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

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Primary malignant melanoma of the vagina is extremely rare. Less than 250 cases have been reported. The diagnosis of malignant melanoma is readily made if melanin pigment is present. A small but important group of cutaneous melanomas can be classified as unusual variants. Many of these unusual variants have a distinct histopathological appearance, which was pathognomonic for a malignant melanoma. Thus, HMB-45 and S-100 protein immunohistochemistry confirmed the diagnosis of amelanotic melanoma.

CASE REPORT
A 53 year old (gravida 5, para 3) Japanese woman was referred to our hospital on 27 December 2000. Her main complaint was a yellowish discharge and vaginal bleeding. On vaginal examination, we found a light grey tumour with superficial ulceration, involving the upper third of the anterior vaginal wall. The tumour did not involve the cervix. Magnetic resonance imaging of the pelvis was performed. A mass in the anterior vaginal wall, 35 × 18 × 35 mm in size, was found on T1 weighted imaging. Subsequent studies revealed no distant metastases or infiltration to the urethra, urinary bladder, or rectum.

Cytological examination of vaginal mucosal or transcervical biopsy specimens revealed a diffuse infiltration of large pleomorphic spindle shaped tumour cells in the vaginal mucosa. Histologically, the tumour cells were positive for HMB-45 and the S-100 protein immunohistochemistry.

Amelanotic melanomas can be misdiagnosed as carcinomas or sarcomas because of the minimal number of melanin granules. Recently, an immunohistochemical technique incorporating the use of the HBM-45 monoclonal antibody has improved the accuracy of diagnosing malignant melanomas.

“Amelanotic melanomas can be misdiagnosed as carcinomas or sarcomas because of the minimal number of melanin granules”

We present a case of amelanotic melanoma of the vagina, which was initially suspected to be a non-epithelial malignant tumour, but was subsequently correctly diagnosed by HMB-45 and S-100 protein immunohistochemistry. Despite intensive treatment, the patient experienced a local recurrence 20 months after achieving complete remission (CR). The site of recurrence was grossly black, and was an obvious malignant melanoma. Specifically, this is a case of amelanotic melanoma of the vagina, which was diagnosed by HMB-45 and S-100 protein immunohistochemistry; it recurred as a pigmented melanoma.

Abbreviations: CR, complete remission; iv, intravenous
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.1 Primary vaginal melanoma is less frequent than other melanomas of the female genital tract in both Europe and America.1,2 In contrast, Ikegaya et al reported that approximately 52% of female genital tract melanomas in Japan are primary vaginal melanomas.5 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.1 In Japan, approximately 15% of vaginal melanomas have been reported as amelanotic,1 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"4

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.6,7 The HMB-45 antibody stains a 10 kDa cytoplasmic glycoprotein thought to be part of the premelanosome complex.4 HMB-45 can be important in the evaluation of undifferentiated neoplastic lesions that are suspected to be melanomas.2

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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