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Primary Malignant Melanoma of the Vagina: A Case Report

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A primary malignant melanoma of the vagina is a very rare gynecologicalmalignant tumor. Its clinical behavior is more aggressive than thatofcutaneous and vulvarmelanomas.Wepresent a case of a large sized primary melanoma of the lower third of the vagina, with a cervical lesion, in a 58-year-old postmenopausal woman. The patient was treated with conventional external radiation therapy and intracavitary radiotherapy (ICR), without surgical treatment. Although the primary lesion showed a partial response, the patientdied ofextensive metastases,which were found 4.5monthsaftertheinitialdiagnosis. Wesuggest that shortening the treatmentperiod,suchas hypofractionated radiation therapy and surgical removal,andvarioussystemic therapies forpreventingearlydistantmetastasis,are appropriate treatments for a primary malignant melanoma of the vagina, with a large tumor size.

Key Words: Primary malignant melanoma, Vagina, Radiation therapy

Primary malignant melanoma of the vagina is extremely rare entity, with fewer than 250 reported cases to date.[1~6] Primary melanoma of the vulva are four to nine times as frequent as those of vagina.[2] The vagina is the second most common site of melanomas in female genital tract. It accounts for 2~5% of the female genital tract melanomas and <4% of all vaginal malignancies.[3,4] Although malignant melanoma may occur anywhere in the vagina, it is more commonly found on the anterior wall and distal one-third of the vagina.[3~6] It may be polypoid, pedunculated, papillary, or fungating in appearance. These lesions are usually pigmented, but less than 10% lack pigmentation. Malignant melanoma of the vagina mainly occurs in post-menopausal women, with most of patients being over50years.[2,3,6~8] The most common presenting symptom is vaginal bleeding, although it may also present as a mass or with discharge or dyspareunia.[4,5,9~11]

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Vaginal melanoma is a highly malignant disease due to the extensive lymphatics of vagina and melanoma's propensity for hematogenous spread. The treatment modalities for primary vaginal melanoma are varied.Regardless of primary therapy chosen, the outcome of patients with vaginal melanoma has been uniformly poor.[3~5,11,12]

Wedescribedapatientwithprimary vaginal melanoma and a review of the pertinent literature.

Case Report

A 58-year-old married postmenopausal woman complained of vaginal spotting which lasted for one year. Speculum examination of the vagina revealed about 6 cm sized three polypoid brownish black and greyish red colored growing tumor arising from the right posterolateral portion at the lower third of the vaginaandanother brownish blackcolored lesion atcervix(Fig.1).There werenopalpablelymph nodes in her bilateralinguinal regions. MRI of pelvis was performed before treatment. A lobulated mass in the vagina, 4.5×4.5×5 cm in size was demonstrated on T1 weighted image of MRI (Fig. 2). No metastatic lesion was detected by chest X-ray, abdominal

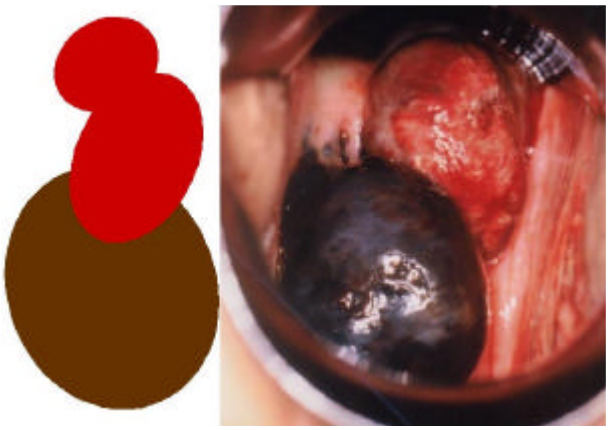

Fig. 1. Initial vaginal examination. About 6 cm sized polypoid brownish blackandredcoloredmassshowedright posterolateral portion at the lower third of the vagina.

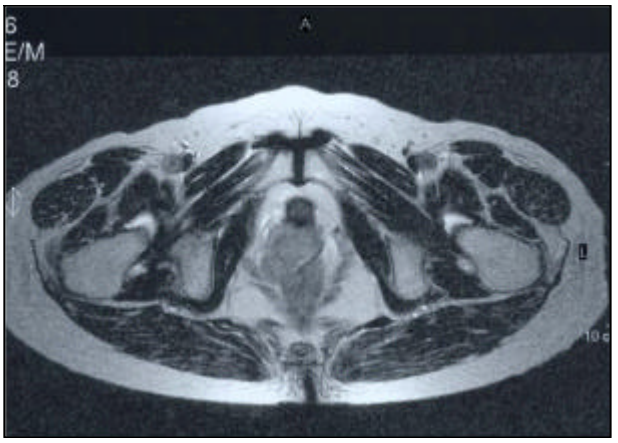

Fig.2. InitialMRimage.4.5×4.5×4.5cm sized lobulatedmassis demonstrated on T1 weighted image of MRI.

sonographic examination, bone scan, and MRI of abdomen and pelvis. Her past medical history as well as family history was unremarkable. Biopsy of the vaginal andcervical lesions demonstrated amelanotic malignant melanoma. Histologic findings showeddiffuse proliferation of round-to-ovoid tumor cells without definite organoid differentiation (Fig. 3). The tumor cells had pleomorphic hyperchromatic or vesicular nuclei with prominent nucleoli and abundant cytoplasm. Mitotic figures were occasionally noted. Some granulation tissue and brown pigment infiltration were noted in the eroded subepithelial [illegible] These pigment showed positive reaction for Fontana- Masson stain. Immunohistochemical staining was positive for HMB-45 antigen (markers for melanoma) and vimentin, while negative for cytokeratin (marker for squamous epithelium), EMA, S-100, chromogranin, synaptophysin, LCA, desmin and actin (marker for smooth muscle).

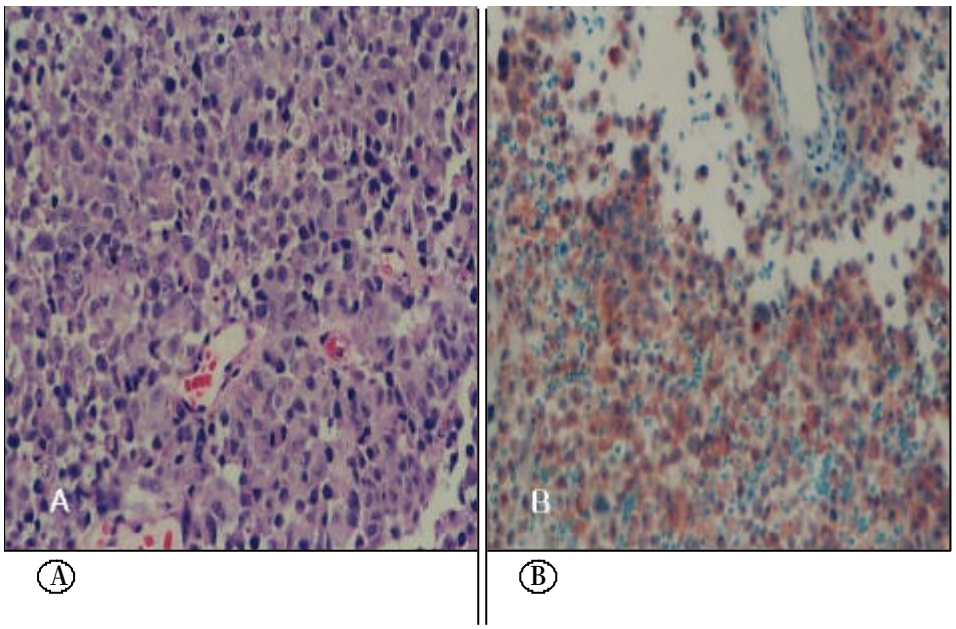

Fig. 3. Pathologic finding of vaginalmelanoma.(A)Thevaginalmass shows diffuse proliferation of ovoid tumor cells. The tumor cells have large pleomorphic nuclei with abundant cytoplasm. (H/E, ×200), (B) The tumor cells show positive reaction for HMB 45 on immunohistochemical stain (×200).

The patient received intracavitary radiotherapy (ICR) with three applications (each application: six separated fractions of 500 cGy, 2 sessions per week) following external radiation

therapy of 5040 cGy (fractions of 180 cGy given 5 days a week) to the pelvis and both inguinal areas. The total tumor dose was 8040 cGy. Follow up vaginal and CT examination were performed 1 month after the irradiation. The tumor was decreased to size of about 2.5 cm (Fig. 4).

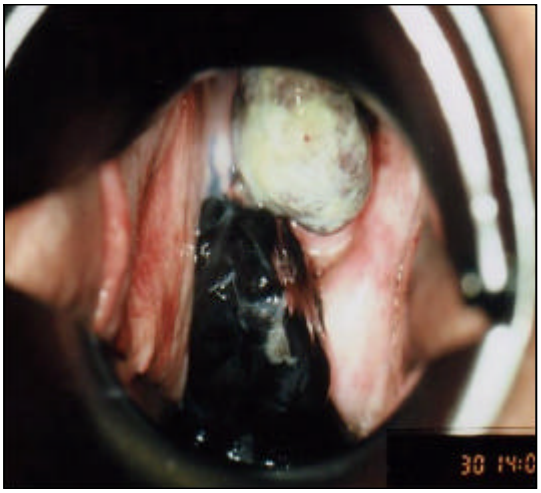

Fig. 4. After radiation therapy, vaginal examination revealed tumor of the vagina was decreased to about 2.5 cm in size.

Unfortunately, 1.5 months after treatment, extensive distant metastases were detected in the lung, liver and meninges. Although primary lesions showed partial response by radiation therapy alone, the patient died of extensive distant metastases 4.5 months after the initial diagnosis and 2 months after treatment.

Discussion

Malignant melanoma of the vagina is rare disease. This is reported for about 10 cases by searching for vaginal melanoma of Korea Medicine Data Base (KMbase). There was not any report for comparison of treatment types. Vaginal melanoma has a uniformly poor prognosis, regardless of the primary treatment delivered. Five-year survival rate of patients with this tumors ranged from 5% to 25%, according to recent literatures.[2~5,11] In contrast to vaginal melanoma, 5-year survival rate of patients with vulvar melanoma was about 30 ~ 50%.[2,9] The natural history of vaginal melanoma also differs from that of skin with more aggressive behavior due to the different anatomic structure. It was difficult to identify independent factors that affect the prognosis of patients, because of the rarity of this disease. The most important prognostic factor is the size of tumor. Petru et al[5] usually treated with conventional radiation therapy and intracavitary radiotherapy (ICR). They reported that three of seven patients with tumor ≤3 cm survived longer than five years compared to none of seven patients with tumor >3 cm. Three longer survivors with tumor ≤3 cm recurred locally 44 ~ 94 months after initial diagnosis. Three of seven patients with tumor >3 cm, however, recurred within 7 ~ 28 months, and another 4 patients had progressive disease and distant metastasis shortly in follow up 2 ~ 13 months. Though our case with tumor >3 cm had also showed partial response after radiation therapy, the patient developed early distant metastases after diagnosis. Buchanan et al[11] and Reid et al[13] also noticed that patients with tumor size <3 cm had significantly better outcome than patients with ≥3 cm. Contrary to cutaneous melanoma, tumor thickness is not a suitable factor in predicting prognosis for malignant melanoma of the vagina.[11] Other potential prognostic factors such as age, parity, gravity, location of the vagina, and FIGO stage are not found to be significant.[5,10,11]

There are no general recommendations for the treatment of primary vaginal melanoma. There were no significant differences in survival among treatment types such as surgery only, radiation therapy only, surgery plus radiation therapy, and chemotherapy plus surgery and radiation therapy.[3,10,11,13] By Irvin et al,[4] the use of wide local excision followed by hypofractionated radiation therapy in the primary management of vaginal melanoma appears to provide excellent locoregional control. Petru et al[5] and Fan et al[7] reported that conventional radiation therapy with intracavitary radiotherapy (ICR) may be of value as an alternative to surgery or an adjunct modality in patients with lesions ≤3 cm in diameter. Surgery was used more frequently for patients with early stages of melanoma, while radiation therapy was used more frequently to treat patients with advanced stages of melanoma (66% vs 40%) by Creasman et al.[3] Some authors, however, noticed better survival with radical surgery than conservative surgery or radiation therapy.[7,14,15] Various chemotherapeutic agents have been used with discouraging results.[16] Adjuvant therapy with high dose interferon alfa-2b has been shown to improve

overall survival in patients with high risk cutaneous melanoma.[17] There are almost no data yet regarding to immunotherapy in vaginal melanoma.[18]

Based on the literatures and on this case, it is beneficial that tumor size of ≤3 cm was treated with a local therapy such as surgical treatment and radiation therapy, or combination therapy. We suggest that shortening the treatment period such as hypofractionated radiation therapy and surgical treatment, and various systemic therapy for preventing early distant metastasis, are appropriate treatments for a primary malignant melanoma of the vagina, with a large tumor size.

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국문초록

질의 원발성 악성 흑색종: 증례보고

가톨릭대학교 의과대학 대전성모병원 방사선종양학과*, 산부인과†,
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여성의질에발생하는원발성악성흑색종은매우드문질환으로알려져있다. 질의원발성흑색종은피부나외음부에 발생하는원발성 흑색종에비해매우빠른임상경과를나타낸다. 본 증례는 58세의 폐경기여자환자로종양 크기가비교적 큰 흑색종이 하부질에있었으며, 작은 색소침착된 병변이 자궁경부에 보였다. 환자는수술적인 처치 없이 통상분할 외부방사선 조사와 근접방사선 치료 만을 시행하였다. 치료 후 원발병소는 부분관해를 보였으나, 진단 후 4.5개월 만에 다발성 원격전이로 사망하였다. 종양크기가 큰 흑색종이 질에 발생한 경우 방사선치료 단독으로도 만족할만한 국소제어를 보였지만, 본 증례와 같이 종양의크기가 큰 예에서는 소분할방사선 조사와 수술적인 종양제거로 국소치료기간을 단축하고, 전신적인 치료를 고려하여 조기에 발생하는 원격전이를 막기 위한 치료가 고려되어야 할 것으로 사료된다.

핵심용어: 원발성 악성 흑색종, 질, 방사선치료