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Causation and Melanoma Classification

While the clinical syndrome of melanoma was described during the nineteenth century, the pathology, aetiology and classification of the tumour remained controversial well into the twentieth. For instance, the debate about the type of tumour, its aetiology, classification and the relationship between pigmented moles and melanoma were common. This debate was widely regarded as settled by the 1960s, and we are now accustomed to think of melanoma as a single pathological and aetiological entity, with a number of possible clinical manifestations. A number of systems of classification are in common use. We may classify by site. So melanoma may occur on the skin (cutaneous), on the palms, soles and under the nails (acral) or on mucosal surfaces (mucosal). We may classify by tumour morphology – so tumours may be superficial spreading or nodular. Or we may classify by combinations of site and morphology.

There are problems for these unificatory classifications, however. For instance, certain types of tumour (acral in particular) have widely varying incidence by race. A more significant challenge arises from recent research findings, especially the discovery that various genetic mutations (notably c-KIT and BRAF) seem to correlate with particular sub-types of melanoma. Their aetiological role is supported by the therapeutic success of agents directed against them. This suggests that the conventional systems of classification are in trouble, and much ongoing work is directed toward finding new ways of differentiating melanoma types with the intention of improving clinical outcomes, which will potentially require the clinical management of melanoma subtypes as distinct diseases.

This raises exciting philosophical issues. For instance, what are the implications for systematic disease classification? Is there an optimum best single system for cases like these, or can we legitimately be more pluralistic, with possibly overlapping classificatory systems? How about the role of unification in this case? There is much debate to be found in the historical melanoma literature regarding the relative wisdom of either “lumping” and “splitting” as methodological approaches, with the repeated suggestion that strong forms of either strategies seemed likely to lead to difficulties.

There is much to discuss here. However, I will focus on one area in particular - causation – with two aims. First, to outline the historical role of causation in the development of melanoma classification. Second, to suggest that, owing to the exploitable features of causal relationships, an attempt at a causal classification may be the optimal strategy in this case.