Metastatic Blue Nevus-like Melanoma Detected by Liquid-based Urine Cytology – A Case Report

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INTRODUCTION

Melanoma, either primary or metastatic, can rarely simulate blue nevus both clinically and histopathologically, giving diagnostic pitfalls.

Primary lesion of metastatic melanoma mimicking blue nevus has been conventional type of malignant melanoma as well as blue nevus-like melanoma, so-called malignant blue nevus.

Herein we describe an interesting case of blue nevus-like metastasis that has not been described before on liquid-based catheterized urine cytology.

CASE SUMMARY

61M

Present illness: blue colored papuloplaques on the left temple for over 1 year, which had grown rapidly without any symptoms (Fig 1).

After punch biopsy of the lesion, a positron emission tomography scan revealed multiple lymph node and bone metastases. The patient received chemotherapy with dacarbazine. During the admission for the chemotherapy, hematuria of unknown duration was detected. Catheterized urine cytology was performed.

Abdominopelvic computed tomography (CT) revealed possible liver, spleen, right kidney metastases and suggested potential metastases in the bladder dome and lungs. The patient died from pneumonia 3 months after initial diagnosis.

HISTOLOGIC FINDING

Fig 1. A blue to black-colored large plaque with multiple satellite papules on the left temple

Fig 2. Histologic findings of blue nevus-like melanoma from the primary skin lesion. (A) The almost entire dermis is proliferated with pigmented cells without junctional activity. (B) The pigmented tumor cells are oval to spindled with small nuclei showing mild nuclear pleomorphism. (C) Epithelioid cells with enlarged nuclei predominate in other areas. (D) There are blue nevus-like areas. (E) The tumor cells with obvious cytologic atypia can be rarely seen (arrow).

Fig 3. Metastatic blue-nevus like melanoma to the stomach. (A) Esophagogastroduodenoscopy (EGD) reveals diffusely scattered numerous black spots on the gastric mucosa. (B) The biopsied specimen shows pigmented tumor cells in the lamina propria between normal foveolar epithelial cells. (C) The tumor cells are the same as the cells in the primary skin lesion, which are epithelioid to spindled with mild nuclear pleomorphism and rare conspicuous nucleoli.

Fig 4. Metastatic blue nevus-like melanoma to the other site of the scalp (A) The tumor consists of solid sheets of epithelioid and spindled cells (B) A focus of necrosis is noted in the mid dermis (arrow), (C) The tumor is composed of more epithelioid cells than the primary skin lesion. (D) It also has blue nevus-like areas in the periphery. (E) Mitotic figures are identified in the mid to deep dermis, which count up to 3/10 high power fields (arrowhead), suggesting the possibility of malignancy. (F) The most of the tumor cells shows strong positivity for HMB45 immunohistochemical stain, confirming that the pigmented cells are not melanophages but malignant melanoma cells.

CATHETERIZED URINE CYTOLOGY

Fig 5. Catheterized urine cytology on liquid-based preparation (A) The specimen is moderately cellular and composed of singly scattered tumor cells and numerous red blood cells. A mitotic figure (arrow) and several necrotic single cells (arrow head) are noted (B) The pigmented tumor cells, which have coarse intracytoplasmic melanin granules, are ovoid to spindled with mild nuclear pleomorphism. (C) The nuclei of the tumor cells are not significantly enlarged and have hyperchromatic nuclei without discernible nucleoli.

DISCUSSION

Either primary blue nevus-like melanoma or blue nevus-like metastasis can include only a small portion of atypical cells that are difficult to recognize due to intracytoplasmic melanin pigments.

It would be necessary for cytopathologists to be aware of the possible presence of metastatic melanoma mimicking blue-nevus and suspicious for blue nevus-like metastasis if blue nevus-like cells are detected on urine cytology in the patients with clinical history of malignant melanoma.