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Malignant Melanoma: A Comprehensive Case Review And The Role Of Fine-Needle Aspiration Cytology In Diagnosis

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Abstract:

Malignant melanoma is a formidable form of skin cancer with a rapidly increasing incidence globally. This article presents a case review of a 45-year-old male, Raj Kumar, diagnosed with malignant melanoma, underscoring the pivotal role of fine-needle aspiration cytology (FNAC) in the early detection and diagnosis of this aggressive malignancy. The case was presented to the Dermatology Outpatient Department (OPD) of Zonal Hospital, Dharamsala, and highlights the clinical and histopathological findings that led to the diagnosis.

Introduction:

Malignant melanoma originates from the uncontrolled proliferation of melanocytes and is notorious for its rapid progression and metastatic potential.[1] Malignant melanoma (MM) is a highly aggressive neoplasm with a high rate of metastasis.[2]The significance of early detection through dermatological examination and cytological techniques cannot be overstated in the context of a favourable prognosis.[3] The disease also affects younger patients, and the general worldwide incidence of malignant melanoma has increased 8-fold among young women and 4-fold among young men over the past 40 years, with an average age at diagnosis of 57 years.[4]

Case Presentation:

The patient, a 45-year-old male, presented with a notable nodular swelling on his right leg. The clinical photograph (Figure 1) depicted a lesion with heterogeneous pigmentation, characteristic of melanoma. FNAC was employed, revealing pathognomonic features of melanoma on Giemsa and Hematoxylin & Eosin (H&E) stained slides (Figures 2 and 3), which were instrumental in confirming the diagnosis.

Figure 1Clinical photograph: A nodular swelling noted on right leg

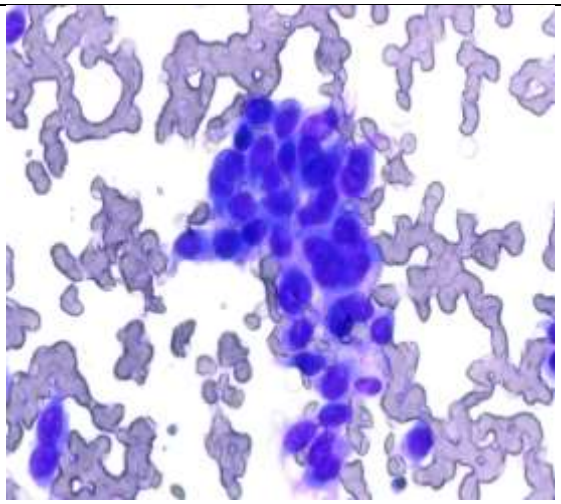

Figure 2Giemsa stain 400X: Round to spindle shaped cells seen in clusters and singly scattered having focal overlapping and high N:C ratio

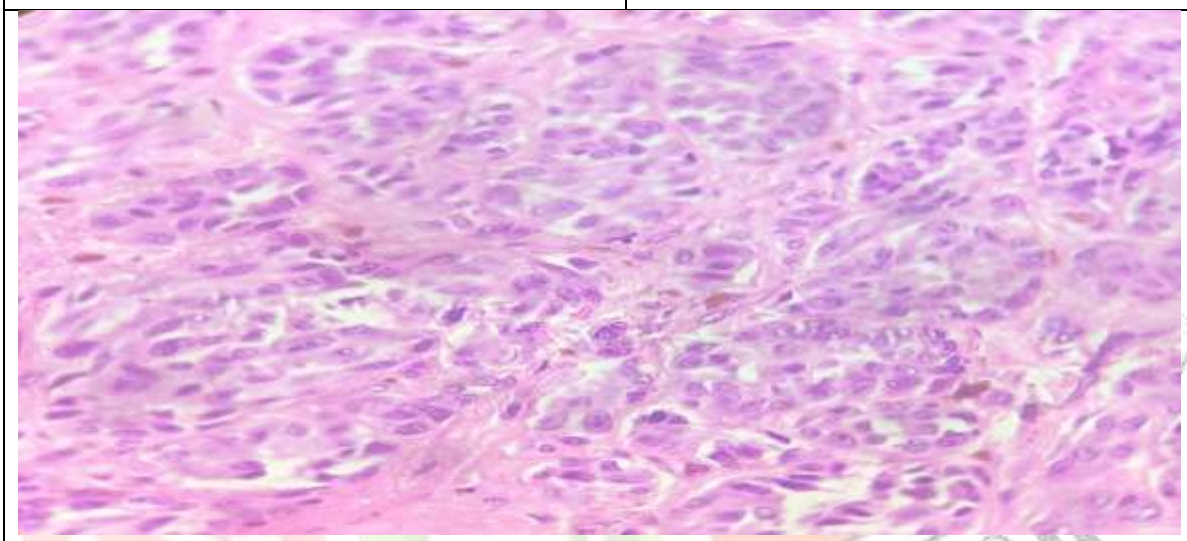

Figure 3 H&E stain 400X: Round to spindle shaped tumor cells are seen in nests separated by fibrous septae. Melanin pigment is also seen

Discussion:

The morphology of melanoma cells on cytological preparations, including the presence of melanin pigment and the high N:C ratio, provides a reliable diagnostic criterion. The case study delves into the diagnostic accuracy of FNAC, comparing it with other invasive techniques such as excisional biopsy.

Conclusion:

FNAC stands out as a minimally invasive, cost-effective, and rapid diagnostic tool in the armamentarium against malignant melanoma. This case study reaffirms the technique's diagnostic value and advocates for its wider use in clinical settings, especially where resources are limited.

Keywords: Malignant melanoma, FNAC, Dermatology, Early diagnosis, Case study

References:

1. Lindsey KG, Ingram C, Bergeron J, Yang J. Cytological diagnosis of metastatic malignant melanoma by fine-needle aspiration biopsy. Semin Diagn Pathol. 2016 Jul;33(4):198-203.
2. Reed KB, Brewer JD, Lohse CM, Bringe KE, Pruitt CN, Gibson LE. Increasing incidence of MM among young adults: an epidemiological study in Olmsted County, Minnesota. Mayo Clin Proc. 2012;87:328-334.
3. Alam K, Jain A, Aziz M, Misra A. FNA diagnosis of malignant melanoma-recurrent and metastatic disease. BMJ Case Rep. 2012 Nov 14;2012:bcr 2012006887.
4. Ali Z, Yousaf N, Larkin J. Melanoma epidemiology, biology and prognosis. EJC Suppl. 2013;11:81-91