Orbit, Ocular Metastasis, Ocular Pain.*

I. INTRODUCTION

Cervical cancer is the fourth most common malignancy in women worldwide and was responsible for 311,000 deaths in 2018 (1). The most common forms of disease progression are through local invasion and distant metastasis via the lymphatic system, with the most typical sites of metastasis being pelvic or para-aortic lymph nodes, lungs, liver, and peritoneum (2). Reports of cervical carcinoma metastasis to the eyes are sparse, which might result in overlooking the diagnosis and misinterpreting the disease course. In this context, we report a case of cervical carcinoma cervix metastasizing to the orbit and its associated structures.

II. CASE REPORT

A 52-year-old woman (Gravida = 4; Para = 4; Live birth = 3) with a known history of cervical cancer managed with chemoradiotherapy was referred to the outpatient clinic with complaints of headache and right eye pain. The initial diagnosis for cervical malignancy was made nine months earlier. In October 2018, the patient presented with episodes of post-menopausal bleeding. Her medical history was remarkable due to a diagnosis of paroxysmal nocturnal hemoglobinuria (PNH) back in 2002, thrombotic stroke with cerebellar infarction in 2006, and splenectomy in 2007. She had suffered episodes of thromboembolism and had moderate to severe anemia, which had led to regular requirements of packed red blood cell infusion. She reached menopause four years prior at the age of 48. Her drug history consisted of aspirin 81 mg daily, warfarin 7.5 mg daily, enoxaparin 60 mg twice a day, plus Calcium, Zinc, and vitamin D supplementation. Given the vaginal bleeding, transvaginal ultrasound was performed, which demonstrated an endometrial thickness (ET) of 13 mm along with a cyst (25 mm in diameter) in the left ovary. Abdominopelvic ultrasound showed an echogenic focus in the portal vein suggestive of thrombosis. Two

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weeks later, repeat transvaginal ultrasound revealed an ET of 7 mm, a 34 mm cyst in the left ovary, and mild fluid accumulation in the posterior choledosac and endometrial cavity. On 10 November 2018, she was admitted with extensive vaginal bleeding and exertional dyspnea. Peripheral blood smear showed hypochromic microcytic anemia, and magnetic resonance imaging was suspicious for a malignant lesion in the cervix. Cervical biopsy revealed moderately differentiated adenosquamous carcinoma, and she was diagnosed with stage IB1 disease.

Due to her hematologic history, the patient was not considered an appropriate candidate for surgery and was discharged with a plan of chemoradiotherapy. She was readmitted twice in the following month with complaints of occipital headache and vaginal bleeding. Nonetheless, normal brain computed tomography (CT) and cessation of bleeding prompted the gynecologic-oncology team to proceed with the treatment. She underwent five sessions of brachytherapy along with 25 sessions of external radiotherapy, and received her last chemoradiation in March 2019, with a satisfactory response to treatment.

In July 2019, the patient complained of headache, right eye pain, and abdominal pain at the time. Physical exam showed proptosis of the right eye, along with abdominal distension and inguinal lymphadenopathy. Spiral CT scan revealed a lytic lesion (30×25 mm) in the right orbit, with involvement of lateral rectus muscle, lacrimal gland, and possible involvement of the right frontal lobe. Excisional biopsy of the lesion was reported as solid type adenoid cystic carcinoma (ACC). The patient did not consent to explorative craniotomy. Palliative care was advised, while right eye enucleation and orbital debulking were considered appropriate next steps of management. Following enucleation on December 2019, on macroscopic examination of the right globe, an ovoid mass (3×2×1.5 cm) invading the soft tissue on the postero-lateral aspect near the lateral canthus was noted. Histopathology revealed high-grade mixed-pattern ACC with 90% solid components. Lympho-vascular invasion and involvement of the postero-superior aspect were identified. The ocular structures, optic nerve, and adjacent skin were tumor free. As of May 2020, the patient is alive and symptom-free, and continues her follow-up visits.

III. DISCUSSION

Metastasis to the orbit most commonly originates from breasts, prostate, lungs, and gastrointestinal tract (3). Cervical cancer metastasizing to the eye is a very rare condition for which case reports are sparse in the literature. Among the few available cases, the most common site of eye metastasis from cervical cancer has been the orbit (4). Interestingly, this is in contrast with other eye metastases, which occur more commonly in the choroid and the uvea—structures with high blood flow and a suitable environment for malignant cells (4,5). Moreover, ocular involvement in cervical cancer is considered a late manifestation and has almost always been associated with concurrent metastasis at other sites (6).

The histological diagnosis of the reported cases of cervical carcinoma metastasis to the eye are mainly squamous cell carcinoma and adenocarcinoma (4,6). To the best of our knowledge, this is the first report of ACC metastasizing to the orbit. ACC of the cervix is rare and aggressive, and generally results in a very poor prognosis. The initial histopathologic findings in ACC could indicate squamous cell carcinoma and squamous intra-epithelial lesions (7). The mean time interval from the initial diagnosis of cervical cancer to the detection of ocular metastasis

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has been reported around 12 months but is highly variable between the reported cases (8). In this case, the eye symptoms presented roughly nine months after the initial diagnosis of cervical carcinoma, which might delineate the more aggressive nature of ACC. The majority of ocular metastases present with eye pain, disturbed vision, proptosis, and diplopia, while some can even be asymptomatic (6,8). In our patient, there was a possibility of extension to the right frontal lobe, which could cause myriad neurological symptoms, theoretically.

Another interesting aspect of this case is the incidence of malignancy in the setting of PNH. Recent evidence suggests there might be an association between PNH and hematologic and non-hematologic malignancies, given the fairly high incidence of cancer among these patients (9). Hypothetically, malignancy can be attributed to a genetic predisposition, or iatrogenic effects of immunosuppression. It is unclear if these malignancies can present with distinct clinical phenotypes.

IV. CONCLUSION

Metastasis to the orbit is an extremely rare manifestation of cervical carcinoma. Nonetheless, development of ocular signs and symptoms in the setting of previous cervical cancer should alert clinicians to conduct immediate ophthalmologic work-up. Although eye metastasis indicates a poor prognosis, timely diagnosis and palliative care could be valuable in terms of patient comfort and quality of life.

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