A primary amelanotic melanoma of the vagina, diagnosed by immunohistochemical staining with HMB-45, which recurred as a pigmented melanoma

H Oguri, C Izumiya, N Maeda, T Fukaya, T Moriki

Usually, malignant melanoma is readily diagnosed by the presence of melanin granules. Although amelanotic melanoma contains a few melanin granules, it is often difficult to differentiate from non-epithelial malignant tumours. This report describes a case of amelanotic melanoma of the vagina, which was originally suspected to be a non-epithelial malignant tumour, but was subsequently correctly diagnosed by immunohistochemical staining with the HMB-45 antibody and for the S-100 protein. A light grey tumour with superficial ulceration was located in the upper third of the vagina. The patient was treated with irradiation followed by chemotherapy. Subsequently, the tumour disappeared and cytology was negative; thus, she achieved complete remission. However, 20 months after complete remission, the tumour recurred locally: the site had a grossly black appearance, which was pathognomonic for a malignant melanoma. Thus, HMB-45 and S-100 protein immunohistochemistry confirmed the diagnosis of amelanotic melanoma.

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detected by magnetic resonance imaging, and cytological and histological examination revealed no evidence of malignancy. Thus, the patient achieved CR with this treatment. To prevent recurrence, four cycles of the same chemotherapy regimen were performed every four months after CR. However, a local recurrence was found 20 months after achieving CR. The recurrence had a grossly black appearance, which was pathognomonic for a malignant melanoma. Malignant melanoma containing many melanin granules was confirmed by histopathological studies of the biopsied specimen.

**DISCUSSION**

Primary malignant melanoma of the vagina is extremely rare. It accounts for less than 10% of female genital tract melanomas, and just 4% of all vaginal malignancies. Primary vaginal melanoma is less frequent than other melanomas of the female genital tract in both Europe and America. In contrast, Ikegaya et al reported that approximately 52% of female genital tract melanomas in Japan are primary vaginal melanomas. These differences in incidence seem to be caused by race.

Vaginal melanomas are usually pigmented; in a recent review, less than 10% were found to lack pigmentation. In Japan, approximately 15% of vaginal melanomas have been reported as amelanotic, so that amelanotic melanoma of the vagina is extremely rare across different races.

‘The HMB-45 antibody stains a 10 kDa cytoplasmic glycoprotein thought to be part of the premelanosome complex’

The diagnosis of malignant melanoma is readily made if melanin pigment is present. More than 90% of primary vaginal cancers are epithelial neoplasms, and squamous cell carcinoma is the most common type. Malignant melanoma usually presents as a black or brown lesion. It is readily diagnosed by conventional histochemical staining; however, amelanotic melanoma, which is a unique variant of malignant melanoma, can be misdiagnosed as a carcinoma or sarcoma because of the lack of pigmentation. It has been recently reported that immunohistochemical staining with HMB-45 is useful for the cytological and histological diagnosis of amelanotic melanoma. The HMB-45 antibody stains a 10 kDa cytoplasmic glycoprotein thought to be part of the premelanosome complex. HMB-45 can be important in the evaluation of undifferentiated neoplastic lesions that are suspected to be melanomas.

In our case, the tumour was unpigmented, and melanin granules were not demonstrated by either conventional histochemical staining or Fontana-Masson silver staining. Because of these findings, we initially suspected a non-epithelial malignant tumour. Subsequently, immunohistochemical staining for several different antigens was performed.

**Take home messages**

- We present a rare case of amelanotic melanoma of the vagina, originally suspected to be a non-epithelial malignant tumour, but subsequently correctly diagnosed by HMB-45 and S-100 protein immunohistochemistry.
- The tumour recurred locally as a malignant melanoma, confirming that HMB-45 and S-100 protein immunohistochemistry are useful for the diagnosis of amelanotic melanoma.
Immunohistochemical staining with HMB-45 demonstrated melanin granules in a few tumour cells; thus, this case was ultimately diagnosed as an amelanotic melanoma.

The patient subsequently experienced a recurrence, and the lesion was an obvious pigmented malignant melanoma, proving that the previous diagnosis of amelanotic melanoma was correct. We reconfirmed the usefulness of immunohistochemical staining with HMB-45 and S-100 protein for the diagnosis of amelanotic melanoma.

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