CASE REPORTS

Lid melanoma and parkinsonism

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Abstract

This is a case report of a patient with parkinsonism on levodopa therapy who developed a lid margin melanoma. The possible association is discussed.

Case report

A 73-year-old Caucasian woman was referred because of raised intraocular pressures. She was more concerned by an enlarging pigmented lid margin lesion which had been present for 5 years.

The patient had been treated for parkinsonism. At the time of presentation she was being treated with: Sinemet (carbidopa 10 mg+levodopa 100 mg)×6 since 1979, ophenadine 300 mg, Selegiline 5 mg twice daily, quinine sulphate 200 mg at night, piroxicam 10 mg twice daily, and temazepam 20 mg at night.

Examination revealed a pigmented slightly raised skin lesion on the left lower lid measuring 10 mm×5 mm (Fig 1). It was darkly pigmented with less pigmented edges. There was no regional lymphadenopathy.

A full thickness lid excision biopsy with 2 mm clear margins was performed and the defect repaired by direct closure (Fig 2).

Histology (Fig 3) revealed a superficial spreading malignant melanoma. Most of it was still in situ but in one area there was invasion of upper dermis (level 2) with a Breslow thickness of 0.3 mm. The biopsy margins were tumour free.

Discussion

Levodopa has been in extensive use for parkinsonism since the 1960s. Skibba¹ first reported a case of malignant melanoma arising in

Figure 2 Three months postoperative appearance following 14 mm horizontal full thickness lid excision and primary direct closure of the defect.

a patient on levodopa and raised the possibility of a causal relationship between levodopa and malignant melanoma. This was followed by sporadic reports^{2,3,4,5,6} of melanoma arising de novo or in pre-existing naevi in patients on long term levodopa therapy. Rampen⁷ reported three new cases and reviewed from 16 cases already present in the literature.

This is another report of a patient developing malignant melanoma while on long term levodopa therapy.

Melanocytes have the specialised tyrosinase enzyme system that converts levodopa into melanin. Wick *et al*⁸ showed that in the presence of dopa decarboxylase inhibitor, levodopa, is selectively incorporated into melanocytes. This raised the possibility of levodopa being a carcinogen for melanocytes. Rampen has argued against this saying that the presence of excess of substrate probably leads to enhancement of the

Figure 1 Pigmented enlarging left lower lid lesion.

Figure 3 Histological section showing invasion of the upper dermis by melanoma cells (pigmented brown) (H & E ×60 magnification).

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enzyme systems related to melanin synthesis, that is cell differentiation. This may reduce the reproductive rate and hence the malignant potential of melanocytes.

Wick *et al* have demonstrated that levodopa may be toxic to melanoma cells. This however does not exclude levodopa from being a carcinogen since long term exposure to cytotoxic agents may in itself increase the risk of neoplasm development.

However a carcinogenic role for levodopa remains questionable because of the scarcity of reported cases. Sober and Wick¹⁰ in their prospective study of 1099 cutaneous melanoma patients found only one patient who was on levodopa.

In conclusion the link between levodopa and melanoma remains tenuous but because the possibility has been raised there remains a need for vigilance.

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