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Case Report

Cellular blue nevus - A challenging entity: Case report

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Abstract

Blue nevi can present clinically as blue, gray, brown, or black solitary nodules or plaques on the skin. Histologically, they represent collections of melanocytes and melanophages in the dermis. We presented here a case of a cellular blue nevus in a 20 years old man that presented as an enlarging blue-gray nodule on the right buttock. These cases can be challenging both clinically and histologically because malignant melanoma or malignant transformation of a blue nevus could be considered.

Key words

Cellular blue nevus, Buttock, Malignant melanoma.

Introduction

Blue nevi are usually seen on skin and rarely on oral mucosa, vagina or uterine cervix [1]. Three types of blue nevi are common blue nevus, cellular blue nevus and combined nevus which may be present at birth but usually appear around puberty. Common blue nevi can occur on any site whereas cellular blue nevi are often

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seen on dorsa of hands, feet, buttock or face [1, 2]. Progressive growth is rare and rarely malignant transformation can occur in cellular blue nevus. Blue nevi are seen as dome shaped; dark blue black 1-3 cm nodules. Histopathologically, cellular blue nevi in addition to deeply pigmented dendritic melanocytes reveal cellular islands of closely aggregated, large spindle shaped cells with ovoid nuclei and abundant melanin in the cytoplasm.

Case report

A 20 years old male patient presented with a blue black, painless nodule on the right buttock since 2 years. The patient denied any history of trauma. On examination, a dome shaped, non fluctuant, non tender, firm, mobile nodule was present on right buttock. Excision biopsy was done and sent for histopathological examination. Gross examination showed a skin covered, dome shaped nodule of 4x3 cm. Skin over the nodule was smooth. Cut section revealed a well circumscribed, horizontally oval, solid dark brown lesion in the dermis. **(Photo - 1)** Microscopic examination revealed a highly cellular tumor spanning the entire dermis with a pushing border at the base. **(Photo - 2)** Spindle shaped and dendritic melanocytes were arranged in fascicles and nodules admixed with thick collagen bundles. **(Photo - 3)** Mitotic activity was low and there were no necrosis or significant pleomorphism. The pigment was bleached upon reaction with hydrogen peroxide. **(Photo - 4)** So the final diagnosis was a benign cellular blue nevus.

Discussion

Blue nevi are thought to result from the ectopic deposition of melanocytes within the dermis. Normally in development, melanocytes migrate from the neural crest to the epidermis. However, with blue nevi there appear to be a premature arrest of migration resulting in the aberrant location of melanocytes. These dermal melanocytes absorb high wavelength light and reflect low wave length light, a phenomenon known as the Tyndall effect [1, 7]. Blue nevi are usually seen on skin and rarely on oral mucosa, vagina or uterine cervix [1]. Blue nevi are often grouped together with hamartomatous dermal dendritic melanocytic proliferations such as nevus of Ota, nevus of Ito and Mongolian spot [3, 4]. Three types of blue nevi are common blue nevus, cellular blue nevus and combined nevus which may be present at birth but usually appear around puberty.

Photo - 1: External surface shows dome shaped nodule. Cut section shows a well circumscribed nodule in the dermis.

The cellular blue nevus was first described in 1925 by Darier as a variant of melanoma but reclassified as a variant of blue nevus, which typically follows a benign course [5]. Cellular blue nevi typically are larger than common blue nevi, measuring 1-3 cm, while common blue nevi typically measure less than 1 cm. Cellular blue nevi are more likely to be elevated, have a smoother surface, and may be more aggressive in their capacity for malignant transformation. Cellular and common blue nevi also may be differentiated by their location. Common blue nevi frequently occur on the dorsum of the

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hands and feet, while cellular blue nevi most commonly occur on the buttocks or sacro-coccygeal region but also can be seen on the scalp, face and feet. Our patient presented with a 4 cm pigmented nodule on the right buttock [6].

Photo - 2: Skin with circumscribed nodule in the dermis. (H&E, 40X)

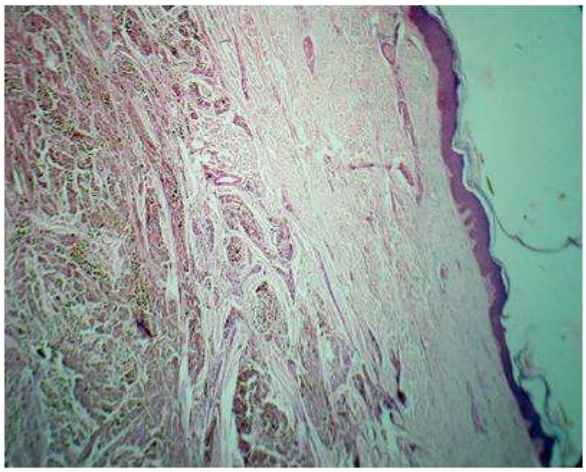
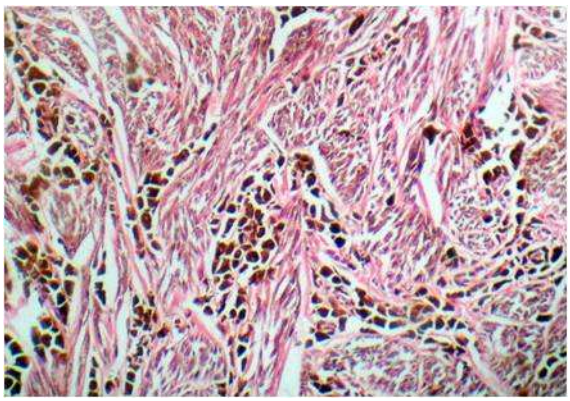
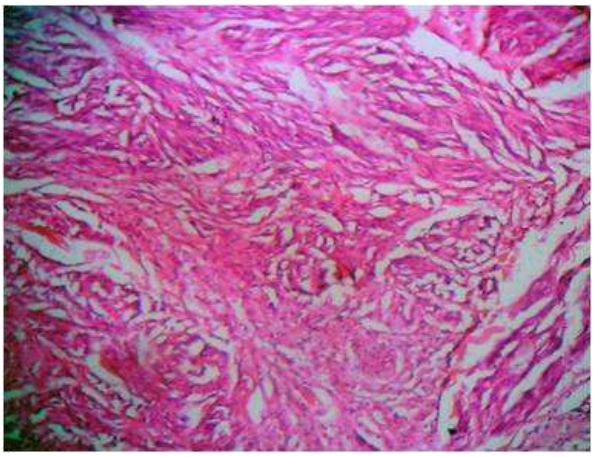


Photo - 3: Intersecting bundles of pigmented melanocytes admixed with collagen bundles. (H&E, 100X)



While the 3 clinically described variants of blue nevi may be distinguished histologically, other pathologic distinctions have been made among these categories of blue nevi. Common blue nevi are composed of pigmented dendritic melanocytes and melanophages in the reticular dermis, positioned with their long axis parallel to the epidermis. These lesions have an intact epidermis and epidermo- dermal junction. Cellular blue nevi, however consist of foci of oval, spindled, fusiform, or epithelioid melanocytes that occupy the deep dermis and extend along adnexal structures and neurovascular bundles into the subcutaneous tissue. The cells contain abundant pale cytoplasm containing little or no melanin [7].

Photo - 4: Bleach reaction revealed spindle cells with bland nuclear features. (H&E, 400X)



Melanomas can rarely arise in the background of cellular blue nevi. These malignant blue nevi typically raise clinical concerns because of their increasing size. Histologic evidence of malignant transformation is demonstrated by a sheet like growth pattern, necrosis, nuclear hyperchromasia, nuclear pleomorphism, prominent nucleoli, excessive and atypical mitotic activity and infiltrative borders. Malignant blue nevi follow an aggressive course and studies have documented mortality rates as high as 73% due to metastases. As a result, clinical guidelines recommend prompt excision of blue nevi to evaluate for malignant change in case of rapid growth, size greater than 2 cm or atypical clinical morphology.

In our patient, the nodule was completely excised and no histological evidence of

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malignant transformation was found. The patient is doing well 2 years after the excision of blue nevus.

Conclusion

Cases of cellular blue nevi can be challenging both clinically and histologically because they mimic malignant melanoma or malignant transformation of a blue nevus. Careful histopathological examination is the mainstay of diagnosis in such cases.

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