THE DIAGNOSTIC CRITERIA OF MALIGNANT MELANOMA OF THE SKIN

By Robert P. Towers, M.D.
Department of Pathology, St. Vincent's Hospital, Dublin.

That the diagnosis of early malignant change in a pigmented naevus may be exceedingly difficult is well known to all morbid histologists. The task is made more difficult in some of those cases which occur about the age of puberty by the presence of well-marked junctional change and cellular activity, which in their more extreme forms constitute the interesting entity known as the juvenile melanoma, first publicised by Spitz in 1948. This review is the result of a study of the literature which was stimulated by seeing a case of malignant melanoma in a girl of 16 years. The lesion had been originally regarded as benign, yet it proved fatal with multiple metastases in little over a year. There has been much work on this problem published in transatlantic journals in recent years which does not seem to be as widely known as it might be. Many aspects of the problem have been considered by Spitz, Allen, and Allen and Spitz and their papers may be consulted for a fuller exposition of the subject. Allen and Spitz have reviewed the diagnostic criteria, basing their conclusions on a study of a series of 934 cases, one of the largest collections ever assembled. Other interesting and valuable information may be provided by the classic papers of Dawson and Lund and Stobbe, as well as in the works of Nicholson, Willis and many others. Lastly, this review is not concerned with the vexed problem of the histogenesis of pigmented naevi and malignant melanomas, a personal belief in the epidermal theory of origin being quite irrelevant to the matter under discussion.

Before considering the histological features indicative of malignancy, there are factors of sex, age, site and race to be taken into account as well as clinical appearances. Most authors consider that malignant melanoma is about equally common in man and woman, Wright finding that 45 per cent. of 109 cases were in males, while Allen and Spitz found 468 males and 466 females among their cases. Personal experience of a plastic unit showed a slight preponderance of females but this could largely be explained by excision for cosmetic reasons. The figures given by Allen and Spitz provide clear evidence that the condition has a better prognosis in females than in males; Wright finding that 45 per cent. of 109 cases were in males, while Allen and Spitz found 468 males and 466 females among their cases. Personal experience of a plastic unit showed a slight preponderance of females but this could largely be explained by excision for cosmetic reasons. The figures given by Allen and Spitz provide clear evidence that the condition has a better prognosis in females than in males; Wright did not divide his cases. With regard to age, to Spitz must go the credit for separating the juvenile from the other pigmented naevi of childhood, and the recognition that this lesion, histologically malignant, is in fact clinically benign, was an important step. It is established that malignant melanoma is excessively rare before puberty, Truax and Page stating that there are only 5 proven fatal cases on record. For the diagnosis to be acceptable, it must not occur shortly after birth, to exclude transplacental transmission or hormonal stimulation arising in the mother, and there must not be precocious sexual development from abnormal endocrine stimulation. It has also been noted that the malignancy of some of these cases appears to be of low grade. In support of
this the case of Webster, Stevenson and Stout may be mentioned. A girl of 8 years had a local resection of a pigmented lesion on the shoulder and of subsequent metastases in skin and cervical lymph nodes, but she survived at least 12 years without further recurrence. The case reported by Spitz of a 9-year-old girl with a pigmented lesion on the knee and early metastases in the inguinal lymph-nodes was followed up by Truax and Page for 5½ years without further recurrence. One of the most cogent reasons for recognising that a lesion is in fact a juvenile melanoma is that thereby the patient is saved unnecessarily radical surgery, with the attendant chance of accumulating false cure rates. It is also not generally recognised that lesions identical with the juvenile melanoma may occur after puberty (the oldest case reported by Allen and Spitz being a man aged 42), and the diagnosis carries just as good a prognosis in those older cases as it does in prepubertal life. Enos and Holmes have commented on the low grade of clinical malignancy of melanomas in elderly negroes in a small series from Central America, and have reiterated the opinion that endocrine stimulation absent at the extremes of life may be responsible for the apparent immunity to this notoriously fatal disease which has been noted at these ages. Several authors have observed rapid growth after the menarche. Spitz obtained a definite history of a great increase in size of pigmented lesions occurring only 3 or 4 months after the onset of menstruation, which were subsequently shown to be malignant. Generally speaking, most cases occur between the ages of 30 and 80, with the highest incidence in the fifth decade, but prepubertal life is the only period when they are excessively rare.

That squamous and basal-cell carcinomas are more common among white people than among negroes is recognised, and there is at least an impression that malignant melanoma follows suit. There were only 10 negroes in the series of 934 cases reported by Allen and Spitz, but negroes formed only 2.8 per cent. of the total admissions. Enos and Holmes in Panama found only 16 cases recorded locally in the years 1904-50, during which period 18,241 autopsies were performed and 54,362 surgical specimens examined. Nine of these cases were in negroes, which in view of the relative numbers of whites and negroes in the Canal Zone makes melanoma much more common among the whites there. Naevi in certain sites may be regarded with more suspicion than those occurring elsewhere; among these may be mentioned the eye (with which we are not concerned), soles of the feet, toes, palms, fingers, scrotum, vulva, subungual regions and those parts of the trunk which are liable to chronic irritation. Intradermal naevi, which do not undergo malignant change, do not occur on or are exceedingly rare on the soles, palms and genitalia, so that a pigmented mole in any of these sites should be regarded as a junctional naevus, if not a malignant melanoma, and excised. All the cases reported by Enos and Holmes were on the feet, and the frequency with which moles on the feet of negroes become malignant has been mentioned also by Hewer. Generally speaking, melanomas are most likely to arise in the trunk, followed by the head and neck with the extremities, excepting the feet, a poor third. Cunningham in a review of 960 cases found, however, that 27 per cent. occurred on the lower limb.