

INTRODUCTION

Melanoma, the most serious skin cancer and the sixth most common cancer in North America, is associated with UV light radiation from sun exposure. The majority of melanomas develop on sun-exposed areas, but melanoma can also occur on non-sun exposed areas. This case illustrates the importance of doing a thorough physical exam, formulating an extensive differential diagnosis, and identifying possible cognitive biases that may lead to misdiagnosis.

CASE

A 58-year-old Hispanic man with diabetes, 40-year history of smoking, and 20-year work history in construction presented to the hospital with shortness of breath, weight loss, and a productive cough. He first developed the cough 5 months ago when visiting family in Mexico and failed multiple antibiotic courses for pneumonia over the last few months. He subsequently developed shortness of breath with no fevers, chills, nausea, vomiting, hemoptysis or night sweats. Due to a concern for tuberculosis, he was admitted and placed in isolation. His vital signs including oxygen saturation were within normal limits and his white count was elevated. The chest x-ray showed a prominence in the right hilum and right lower lobe opacities unchanged from the x-ray 1 month ago. TB was ruled out with negative MTB/FIB PCR and AFB cultures with smear. The chest CT showed a bulky mediastinal and right hilar adenopathy with mass-like consolidation in the right lower lobe with internal necrosis, highly suspicious for bronchogenic carcinoma. An EBUS biopsy showed a poorly differentiated carcinoma and the immunohistochemistry staining did not indicate a primary lesion.

Further history and physical exam revealed multiple penile lesions which were growing for the past several months. Skin biopsy confirmed the diagnosis of melanoma.



DISCUSSION

Early detection of melanoma is very important as prognosis depends on staging with cure being excision in early stages. Metastatic disease to brain and lung are suggestive of worse prognosis. Non-sun exposed melanoma is less treatment responsive due to differences in tumor biology leading to significantly lower 5 year survival rates of 69% in blacks compared to 83% in white population. Interestingly, Hispanic and black populations usually have melanomas on non-sun exposed areas, leading to later detection. Another possible reason for the delayed diagnosis in this patient includes cognitive biases such as representativeness restraint. Representative restraint bias involves looking for a prototypical manifestation of disease: “if it looks like a duck, quacks like a duck, then it is a duck.” However, relying on representativeness to make judgments can lead to misdiagnoses because the fact that something is more representative does not actually make it more likely. Therefore, one needs to be aware of and avoid cognition bias by creating an extensive differential diagnosis. Moreover, a thorough history and physical examination is essential to the diagnosis of any clinical scenario. Though the incidence of melanoma is less in non-white groups than in white groups, it is important to stay vigilant for suspicious lesions.

REFERENCES

- Cormier, J. N., Xing, Y., Ding, M., Lee, J. E., Mansfield, P. F., Gershenwald, J. E., . . . Du, X. L. (2006). Ethnic Differences Among Patients With Cutaneous Melanoma. *Archives of Internal Medicine*, 166(17), 1907. doi:10.1001/archinte.166.17.1907
- Croskerry, P. (2002). Achieving quality in clinical decision making: cognitive strategies and detection of bias. *Academic Emergency Medicine*, 9(11), 1184-1204.
- Eide, M. J., & Weinstock, M. A. (2005). Association of UV Index, Latitude, and Melanoma Incidence in Nonwhite Populations—US Surveillance, Epidemiology, and End Results (SEER) Program, 1992 to 2001. *Archives of Dermatology*, 141(4). doi:10.1001/archderm.141.4.477
- Epstein, F. H., Gilchrest, B. A., Eller, M. S., Geller, A. C., & Yaar, M. (1999). The Pathogenesis of Melanoma Induced by Ultraviolet Radiation. *New England Journal of Medicine*, 340(17), 1341-1348. doi:10.1056/nejm199904293401707
- Merimsky, O. (1998). Cigarette smoking and skin cancer. *Clinics in Dermatology*, 16(5), 585-588. doi:10.1016/s0738-081x(98)00043-1