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Case A

This 37-year-old housewife with von Recklinghausen's disease had a neurofibrosarcoma excised from the left thigh. She subsequently developed multiple pulmonary metastases which were treated with a number of cancer chemotherapeutic agents with little response. Her final admission, 17 months later, was because of increasing respiratory distress and fever. Physical findings included a large head with frontal bossing. Pupils were meiotic. There were many cafe au lait spots over the entire body and numerous cutaneous nodules over the trunk. No neurological findings were noted. The patient was thought to have pneumonitis superimposed on pulmonary metastases and was treated with antibiotics and chemotherapy. She received a low dose of methotrexate followed by citrovorum factor following which she developed severe symptoms of methotrexate toxicity including renal and hepatic failure, stomatitis and pancytopenia. She became progressively obtunded, developed bilateral Babinski signs and supraventricular tachycardia and died. Autopsy findings: Metastatic sarcoma in both lungs, and benign neurofibromas of the skin. Neuropathological findings: Striking brown discoloration of the globus pallidus and substantia nigra, bilaterally with numerous spheroids and abundant pigment.

Case B

This 52-year-old white man was admitted to University Hospitals because of dyspnea on exertion and shortness of breath. He had had two episodes of myocardial infarction and intermittent chest pain for approximately three years. He had known von Recklinghausen's syndrome with numerous cutaneous fibromata. A pheochromocytoma was removed at the Mayo Clinic. Physical examination was not remarkable except for a grade II systolic heart murmur and hepatomegaly. On the third day of hospitalization, the patient had the onset of a slow irregular heart rate leading to ventricular fibrillation from which he could not be resuscitated. Autopsy findings: Old and possibly recent myocardial infarction; severe atherosclerosis with complete occlusion of right and left coronary arteries; congestion of the lungs and spleen. Neuropathological findings: Mild atherosclerosis of the cerebral vessels, prominent pigmentation and degeneration of the reticular zone of the substantia nigra, bilaterally, with numerous spheroids and abundant pigment deposition. Similar but milder changes were noted in the globus pallidus on histological examination. Heterotopic glial tissue was noted in the cerebellar leptomeninges.

Slides Submitted: Section of midbrain from case A (H & E)  
Section of substantia nigra from case B {unstained}

Points for Discussion:

1. Nature of the pigment
2. Relation of this degeneration to von Recklinghausen's disease
3. Relation to Hallervorden-Spatz disease, if any