Melanotic Meningioma

Case Report

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Melanin-containing tumors of the central nervous system are encountered only occasionally in neurosurgical operations, Metastases from malignant melanoma make up the majority of these lesions. Primary melanoma of the leptomeninges may produce similar tumors but represents a more unusual condition. To this list may be added the rare melanotic meningioma which is almost a curiosity for only seven cases have been recorded. In this paper we report an additional case and discuss this benign tumor in relation to its highly malignant counterparts.

Case Report

This 57-year-old, white man was admitted to the UCLA Hospital because of progressive weakness and hypesthesia in the legs.

Pain in the spine and left leg had been noted 5 years before admission; with symptomatic treatment it had subsided. However, 18 months before admission the patient noted hypesthesia below both knees. Shortly thereafter, while running, he experienced an attack when he was momentarily unaware of his body below the umbilicus; this loss of sensation caused a fall and right tibial fracture. After 6 months of immobilization, disproportionate weakness and numbness of the right leg were noted. Intermittent rectal incontinence began 6 months before admission, followed by urinary hesitancy 3 months later. One month before admission there was a definite increase in weakness of the right leg and hypesthesia of the left leg. There was no history of any type of skin tumor.

Examination. No spinal tenderness or peripheral or ocular melanotic lesions could be found. Weakness in the distal musculature and reflex hyperactivity of the right leg were confirmed. The left analcuteaneous reflex was absent. Hypalgesia below T-6 on the left, mild impairment of the light touch sensation in both legs, and absence of position sense in the right foot were noted. The clinical impression was that of a mass lesion affecting the thoracic spinal cord. Plain x-rays were normal, but Pantopaque myelography revealed an intradural, extramedullary mass on the right at the T-4 spinal cord level (Fig. 1). At this time the spinal fluid was clear, with a protein of 87 mg%.

Operation. At laminectomy a glistening black tumor was found dorsolateral to the cord on the right. It was dumbbell-shaped, extruding through the intervertebral foramen into the paravertebral space. The intradural portion was 2 cm in diameter, encapsulated, and attached to the dura. This portion was totally removed. The extradural and extraforaminal portions were somewhat larger.

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Fig. 1. Pantopaque myelography demonstrates an intradural tumor on the right at the T3-4 level. Left: the block of contrast flow is partial. Right: the upper extent of the tumor is seen to be near the T2-3 interspace.
and removed by curettage. No additional tumors were seen.

The patient's postoperative course was smooth, and his neurological status improved rapidly. He has been followed at regular intervals and is well at 1 year postoperatively.

**Histological Examination.** On cut section the tumor was soft, black, and surrounded by a firm, fibrous capsule. The tumor was cellular and well vascularized. Golden brown, granular pigment was scattered throughout, being so prominent in some areas as to obscure the cellular details. Multiple areas of punctate calcification were present. There was a loose architectural pattern to the tumor cells which were arranged in a streaming fibrous pattern with occasional loose whorls (Fig. 2 left). In some areas the cells lacked definite arrangement and appeared as a syncitium. The oval nuclei became elongated when involved in the fibrous configurations (Fig. 2 right). There was moderate nuclear anisomorphism but no indication of dedifferentiation. The nuclei contained a fine chromatin pattern without conspicuous nucleoli; often the nuclei were empty, giving a vacuolar appearance. No mitoses were seen. Special stains confirmed the presence of melanin and absence of iron. The histological diagnosis was melanotic meningioma.

**Discussion**

The differential diagnosis of melanotic lesions of the nervous system includes secondary malignant melanoma, primary melanoma of the meninges, and pigmented meningioma. Secondary malignant melanomas frequently involve the brain in the metastatic phase of the disease. Several excellent reviews of the neuropathological findings have been presented. The histological changes are those of an obviously malignant neoplasm, usually with a high mitotic index.

One form of secondary melanoma deserves special mention because of its peculiar histology. Malignant melanoma of the eye may assume varied histologic patterns; Cal-lender\(^4\) has presented their appearances very

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*Fig. 2. Left:* Low-power photomicrograph demonstrates the flowing, fibrous pattern of the tumor. Melanin pigment is seen occurring in a focal fashion with non-pigmented areas interspersed. H&E., ×100. *Right:* Higher power photomicrograph shows elongated, oval nuclei arranged in streaming configurations typical of fibrous meningiomas. Melanin pigment is prominent, occurring in particles of various sizes and shapes. H&E., ×400.