and Neuradiology, Stanford University School of Medicine, California and the Lawrence Berkeley Laboratory, University of California. Ages at the time of treatment were from 9 to 69 years (mean, 33). Presenting symptoms were hemorrhage (60 patients), neurologic deficits (11), seizures (35), and headaches (40). Three years after radiation treatment the rate of complete obliteration of the lesions as detected angiographically was 100% for smaller lesions and 70% for those larger than 25 cm^3. Major neurologic complications occurred in ten patients (12%). Seizures and headaches were less severe in the patients who suffered from these initially. The authors concluded that heavy charged particle radiation is effective for symptomatic surgically inaccessible intracranial AV malformations. Disadvantages of this therapy include the long delay in obliteration of the vascular lesion and a small risk of serious neurologic complications (Steinberg G K et al. N Engl J Med July 12, 1990; 323:96-101).

COMMENT: In an editorial comment by Heros R C and Korosue K of the University of Minnesota, Minneapolis, it is pointed out that the rate of serious morbidity from a hemorrhage from an arteriovenous malformation is about 30% and the mortality rate is about 10%. Not to treat is an unattractive choice for younger patients who will remain at risk for the rest of their lives. In considering the results of radiation therapy for AV malformations, the morbidity and mortality resulting from hemorrhage after treatment must be considered, particularly in comparing irradiation with surgical excision, a treatment method which eliminates the risk of hemorrhage. The delayed adverse effects of radiation on nervous tissue may limit this form of therapy in children. Only patients with previous hemorrhage, severe neurologic deficits, uncontrolled seizures, or disabling headaches were accepted in the author's protocol which included mainly adults.

PERIPHERAL NERVE DISEASES

PLASMAPHERESIS IN CHILDHOOD GUILLAIN-BARRE SYNDROME

The role of plasmapheresis in childhood Guillain-Barre syndrome was examined by retrospective analysis of children admitted to the Children's Hospital of Philadelphia, University of Pennsylvania School of Medicine, Philadelphia, PA. Of 23 patients included in the study nine had been treated with plasmapheresis and 14 served as control subjects. Therapeutic plasma exchanges were performed on an alternate day schedule. The mean age was 8.8 years and the duration of the illness prior to admission was 5.9 days. The plasmapheresis treated group recovered to the stage of independent ambulation significantly faster than the control group, 24 versus 60 days, respectively. By six months after discharge all children in both groups were ambulating independently. Plasmapheresis diminished morbidity by shortening the interval until recovery of independent ambulation, but this treatment

cannot be routinely advocated for all patients until well designed prospective studies comparing plasmapheresis and IV gamma globulin have been performed in children (Epstein M A, Sladky, J T. The role of plasmapheresis in childhood Guillain-Barre Syndrome. Ann Neurol July 1990; 28:65-69).

COMMENT: The proceedings of a symposium on "Autoimmune Neuropathies: Guillain-Barre Syndrome" sponsored by the National Institutes of Health are published in the Annals of Neurology Supplement to Volume 27 1990. Plasmapheresis was the accepted therapy for Guillain-Barre syndrome, particularly in adults, but other approaches are being explored. One is the infusion of immunoglobulins and another is the use of high dose steroids early in the disease. Controlled studies are in progress, but results are not yet available. (McKhann GM. Guillain-Barre Syndrome: Clinical and therapeutic observations. Ann Neurol 1990; 27 (Supplement): S13-S16).

HEREDITARY MOTOR AND SENSORY NEUROPATHIES

Transcranial magnetic brain stimulation was used to study central motor conduction (CMCT) to small hand muscles in patients with peroneal muscular atrophy and hereditary spastic paraplegia at the National Hospital and Institute of Neurology, Queen Square and the Department of Neurological Science, Royal Free Hospital, London, UK. Proximal motor roots were excited at the intervertebral foramina, the stimulating cathode placed at C7-T1 and the anode 6 centimeters laterally on the ipsilateral side. Central motor conduction time was estimated by subtracting the latency of this potential from that of the response to brain stimuli. CMCT was normal in HSMN I, HSMN II, and HSP. In patients with HSMN I with pyramidal signs, central motor conduction time was greatly prolonged bilaterally. The results reflected an involvement of the central motor pathways. (Claus D et al. Hereditary motor and sensory neuropathies and hereditary spastic paraplegia: A magnetic stimulation study. Ann Neurol July 1990; 28:43-49).

COMMENT: Dyck PJ and Lambert EH (Arch Neurol 1968; 18:603-625) subdivided patients with HSMN into two main groups: HSMN I with demyelination in peripheral nerves and HSMN II without demyelination. Patients with HSMN who had pyramidal signs were designated type V. Pyramidal signs may occur as a regular feature in some families but do not reflect disease severity. The authors of the above study found no correlation between the degree of general disability and the occurrence of abnormal CMCT.