

Blue Melanoma Simulating Blue Nevus

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Abstract

Blue Nevus is a distinct melanocytic neoplastic entity. Its counterpart Blue Melanoma poses serious problems in diagnosis due to subtle nature of atypical nuclear features. A case of Blue Melanoma is presented here where several pathologists had difficulty in rendering malignant diagnosis. However FNAC and then excisional biopsy confirmed the diagnosis

Key words: Blue cell Nevus, malignant melanoma, Blue cell melanoma, Blue Melanoma.

Introduction

Melanoma is the third and the most fatal skin cancer in all racial groups.¹ The cardinal clinical feature of malignant melanoma is a pigmented lesion that changes visibly over a period of months to years. Any lesion noted to have change in color, shape, size, or elevation warrants medical attention and needs to be considered for the diagnosis of melanoma.²

The blue nevus and variants represent a congenital or acquired, dermal collection of pigment producing melanocytes.⁵ Cellular blue nevus may closely simulate the appearance of melanoma. The distinction of a cellular blue nevus with atypical features from melanoma can be difficult.⁶

We present a case of a Pakistani man who presented to us with a pigmented nodule. We had a suspicion of melanoma on clinical ground with the possible differential of cellular blue nevus with satellitosis. Incisional biopsy had difference of opinions regarding its malignant nature! The

Fine Needle Aspiration Cytology was compatible with malignancy while the excisional biopsy confirmed the diagnosis of malignant melanoma.

Case Report

A 27 year old Pakistani male from Chitral KPK, skin type III presented to us with rapid increase in size of a 15 year old mole on lower back. It was initially about a half cm mole; present for more than 10 years. However, for past 6 months it underwent rapid increase in size and became a large nodule. He gave history of itching, burning and easy bleeding in this lesion but there was no history of weight loss, fever or easy fatigability. There was no past history of melanoma or atypical mole syndrome. Physical examination revealed firm greyish black, 4×3.5 cm nodule with irregular shiny surface. There was another satellite papule of the same colour (Figure1&2). There was no gross lymphadenopathy.

His baseline investigations were normal. CT thorax and pelvis was done which showed moderately enlarged axillary lymph nodes. Bone scan was normal. For academic purposes, his FNAC was done which interestingly showed atypical melanocytes containing pigment particles and

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eosinophilic nucleoli. These features favored the diagnosis of malignant melanoma (figure 3).



Figure 1: Showing pigmented nodular lesion on lower back



Figure 2: satellite lesion around main lesion from which skin biopsy is taken

Pathologist graded the melanoma to fall in Clark level V (invasion up to subcutaneous fat), with Breslow thickness of 4mm. FNAC of his axillary lymph nodes showed atypical malignant cells which were also positive for S-100 and HMB-45. Now patient is being managed in the cancer hospital with extensive surgery and radiotherapy.

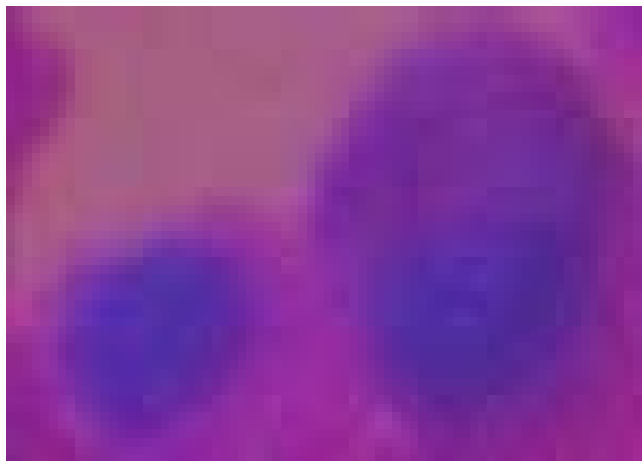


Figure 3: FNAC showing atypical pigmented melanocytes (H&E X1000)

He was then referred to a cancer hospital for further work up who thought the lesion more of a blue nevus rather than melanoma, considering the good health of the patient. They did incisional biopsy and found fascicles of spindle cells alternating with clear cells in dermis. Cells had round to oval nuclei with clear cytoplasm. There was dense sclerosis of stroma. They did not find any atypia, junctional activity, epidermal invasion, necrosis or mitoses. So that biopsy was consistent with the diagnosis of blue nevus; however, they did the complete excision and specimen was sent for histopathology. The excisional biopsy showed subtle junctional atypical activity. (Figure 4&5)

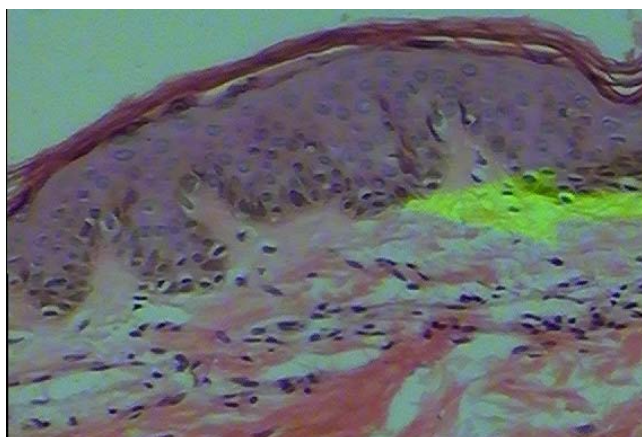


Figure 4: Subtle atypical junctional activity (H&E X 400)

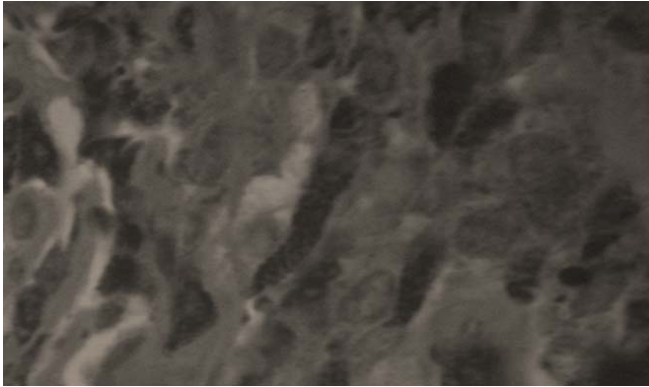


Figure5 : Atypical junctional activity. High power view showing atypical nuclei in the basal layer (H&E X 1000)

The dermis and subcutaneous tissue contained neoplastic pleomorphic melanocytes which were mostly spindly. These contained irregular nuclei with abnormal chromatin distribution and irregular nuclear membrane contours. The nucleus to cytoplasmic (N/C) ratio was high and there were deposits of intra and extracellular melanin pigment. Nests of abnormal cells were present throughout the dermis and seen to be infiltrating collagen bundles, nerves and subcutaneous fat (Figures 6, 7) S-100 and HMB- 45 stains were both positive.

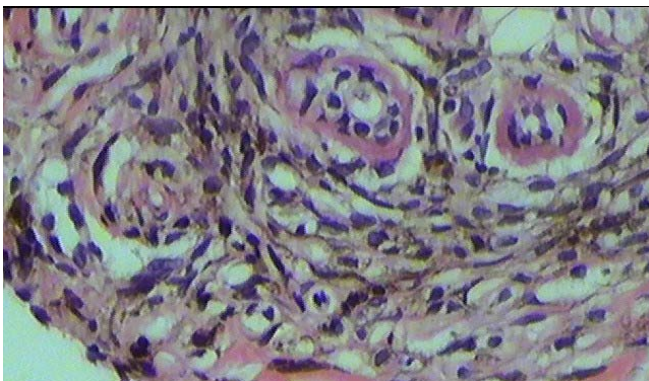


Figure 6: Atypical melanocytes infiltrating collagen and subcutaneous fat.



Figure 7: Atypical nuclear contours and irregular chromatin distribution (H&E X 1000)

Discussion

Cutaneous malignant melanoma (CMM) is the fifth most common cancer in men and the seventh in women and is one of the most deadly cancers. In recent years there has been an exponential growth of melanoma cases. However, mortality remains stable, probably related to improved diagnosis and early surgical treatment.³ The major growth patterns of melanoma are lentigo maligna (LMN), superficial spreading (SMM), nodular melanoma (NM), and acral lentiginous melanoma (ALM). In Asians, ALM is the most common subtype, and it is diagnosed in the advanced stage.² Exposure to the sun is the most important environmental cause of skin cancer.³ But in Asians and Blacks, UVR does not appear to be a significant risk factor, and it mostly occurs on non-sun-exposed skin.¹

Blue nevus is an uncommon pigmented lesion of dermal melanocytes that can appear in diverse forms: dendritic, spindle-shaped, oval-shaped, or polyhedral.⁷ The prevalence of blue nevus is as

high as 3 percent to 5 percent in the Asian population.⁵ In the last few years, it has attracted much attention due to the recognition of new entities and to its confusion with malignant melanoma. By convention, there are two well-defined histologic variants, designated as "common" and "cellular". However new entities like combined nevus, deep penetrating nevus, compound blue nevus, atypical blue nevus, locally aggressive blue nevus, congenital giant melanocytic nevus with nodular growth and melanocytic dermal tumor of unpredictable outcome have recently been identified.⁷

There are many case reports in the literature how blue nevus mimicked melanoma clinically and even dermoscopically.^{5,6,8,9,10,11} Few variants pose special difficulty. e.g., congenital giant blue nevus may infiltrate deeply without malignancy and difficult to differentiate from melanoma clinically.¹² Similarly, blue nevus with satellitosis and nodular melanoma are close differentials¹³ (as was in our case. The diagnosis can be difficult on even excisional biopsy.⁵ In our case too, the diagnosis of malignant melanoma was in doubt and in the end FNAC and excisional biopsy revealed subtle but definite cellular atypia clinching the correct diagnosis.

The main reason for difficulty in assessing the atypia is perhaps due to spindly nature of the malignant cells that conceal the diagnostic features such as irregular nuclear contours & margins and irregular chromatin pattern. We noted slight atypical junctional activity as well as irregular atypical nuclei in focal places. Lack of "obvious atypia" makes pathologists reluctant to render malignant diagnosis even in cases with manifest wide infiltration and even metastases.

All clinically suspected lesions should be excised with ample margins and biopsied to reach the definitive diagnosis. Multiple FNACs of the lesion can prove to be useful to assess subtle nucle-

ar atypia. FNAC has been reported to be quite useful in blue melanoma.¹⁴ Finally we have preferred the term Blue Melanoma as the malignant counterpart of blue nevus.

Conclusion

Blue melanoma is counterpart of Blue Nevus. It may deceptively appear benign due to subtle atypical nuclear features. Close attention must be paid the variable pictures in different parts of the tumor multiple FNAC may be carried out from different areas of large tumors. Complete excision with wider resection margins followed by thorough histopathological evaluation is strongly recommended.

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