MATHEWS

Case Report

Mathews Journal of Case Reports

A Case Report of Cervical Cancer with Primary Skull Metastasis

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ABSTRACT

Background: Cervical cancer is a prevalent and deadly cancer affecting women globally, responsible for over 311,000 deaths in 2018 alone. Cutaneous metastasis from cervical cancer is uncommon and generally signals a late-stage occurrence. Scalp metastasis, in particular, is exceedingly rare, with only a limited number of documented cases. Case summary: A 65-year-old woman with a 10-year history of hypertension, managed with unspecified oral medication, presented with a week-long history of scalp bleeding, which worsened significantly in the 24 hours prior to admission. The bleeding, described as profuse and bright red, originated from the frontoparietal region of the scalp and soaked the patient's dressing. This was accompanied by a severe, global headache. One month prior to this presentation, she noticed scalp swelling of same area, for which she did not seek medical attention. **Conclusion:** Cervical carcinoma with scalp metastases, though uncommon, can be the sole indicator of advanced disease. Due to the lack of standardized treatment guidelines for skin metastases, a comprehensive radiologic and pathologic evaluation is crucial

Keywords: Cervical Cancer, Cervical Cancer Metastasis, Skull Metastasis.

INTRODUCTION

Cervical cancer is a prevalent and deadly cancer affecting women globally, responsible for over 311,000 deaths in 2018 alone [1]. In Ethiopia, cervical cancer poses a critical health challenge, ranking among the leading causes of cancer mortality for women. This is compounded by the limited implementation of crucial preventive measures, such as vaccination and screening, which are more widely available in other parts of the world [2]. Cervical cancer incidence, death, and prevalence were 17.3%, 16.5%, and 18.2% in Ethiopia, respectively [3].

It usually spreads to nearby tissues and organs, most frequently metastasizes to the lungs, bones, and liver. Less common sites of distant spread include the bowel, adrenal glands, spleen, and brain, meaning most women are diagnosed with cancer that has already spread beyond the cervix [3]. In female patients with skin metastasis, the abdominal wall, vulva, and anterior chest wall were the three most frequently affected regions [4]. However, in rare cases, the cancer can spread to distant parts of the body, such as the skull. This is especially uncommon in the early stages of cervical cancer [5].

Vol No: 10, Issue: 02

Received Date: February 22, 2025

Published Date: March 11, 2025

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Citation: Getahun Z, et al. (2025). A Case Report of Cervical Cancer with Primary Skull Metastasis. Mathews J Case Rep. 10(2):201.

This report describes the case of a woman with early-stage cervical cancer that had unexpectedly spread to her skull. The rapid growth of this skull metastasis led to the destruction of the bony cap surrounding the brain. This case is noteworthy because isolated skull metastases in early-stage cervical cancer are exceedingly rare.

CASE SUMMARY

A 65-year-old woman with a 10-year history of hypertension, managed with unspecified oral medication, presented with a week-long history of scalp bleeding, which worsened significantly in the 24 hours prior to admission. The bleeding, described as profuse and bright red, originated from the frontoparietal region of the scalp and soaked the patient's dressing. This was accompanied by a severe, global headache. One month prior to this presentation, she noticed scalp swelling of same area, for which she did not seek medical attention.

On examination, a 2x2 cm scalp defect was noted in the frontoparietal region, exhibiting profuse, pulsatile, bright red bleeding. The defect was deep enough to admit a finger, and underlying soft tissue could be palpated. She had pale conjunctivae with non-icteric sclera. The abdomen was soft, moved with respiration, and showed no organomegaly, tenderness, or masses. Pelvic examination a 5-centimeter cervical mass that had spread to the upper third of the vagina. Based on these findings, the patient was diagnosed with stage IV cervical cancer.

Laboratory investigations revealed pancytopenia (hemoglobin 8.5 g/dL, hematocrit 28.1%, mean corpuscular volume 77.2 fL, white blood cell count 3.28 x 10^9/L with 85.1% neutrophils, platelet count 53 x 10^9/L), elevated erythrocyte sedimentation rate (11 mm/hr) and C-reactive protein (117.9 mg/L). Prothrombin time 30.9 seconds, partial thromboplastin time (97.7 seconds), INR 3.0. Malaria antigen, hepatitis B surface antigen, and anti-hepatitis C virus were negative. Liver function tests: alkaline phosphatase (145 IU/L), bilirubin levels (direct bilirubin 0.4 mg/dL, total bilirubin 0.8 mg/dL). Renal function: urea 208 mg/dL, creatinine 5.46 mg/dL. Lactate dehydrogenase 282 IU/L. Electrolyte: hyponatremia (112 mmol/L), hyperkalemia (6.89 mmol/L), hypocalcemia (7.3 mg/dL), and hyperphosphatemia (6.90 mg/dL). Albumin was low (1.4 g/dL). Thyroid-stimulating hormone (4.48 mIU/L), and highly sensitive troponin 0.011 ng/mL.

Imaging studies showed: Brain CT scan: right temporo-occipital cortical/white matter hypodensity with dilatation of the temporal horn of the lateral ventricle, sub-acute and old infaction. Left parietal bone calvaria defect with intact dura. Chest x-ray: pneumonia with a minimal right-sided pleural effusion, and a small right kidney on abdominal ultrasound.

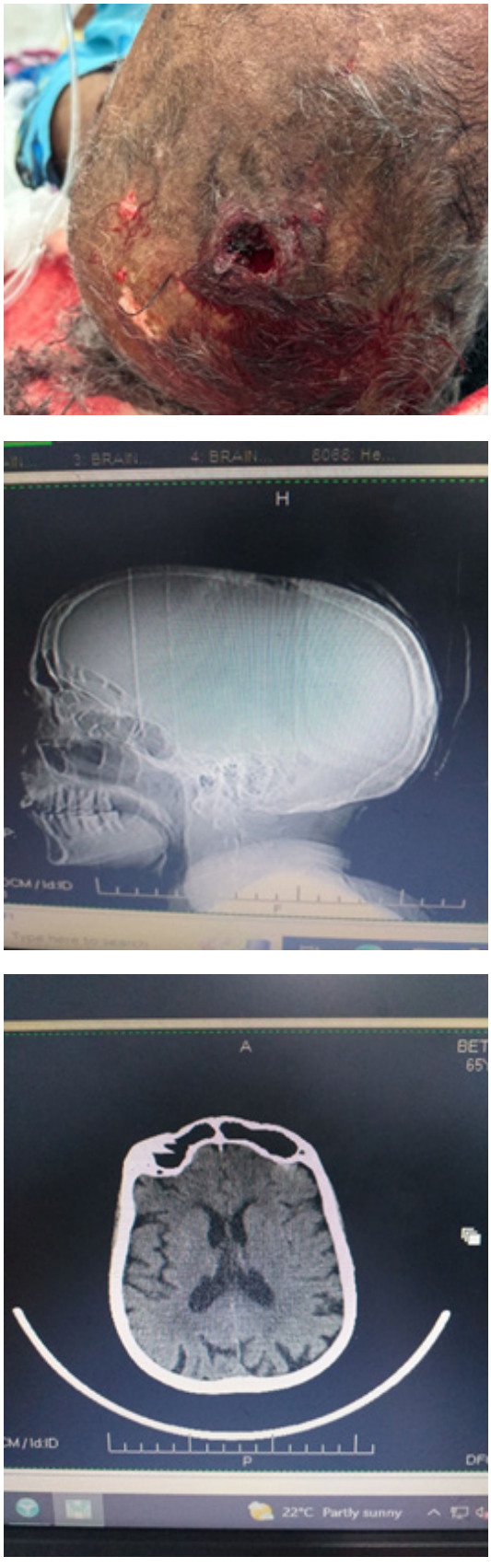

Figure 1. Cutaneous lesion on skull with size of approximately 4*4cm and a brain CT scan image in sagittal and coronal section showing osteolytic lesion of the parietal bone without edema.

DISCUSSION

Cervical cancer typically spreads by direct extension to nearby tissues, including the paracervical, vaginal, and parametrial areas, and in later stages, to the bladder and rectum. It can also spread through the lymphatic system, initially involving pelvic lymph nodes and subsequently the common and para-aortic iliac nodes [5]. While less common, hematogenous spread (through the bloodstream) can occur, usually in advanced stages, with metastases often appearing in the lungs, liver, bones, and non-regional lymph nodes. Rarely, distant metastases have been reported in unusual locations such as the orbit, brain, breast, heart, thyroid, kidney, spleen, intestine, muscle, and scalp. Skin metastases, while infrequent, tend to occur in the abdomen and lower limbs, likely due to their proximity to the pelvic region [6,7].

Scalp metastasis is exceptionally rare, with only eight previous reports in the literature [8]. Interestingly, it doesn't appear to be exclusively associated with advanced disease, as it has been observed in patients with both early and late-stage cervical cancer [9]. Hematogenous spread is the likely mechanism, with tumor cells potentially reaching branches of the external carotid artery and subsequently implanting in the scalp [10]. Of the seven previously reported cases treated solely with radiotherapy, one involved metastatic stage IV cervical cancer [3]. Another case involved scalp metastasis with skull involvement in a stage IIB cervical cancer patient treated with 4500 cGy of radiotherapy [11]. In a third case, scalp metastasis with skull and brain invasion was managed with surgical resection to address intracranial hypertension and reduce tumor burden, followed by adjuvant radiotherapy [12].

CONCLUSION

We present the first reported case in Addis Ababa, Ethiopia, of cervical carcinoma with rare scalp metastases. Scalp metastases, though uncommon, can be the sole indicator of advanced disease. Due to the lack of standardized treatment guidelines for skin metastases, a comprehensive radiologic and pathologic evaluation is crucial. This workup will inform a tailored management plan for patients presenting with such lesions, emphasizing the need for heightened clinical awareness.

FUNDING

This study was funded by the Radiotherapy Department of the National Institute of Neoplastic Diseases.

CONFLICTS OF INTEREST

There are no potential conflicts of interest involved in this research.

ACKNOWLEDGMENTS

The authors would like to thank the Plan Esperanza, funded by the Peruvian government.

CONSENT

Written informed consent was obtained from the patient for publication of this case report accompanying images.

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