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Case Report

Metastatic Malignant Melanoma: A Case Study

Swarup Anand, Radha Verma, Chirag Vaja, Rakesh Bade, Amiti Shah, Kiran Gaikwad

[1]Resident, Department of General Surgery, K.J. Somaiya Hospital, Mumbai, Maharashtra, India, [2]Associate Professor and Head of Unit, Department of General Surgery, K.J. Somaiya Hospital, Mumbai, Maharashtra, India, [3]Consulting Oncosurgeon, Department of General Surgery, K.J. Somaiya Hospital, Mumbai, Maharashtra, India, [4]Plastic Surgeon, Department of General Surgery, K.J. Somaiya Hospital, Mumbai, Maharashtra, India

Abstract

Malignant melanoma is a cancer of melanocytes usually arising in the skin but can form anywhere that melanocytes exist such as in bowel mucosa, retina, and the leptomeninges. We present a similar case of primary malignant melanoma of left foot, a rare and highly malignant disease with very poor prognosis. It accounts for only 3% of all skin cancers but accounts for 75% of skin cancer-related deaths per year. Radical surgery is the only treatment option. A case of primary malignant melanoma of left foot and ilioinguinal lymph node metastasis was treated by primary wide local excision of primary tumor with post-operative radiotherapy.

Key words: Ilioinguinal block dissection, Malignant melanoma, Metastasis, Wide local excision

INTRODUCTION

Cutaneous malignant melanomas is cancer developing from the pigment-containing cells called melanocytes, occurring most commonly in lower limbs in females and over back in males.[1-3]

Melanomas are the most dangerous type of skin cancer worldwide amounting to only 5% of skin malignancy, but resulting in over 75% of deaths related to skin malignancy. It is the most common cancer in young adult group (20-39 years). It is commonly seen in white skinned Caucasian population which amounts to total 3% of all malignancies. In Indian and Asian population, incidence of malignant melanomas amount to just 0.2-0.5/1,00,000 patient years. Whereas both incidence and mortality are decreasing or leveling off in the younger population, rates are still increasing in the older age groups. The rate of increasing incidence varies geographically with "high incidence regions" like Australia; "moderate incidence regions" like Canada and USA; "low incidence regions" like Scotland and India.[4-5]

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Prognosis of melanoma diagnosed earlier is excellent but once it becomes malignant, it becomes very poor with metastasis to brain and visceral organs have very poor prognosis.

CASE REPORT

A 75-year-old female came with a history of left foot pigmented lesion over medial aspect of ankle of left foot with left inguinal swelling about 10 × 15 cm in size painless in nature. A patient was a known diabetic and hypertensive on medication. The patient was initially planned for excision and biopsy, and treated by wide local excision of pigmented lesion of left foot with split thickness skin grafting with graft taken from opposite thigh with inguinal lymph node excision and biopsy taken. Lymph node with the appearance of cystic degeneration with hemorrhagic fluid aspirate was taken for cytological study. It was suggestive of superficial spreading melanoma of left foot pigmented lesion with a maximum size of 2.5 cm with lymphatic tumor emboli detected with no other signs of metastasis. An incisional biopsy of left inguinal lymph node was suggestive of metastatic melanoma of Clark level II. The patient was again planned for ilioinguinal block dissection with Sartorius cover in which approximate 7 × 7 × 6 cm of pelvic lymph node block dissection was done to achieve a tumor free surgical margin. It was followed up by the preservation of femoral artery, vein, and nerve with Sartorius cover. Histopathological diagnosis was suggestive of tumor abutting the superior and inferior margin and

Corresponding Author: Dr. Swarup Anand, Department of General Surgery, K.J. Somaiya Hospital, Mumbai, Maharashtra, India. Phone: +91-9167397273. E-mail: sasnikh143@gmail.com

the base with margin free of tumor extension. Paraffin section report was suggestive of metastatic melanoma with maximum tumor size of 16.0 cm with tumor abutting the superior and inferior soft tissue margin and base. Revised superior and inferior margin were free of tumor extension with perinodal infiltration (1/4).This was followed up by post-operative radiotherapy.

DISCUSSION

Melanomas are of neuroectodermal in origin, 20 times more commonly seen in whites than in blacks. Malignant melanoma is a rare occurrence in the Indian subcontinent with skin cancers amounting to 0.5-2/100,000 population, but due to a large population the number of cases encountered here is significant. Malignant melanoma is a serious skin malignancy with a bad prognosis, although early detection and excision and treatment give a better survival rate. Risk factors include sun exposure, ethnic factors and socio-economic factors, albinism, positive family history of skin malignancy, and other types of nonmalignant nevus.

Malignant melanomas were staged based on TNM Classification with revised classification listed below.

Melanoma TNM classification[1]

Tumar Classification	Thickness	Ulceration status/mitosis
Tis	NA	W/O ulceration and mitosis<1/mm^2
		With ulceration and mitosis<1/mm^2
T_1	≤1.0 mm	W/O Ulceration
		With ulceration
T_2	1.01-2.0 mm	W/0 ulceration
		With ulceration
T_3	2.01-4.0 mm	W/O ulceration
		With ulceration
T_4	>4.0 mm	W/O ulceration
		With ulceration
Nodes classification	Number of metastatic nodes	Nodal metastatic mass
N_0	0 nodes	N/A
N_1	1 node	Micrometastais
		Macrometastasis
N_2	2-3 nodes	Micrometastasis
		Macrometastasis
		In transit without metastatic
N_3	4 or more	Nodes

Primary tumor mitotic rate (histologically defined as the number of mitoses/mm^2) is an important independent adverse predictor of survival. For T1 melanomas, a mitotic rate of at least 1 mitosis/mm^2 replaces Clark's level of invasion as a primary criterion for defining the subcategory of T1b. The presence of ulceration remains an adverse predictor for survival.

The presence of nodal micrometastases can be defined using both hematoxylin and eosin (H and E) or immune histochemical staining.

Diagnosis

Diagnosis of a melanoma is made by its ABCDE rule characterized by its asymmetry, border, color, diameter, and evolution in character of a melanoma. Diagnosis is based on full thickness excisional biopsy in mm (Breslow), level of invasion (Clark level I-V), presence of skin characteristics, and clearance of surgical margins.[5]

Treatment Options

Surgery - a wide local excision of entire melanoma along with the surrounding healthy skin margin is cut off for prevention of a further recurrence. For *in situ* tumors, we generally treat by wide excision with skin margin of 0.5 cm with the use of imiquimod cream with or without radiation therapy. For tumors of Breslow thickness of 2 mm, we take a skin margin of 1 cm and 2 cm for tumors staged at IIb or beyond. This is associated with sentinel lymph node biopsy which if suggests cancer cells lymph node dissection is recommended. Sometimes in stage III or beyond adjuvant therapy such as radiotherapy, immunotherapy, targeted therapy, or chemotherapy may be considered.

Nonresectable-transit metastases or inoperable primary tumors of the limbs without additional metastases may be treated with isolated limb perfusion using, e.g., Melphalan and tumor necrosis factor or treatment can be only restricted to radiotherapy only. Palliative therapy for advanced disease with several metastases in different anatomical regions should initially use well tolerated single-agent cytotoxic drugs such as dacarbazine, as any systemic therapy did not result in survival prolongation but symptom palliation only. Fit patients with high volume visceral metastatic disease, who need rapid symptom palliation may be treated with combination chemotherapy in view of the superior response rates reported in some trials. Palliative radiotherapy should be considered especially for symptomatic brain or localized bone metastases only.

During melanoma follow-up, patients are clinically monitored to detect a relapse and to recognize additional skin tumors, especially a second melanoma, as early as possible. 8% of all melanoma patients develop a secondary melanoma within 2 years of their initial diagnosis. Melanoma patients also have increased risks for other skin tumors. In patients with lentigo maligna melanomas, 35% develop another cutaneous malignancy within 5 years.[5]

CONCLUSION

The approach should be prognosis based. Patients with thin primary melanoma have only a small risk of melanoma and does not need a regular radiological investigation follow-up. However, in the case of thick primary melanomas CT/WHOLE BODY PET SCAN but there is no effective salvageable therapy available till date except early successful diagnosis of relapse and use of such patients in clinical trials.

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