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Primary Malignant Melanoma of the Vagina: A Rare Case Report

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ABSTRACT

Primary malignant melanoma of the vagina (PMMV) is an exceptionally rare form of cancer, accounting for only 3% of melanomas in the female genital tract and 0.3%–0.8% of all melanomas in females. Vaginal melanoma is a highly aggressive malignancy with a poor prognosis, as evidenced by a 5-year survival rate ranging from 5% to 25%. The high recurrence rates, regional lymph node involvement, and distant metastases contribute to its unfavourable outcomes. The amelanotic form of vaginal melanoma can often be misdiagnosed as other primary vaginal malignancies, which may have better prognoses. Early detection and treatment are crucial for improving survival chances despite the generally poor prognosis. We report a case of 70 year old female presenting with friable mass in vaginal vault which was diagnosed as amelanotic melanoma on biopsy.

Keywords: Primary malignant melanoma of the vagina, PMMV, malignant melanoma, melanoma

INTRODUCTION

Malignant melanoma is a common, aggressive cancer arising from the transformation of pigment-producing cells called melanocytes. While skin melanomas are the most common, melanocytes can also be found in mucosal linings, including those of the gastrointestinal, respiratory, and urogenital tracts. Mucosal melanomas, though rare, account for only 1.4% of all melanomas[1]. Of these, vaginal melanoma represents about 3% of female genital tract melanomas and 0.3%–0.8% of all melanomas in women, with an incidence rate of only 0.46 cases per million women per year. The prognosis for primary vaginal malignant melanoma (PVMM) is poor, with a 5-year survival rate between 5% and 25%[2].

CASE REPORT

A 70-year-old female presented to Gynaecology OPD with complaint of mass in

the vaginal vault and vaginal discharge since 2 months. On further examination, the mass was found to be soft to firm in consistency associated with local pain and bleeds on touch. No other lesion was identified in the cervix and vulva. Patient was a known case of leiomyoma with hypothyroidism. There was no significant family history. Vaginal examination revealed a solid grey-black mass in the lower third of the anterior vaginal wall extending to the right and left vaginal wall. MRI was done which revealed a mass lesion measuring 106*102*110 mm located in the vaginal vault near the posterior wall of urinary bladder and rectosigmoid colon. Patient was investigated further and biopsy was performed. The biopsy was fragmented and all the soft tissue pieces were submitted for histopathological examination.

Microscopic examination from the biopsy submitted show malignant cells arranged in sheets, nests, and cords. These malignant cells were pleomorphic varying in shapes from oval-to-spindle to polygonal. The cells showed hyperchromatic nuclei, prominent nucleoli, intranuclear inclusions, and abundant eosinophilic cytoplasm. There were abundant mitotic figures and bi- and multi-nucleated giant cells. Possibility of metastasis from other sites, Poorly differentiated squamous cell carcinoma, lymphoma and malignant melanoma (amelanotic type) were kept as differentials. IHC panel was applied for further categorization. The cells were negative for CK, CD3, CD20 and were positive for Vimentin and HMB-45. In the absence of any other lesion in rest of the genital tract, a diagnosis of primary malignant melanoma of the vagina was made. The patient denied any further surgical intervention and was thus sent for radiotherapy.

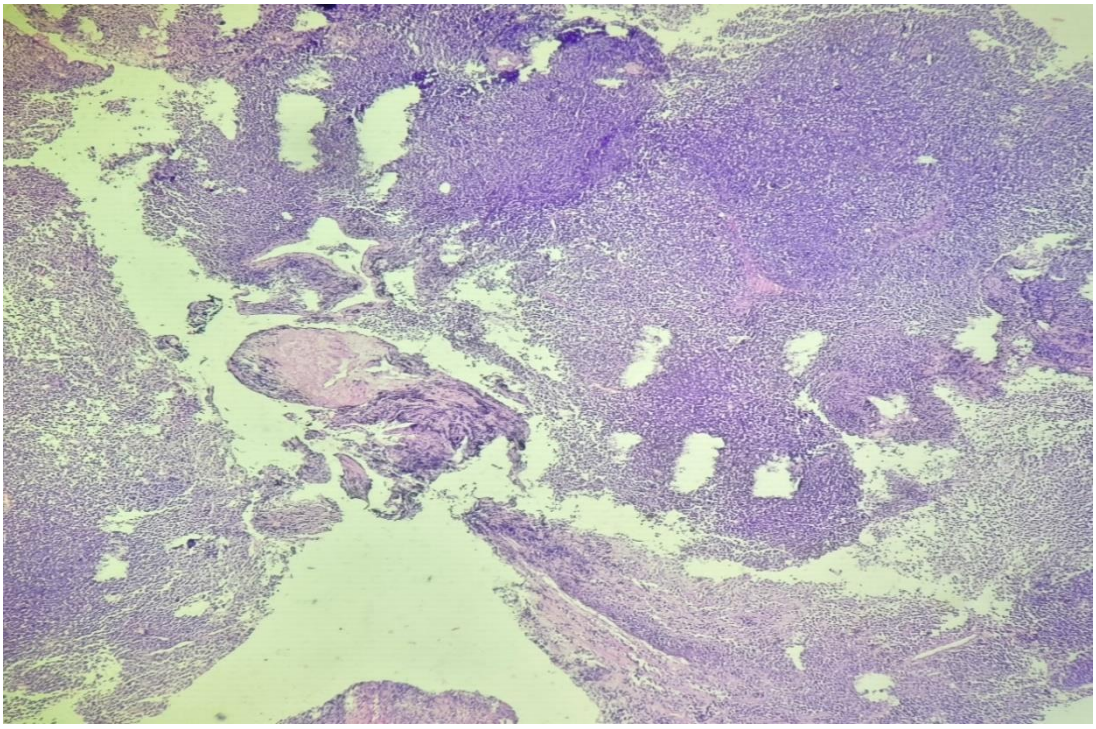

Figure1 (H&E; 100x) showing malignant cells arranged in sheets admixed with lymphoplasmacytic infiltrates.

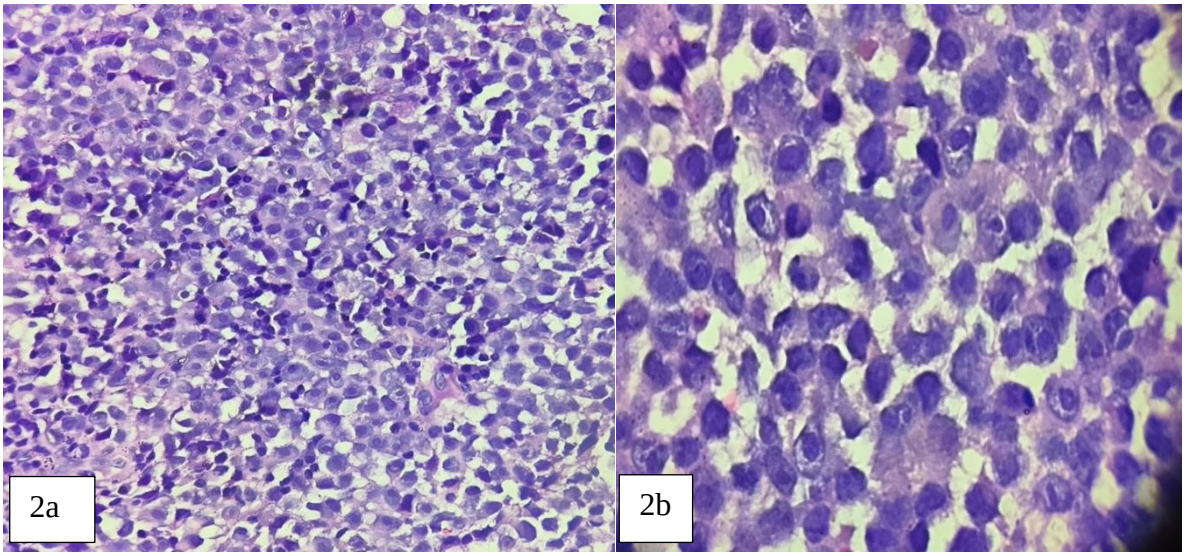

Figure 2a and 2b (H&E; 400x and 1000x oil immersion) showing presence of malignant cells having high N:C ratio, prominent macro-nucleoli and moderate clear to eosinophilic cytoplasm

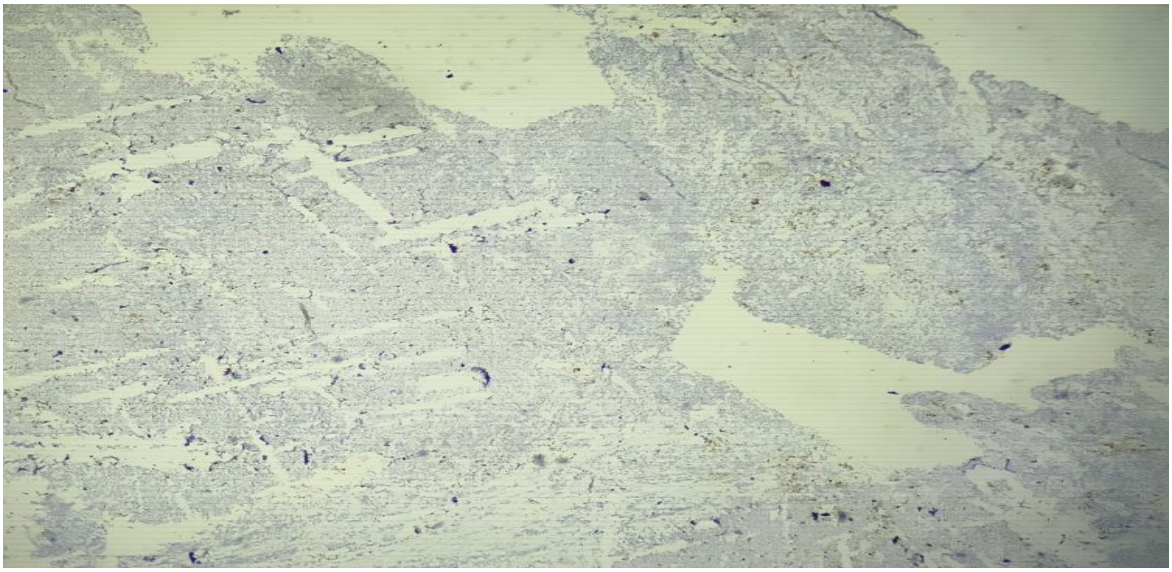

Figure 3: IHC staining showing CK negative

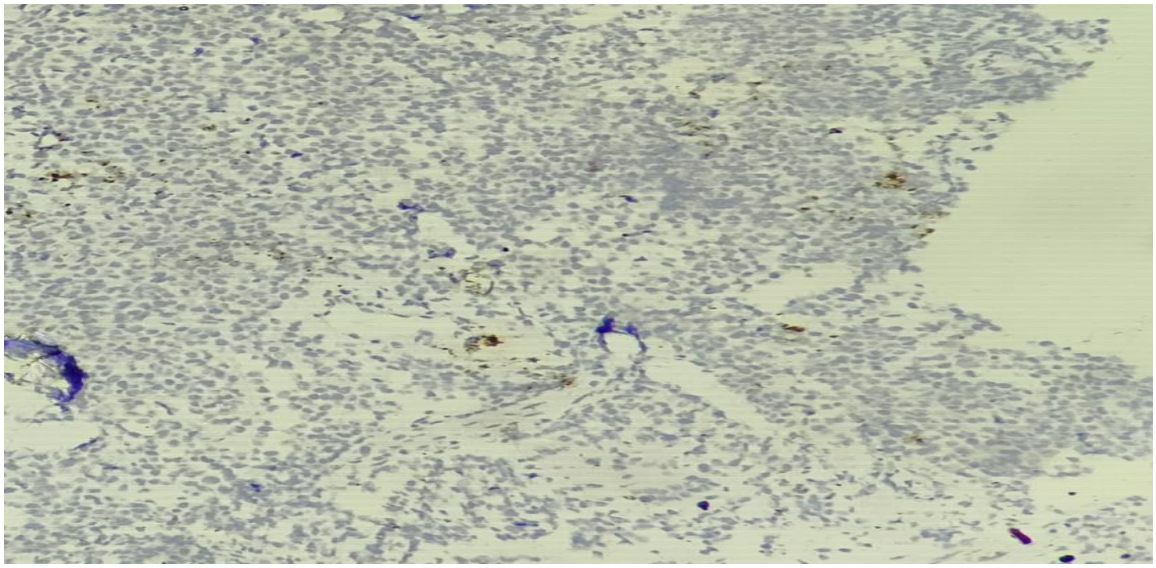

Figure 4: IHC staining showing CD3 negative

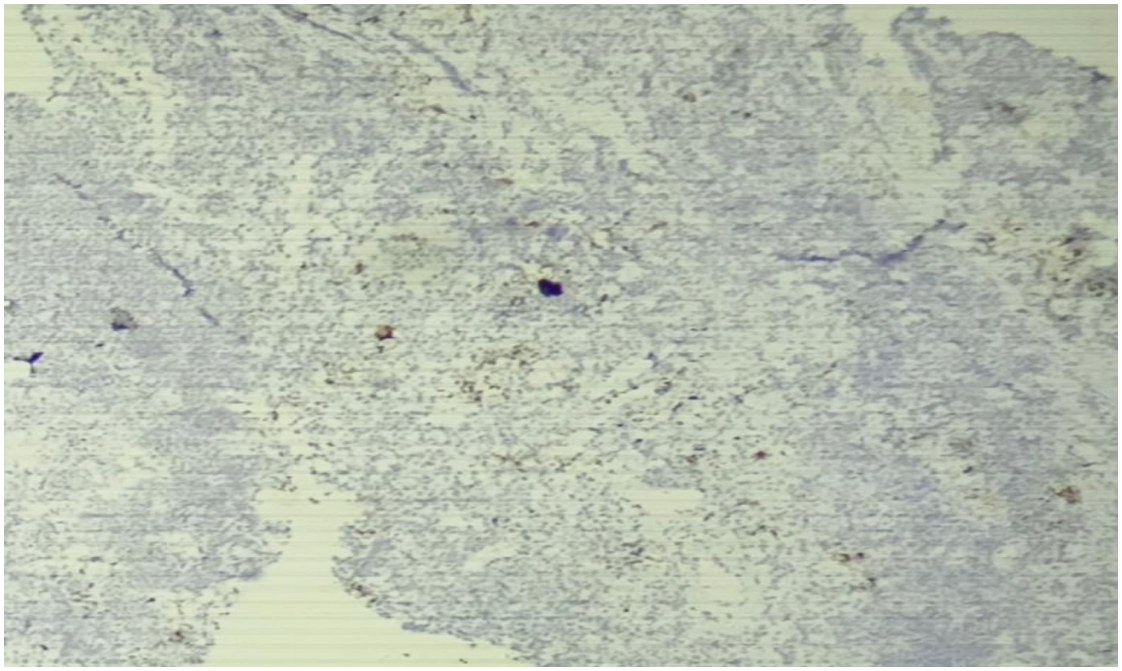

Figure 5: IHC staining showing CD20 negative

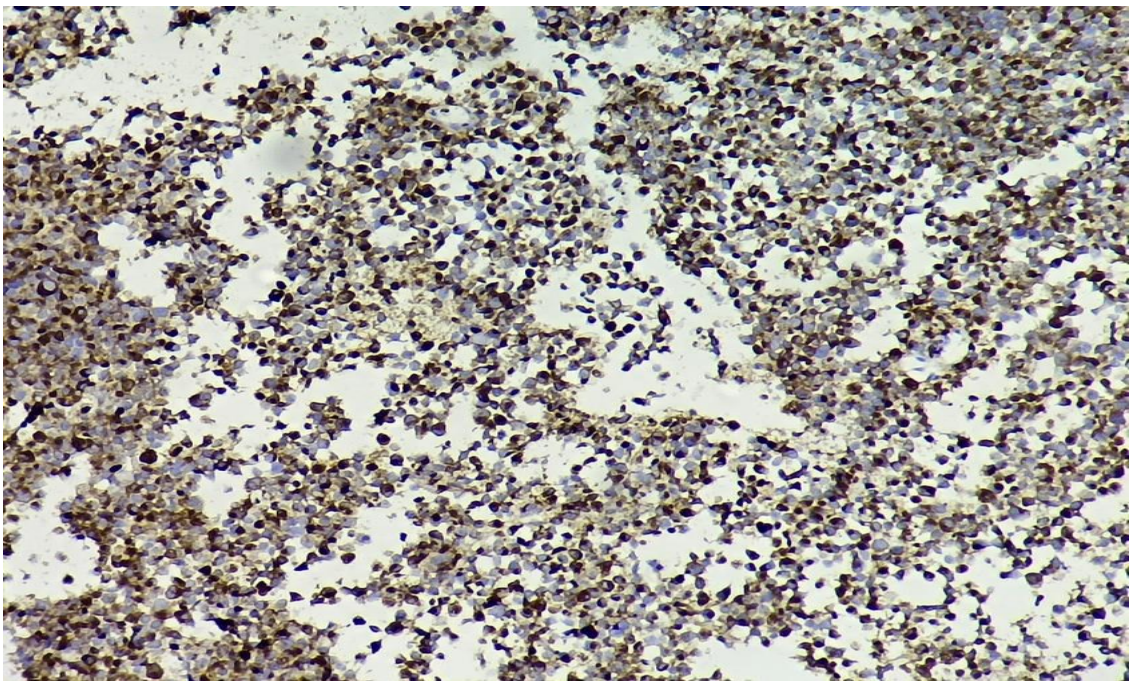

Figure 6: IHC staining showing cytoplasmic positivity of HMB-45

DISCUSSION

Primary malignant melanoma of the vagina is an uncommon gynaecological malignancy that carries a high risk of recurrence, distant metastasis, and poor survival rates. It typically affects postmenopausal women and is often located in the distal third of the anterior vaginal wall[3]. Symptoms include vaginal bleeding (63.6%), vaginal mass (15.9%), and vaginal discharge (15.9%). The appearance of vaginal melanomas is often pinkish, with ulceration present in many cases, unlike cutaneous melanomas, which arise from nevi[4].

The diagnosis of malignant melanoma is based on histopathology and immunohistochemical markers such as S100 and HMB-45. A thorough physical examination and imaging studies are essential for identifying the primary site,

particularly for distinguishing it from metastases from nearby organs, such as the bladder and colon[4].

Tumor size is a crucial prognostic factor. According to a meta-analysis by Buchanan et al., patients with tumors smaller than 3 cm had a median survival of 41 months, compared to just 12 months for tumors larger than 3 cm[5].

Treatment typically includes wide local excision, radical surgery, radiotherapy, or a combination of these modalities. Chemotherapy and immunotherapy may also be considered, especially in advanced stages. The optimal treatment approach remains unclear due to the rarity of the disease[5].

CONCLUSION

Primary malignant melanoma of the vagina is a rare and aggressive cancer, primarily affecting postmenopausal women. It typically presents with abnormal vaginal bleeding, pain, or the presence of a mass. Due to its unique presentation and poor prognosis, PMMV requires early detection for any chance of survival improvement. Although the standard treatment approach is still debated, surgery remains the cornerstone of management. In metastatic or advanced cases, treatments derived from cutaneous melanoma protocols may offer some benefit, but responses are generally low[6].

Regular gynecological examinations for elderly women and the use of immunohistochemical assays for accurate diagnosis are essential[7].

Declaration by Authors

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