Abstracts

AB-1203-73
Localization of Intraventricular Arteriovenous Malformations by Ventriculography Combined With Stereoscopic Arteriography. Technical Note—Gerber AM, Karkazis G, Mullan S (Division of Neurological Surgery and Department of Radiology, University of Chicago and the Pritzker School of Medicine, Chicago, Illinois)—J Neurosurg 38:249-250 (Feb) 1973*

Two cases are presented to illustrate the value of air ventriculography combined with stereoscopic arteriography in locating intraventricular vascular malformations and arterial aneurysms. This procedure permits the neurosurgeon to plan a more direct approach to the lesion.

AB-1204-73

Spontaneous and evoked electrical activity from the basal and medial areas of the brain not accessible in routine electroencephalography (EEG) has been recorded with single and bipolar electrodes in intracranial vessels of baboons. The report also demonstrates intracranial intravascular EEG recording in man.

AB-1205-73
Experimental Cerebral Revascularization With Autogenous Grafts—Maroon JC (Division of Neurosurgery, University of Pittsburgh, Pittsburgh, Pennsylvania), Dominaghy RMP—J Neurosurg 38:172-179 (Feb) 1973*

Autogenous saphenous arterial or venous grafts were anastomosed between the common carotid and the middle cerebral artery in 14 dogs with the aid of microsuturing techniques and a new type of microtourniquet. Four of the six saphenous artery grafts were patent when studied angiographically 4 to 70 days postoperatively. Three of the eight venous grafts were patent when studied angiographically 4 to 70 days postoperatively. The patency rate with arterial grafts was better than that with venous grafts because of the ease of handling due to the thicker wall, the reduced tendency toward redundancy and kinking, and the better graft-to-host-artery ratio. Obvious technical factors were found that accounted for all graft failures. Faulty suture placement; failure to remove an elliptical segment of the host artery; twisting, angulation and kinking of vein grafts; intimal flaps or adventitia caught in the suture line; and cerebral laceration and subsequent infarction were all causes of failure. Successful cerebral revascularization occurred only when these technical factors were surmounted and a satisfactory graft-to-host-artery ratio obtained.

AB-1206-73
Laboratory Experience With a Magnetically Guided Intravascular Catheter System—Cares HL (Neurosurgical Service, Massachusetts General Hospital, Boston, Massachusetts 02114), Hale JR, Montgomery DB, Richter HA, Sweet WH—J Neurosurg 38:145-154 (Feb) 1973*

An improved magnetically guided intravascular catheter system in dogs is described as safe, requiring little attention, allowing the application of flow surges to aid propulsion of the tip, and providing for angiography of good quality. Current concepts of the relationship of magnetic and flow guidance are discussed. The uses of the system demonstrated include selective angiography, perfusion of isobutyl-2-cyanoacrylate into experimental arteriovenous fistulas, and perfusion of microparticulate iron suspensions into experimental aneurysms. A unique detachable macroballoon that may function as a reversible tethered embolus is reported.

AB-1207-73
Regional Cerebral Blood Flow, Intracranial Pressure, and Brain Metabolism in Comatose Patients—Bruce DA, Lang-fitt TW (Division of Neurosurgery, Hospital of the University of Pennsylvania, Philadelphia, Pennsylvania 19104), Miller JD, Schutz H, Vapalahti MP, Stanek A, Goldberg HI—J Neurosurg 38:131-144 (Feb) 1973*

Cerebral blood flow (CBF), intracranial pressure (ICP), brain metabolism (CMRO₂), systemic arterial pressure (SAP), and arterial blood gases were measured in comatose patients, most of whom had suffered a head injury. The patients were divided into two groups according to whether a mass lesion was or was not demonstrated by bilateral carotid angiography. In the majority of patients a control run measuring regional cerebral blood flow (rCBF) was followed by a test of cerebral autoregulation; hypertonic mannitol was then administered. During the control period there was marked and unpredictable variability in all of the parameters recorded. There was no correlation between ICP or CBF and neurological status or CMRO₂ except at very high levels of ICP. Autoregulation was intact in some patients and defective in others, and there was no correlation between the status of autoregulation on the one hand and CBF or survival on the other. Mannitol increased CBF in nearly all patients, to twice the control value in a few, and CMRO₂ increased with CBF in several patients. The change in CBF was independent of the initial ICP or the response of ICP to mannitol. Thus, the relationship of these parameters was unpredictable in acutely brain-damaged patients; the status of autoregulation also was unpredictable.
ABSTRACTS

AB-1208-73
Fibrinolytic Activity of the Cerebrospinal Fluid After Subarachnoid Haemorrhage—Tovli D, Nilsson IM, Thulin C-A (Neurosurgical Department of Umea Hospital, University of Umea, and the Coagulation Laboratory, Malmö Hospital, University of Lund, Sweden) Acta Neurol Scand 49:1-9, 1973

The fibrinolytic activity of peripheral blood and cerebrospinal fluid was estimated by the fibrin plate method and by assays for fibrin degradation products in 11 patients with proved aneurysmal subarachnoid hemorrhage. Five of the patients were treated conservatively; the remaining six, surgically. An increase in the fibrinolytic activity of the cerebrospinal fluid, as judged from the appearance of fibrin degradation products, occurred in all the patients on the third day after the initial hemorrhage. This fibrinolytic activity tended to decrease the first three weeks after the onset of the hemorrhage in seven patients. In the remaining four it was still elevated at the end of the third week. In one of these patients hemorrhage recurred. Demonstration of high concentrations of fibrin degradation products in cerebrospinal fluid after surgery on the brain suggests the release of tissue activators from the damaged brain during the operation. Premature dissolution of the hemostatic plug at the site of the ruptured intracranial aneurysm therefore might be responsible for the rebleeding. Hence the use of antifibrinolytic drugs may be useful in the management of patients with subarachnoid hemorrhage.

AB-1209-73
Use of an Ergot Preparation (Hydergine) in the Convalescent Phase of Stroke—Bochner F, Eadie MJ, Tyrer JH (Medical Professorial Unit of Queensland University, Royal Brisbane Hospital, Brisbane, Australia) J Amer Geriat Soc 21:10-17, 1973

Hydergine (1 mg three times daily) or placebo was administered orally to geriatric patients who were convalescing from stroke. Twenty-one patients were studied in a 12-week double-blind trial, and 15 in a 12-week double-blind crossover study. Regular assessments were made of symptomatology, physical, mental and psychological status and recovery from paralysis. Statistical analyses of the results of both studies showed that there was no significant difference between the effects of Hydergine and of placebo. The possible relationship between cerebral function, cerebral arteriosclerosis and cerebral blood flow is discussed.

AB-1210-73
The Earliest Alterations in Rat Neurons and Astrocytes After Anoxia-Ischaemia—Brown AW (Medical Research Council Laboratories, Medical Research Council Neuropsychiatry Unit, Carshalton, Surrey, Great Britain) Brierley JB Acta Neuropath (Berlin) 23:9-22, 1973 (Springer-Verlag, publisher)

A combined light and electron microscope study was made of the alterations occurring in the neurons and astrocytes of the neocortex and hippocampus of rats killed immediately after intermittent exposures to nitrogen of five and 15 minutes. Blood flow in the right common carotid artery had previously been interrupted by application of an artery clamp which was removed after the exposure to nitrogen and the animals killed by perfusion-fixation with glutaraldehyde. Microvacuolation (MV), the earliest stage of anoxic-ischemic neuronal damage, was observed in the ipsilateral neocortex and hippocampus of both groups and ischemic cell change (ICC) bilaterally in the neocortex of animals exposed for 15 minutes. Ultrastructural examination showed the microvacuoles to be swollen mitochondria.

AB-1211-73
Aspirin as an Antiplatelet Agent: Template Bleeding Time as a Monitor of Therapy—Mielke CH Jr (Research Institute of Laboratory Medicine, Pacific Medical Center, San Francisco, California 94115), Ramos JC, Brinten AFH Amer J Clin Path 59:236-242 (Feb) 1973

Acetylsalicylic acid (aspirin) alters platelet function, causing impairment of small vessel hemostasis and prolongation of the bleeding time. This effect may exacerbate hemorrhage and also suggests a role for this drug as an antithrombotic agent. Normal subjects were treated with different doses of aspirin for periods of two weeks. As little as 325 mg of acetylsalicylic acid each day resulted in a stable prolongation of the template bleeding time. Two normal subjects received 325 mg daily for three months. Their bleeding times remained prolonged throughout this period, correlating with the abnormality of platelet aggregation characteristic of aspirin ingestion. The template bleeding time is a simple technic for monitoring the effect of aspirin on platelet function and is an aid for further research in therapy for thrombotic conditions.

AB-1212-73

In a period of three years, 26 cases of cerebrovascular incidents were observed during administration of oral contraceptives. The clinical manifestations were present predominantly as hemiparesis, partly as migraine accompagnee, also as hemihypesthesia, migraine, seizures, as the clinical symptoms of a subarachnoid hemorrhage.
hemorrhage, and in one case as visual disturbances. Death occurred in one case through sinus thrombosis.

Carotid angiography was carried out in 25 of the 26 patients. A connection between the thromboembolic incidents and the taking of oral contraceptives can be assumed because of the observations of the subsequent course. Twenty of the 26 cases recovered or improved after discontinuing the drugs.

**AB-1213-73**


The average annual incidence rate for first episodes of transient cerebral ischemic attack (TIA) among the residents of Rochester, Minnesota was 3.1/100,000 population for the period 1955 through 1969. The rates increased with age to the oldest age group. There was a marked increase in the number of strokes that occurred in persons with TIA as compared to persons of the same age in the population of Rochester. Less than 10% of persons in the community who had their first cerebral infarct had a preceding TIA. Cardiac disease is the most frequent cause of death among persons with TIA.

**AB-1214-73**

**Relation Between Bleeding Time and Platelet Connective Tissue Reaction After Aspirin**—Hirsh J, Street D, Cade JF, Amy H (Department of Laboratory Medicine, St. Joseph's Hospital, and the Departments of Pathology and Medicine, McMaster University, Hamilton, Ontario, Canada)—Blood 41:369-377 (Mar) 1973*

Aspirin prolongs the bleeding time in normal subjects and inhibits platelet release and aggregation with connective tissue and other biological agents. We have investigated one of the possible mechanisms by which aspirin prolongs the bleeding time by comparing the effects of aspirin and placebo on the bleeding time and platelet aggregation with connective tissue in normal volunteers. Two separate studies were performed. Both showed prolongation of the bleeding time and inhibition of the platelet connective tissue reaction after aspirin, but only the second study showed a significant correlation between these changes. Both studies are reported in detail because the discrepancy between them illustrates some important principles that require consideration when relating the effects of drugs on platelet function in vitro to their effects in vivo. The findings suggest that when particular care is taken to standardize the measurement of the platelet connective tissue reaction in terms of the stimulus used, subject variability, and analysis of results, the prolonged bleeding time after aspirin can be shown to be related to the defect produced in the platelet connective tissue reaction.

**AB-1215-73**

**Massive Intracranial Hemorrhage in Sickle-Cell Anemia**—Falter ML (450 Clarkson Avenue, Brooklyn, New York), Sutton AL, Robinson MG—Amer J Dis Child 125:415-416 (Mar) 1973*

A six and one-half-year-old black boy known to have sickle-cell anemia died shortly after developing sudden lethargy which progressed into unconsciousness. Bloodless spinal fluid suggested a diagnosis of cerebral thrombosis, but the postmortem examination revealed a massive subdural hemorrhage to be the cause of death. Although it is a rare complication, massive intracranial hemorrhage should be considered in the differential diagnosis in a child with sickle-cell anemia who shows acute neurological signs.

**AB-1216-73**

**Effect of Aspirin on Brachial Artery Occlusion Following Brachial Arteriogram for Coronary Arteriography**—Hynes KM, Gau GT, Rutherford BD, Kazmier FJ, Frye RL (Section of Publications, Mayo Clinic, Rochester, Minnesota 55901)—Circulation 47:554-557 (Mar) 1973*

The effect of oral aspirin in doses known to influence in vitro platelet aggregation was evaluated in patients undergoing brachial artery catheterization. Neither arterial thrombus formation nor pulse reduction was affected in patients given aspirin when compared to controls. Aspirin in small doses does not decrease the incidence of vascular occlusion after brachial artery catheterization.

**AB-1217-73**

**Prosthetic Replacement of the Mitral Valve, Continuing Assessments of the 100 Patients Operated Upon During 1961-1965**—Levine FH, Copeland JG, Morrow AG (Clinic of Surgery, National Heart and Lung Institute, Bethesda, Maryland 20014)—Circulation 47:518-526 (Mar) 1973*

The late postoperative results of isolated mitral valve replacement in 100 patients operated upon from 1961 to 1965 are summarized. Eighty-three of the patients survived operation, and 52 are still alive. Seventy-six percent of patients surviving operation were alive five years later, and 64% after eight years. Of the entire group of 100 patients operated upon, 63% were alive after five years and 51% after eight years. Sixteen of the 31 late deaths were definitely attributable to the presence of the prosthesis: systemic arterial emboli (eight patients), valve thrombosis (two), perivalvular leak (one), ball variance (two), endocarditis (two), and intracerebral hemorrhage due to anticoagulants (one). Congestive heart failure was the primary cause of death in the remaining patients. Predominance of either stenosis or regurgitation preoperatively did not significantly alter late survival, nor did coexistent tricuspid regurgitation. High operative and early postoperative mortality was seen in patients with associated aortic regurgitation. Patients who were in class IV preoperatively had a higher mortality (50% alive at five years) than those in class III (70% alive), but no difference in mortality was noted between patients who preoperatively had normal sinus rhythm and those who had atrial fibrillation. Forty-nine percent of patients have sustained systemic emboli, and these have occurred throughout the postoperative period. Currently, 50% of patients are class I, 42% are class II,
ABSTRACTS

and only 8% are class III. Prosthetic mitral valve replacement has provided gratifying long-term symptomatic improvement in the majority of patients.

**AB-1218-73**
Progression of Coronary Artery Disease. A Clinical Arteriographic Study—Bemis CE, Gorlin R (Peter Bent Brigham Hospital, Boston Massachusetts 62115), Kaswan HG, Herman MV—Circulation 47:455-464 (Mar) 1973*

Significant progression of coronary artery disease was seen in 52% of subjects studied by selective cinearteriography at intervals between 2 and 75 months (average 23.8). Subsequent progression, although confined to proximal areas, was independent of overall severity of initial disease or previous disease at the site of progression and occurred frequently in previously normal vessels. Plasma lipid abnormalities and myocardial lactate production at the time of the initial study were significantly associated with subsequent arteriographic progression. Similarly abnormal glucose tolerance was seen more frequently in patients exhibiting progression than in those who did not. The progression occurring in patients with lipid abnormalities was more severe and more widespread than in other patients, and apparent interval reduction in lipid values did not influence the ultimate course of the atheromatous process. Myocardial infarction was almost invariably associated with progression. Collateral coronary circulation never increased or appeared unless accompanied by an increase in the extent of local coronary artery disease. The absence of progression was associated with a favorable prognosis. All other clinical, laboratory, and arteriographic parameters analyzed were not predictive of subsequent progression of the coronary obstructive lesion.

**AB-1219-73**
Papilledema Associated With Ruptured Intracranial Aneurysms—Fahmy JA (Department of Ophthalmology, Kommunehospitalet, Øster Farimagsgade 5, DK 1399 Copenhagen K, Denmark)—Acta Ophthal 50:793-802, 1972*

Among 195 patients with intracranial aneurysms, 32 (16%) had papilledema. It was unilateral in seven cases, corresponding to the side of the aneurysm or hemisphere in six cases. Papillary prominence was slight and most often was accompanied by varying degrees of hemorrhage. The papilledema is presumably due to the subarachnoid hemorrhages in the sheaths of the optic nerves. The hemorrhage compromises the central retinal vein in its course through the subarachnoid space and thereby causes stasis of the venous outflow from the disc. This phenomenon could be demonstrated histopathologically and will be described in more detail in a subsequent paper.

**AB-1220-73**
Diffusion Bypass of Xenon in Brain Circulation—Brodersen P, Sejrsen P, Lassen NA (Departments of Clinical Physiology and Neurology, Bispebjerg Hospital, Copenhagen, and the Institute of Medical Physiology B, University of Copenhagen, Denmark)—Circulation Research 32: 363-369 (Mar) 1973*

The diffusion bypass of 133Xe between arteries and veins was studied in the brains of anesthetized dogs. A mixture of 51Cr-labeled red cells and 133Xe was injected as a bolus into the internal carotid artery. Gas-tight venous samples were taken every 0.4 to 0.8 second from the superior sagittal sinus. An excess of 133Xe in the early venous blood samples over that expected from blood-tissue equilibration considerations was demonstrated in all the experiments. The excess was most marked in the first samples, and it was enhanced by lowering cerebral blood flow by decreasing the cerebral perfusion pressure to 20 to 30 mm Hg. We concluded that diffusion bypass of the tissue by 133Xe is the most likely explanation for these experimental findings. The fraction of the bolus which appeared to bypass the tissue amounted to about 2% to 3% at the normal perfusion pressure (i.e., normal blood flow) and about 10% at a reduced cerebral perfusion pressure of 20 to 30 mm Hg (i.e., about half of normal blood flow). We concluded that measurement of cerebral blood flow by a bolus injection of 133Xe in the internal carotid artery and external detection of the washout is not influenced significantly by the diffusion bypass of 133Xe in the normal flow range.

**AB-1221-73**
Intracranial Hemorrhage in Children and Adolescents—Sedzimir CB (Regional Department for Surgical Neurology, Walton Hospital, Liverpool, England), Robinson J—J Neurosurg 38:269-281 (Mar) 1973*

The authors report their experience with 124 cases of intracranial hemorrhage in children and adolescents; the study includes 25 cases first reported in 1958. Fifty aneurysms with a mortality rate of 28% and 33 arteriovenous malformations with a mortality rate of 21% are included; 32 cases had no angiographically demonstrable lesion, six had miscellaneous lesions, and three had primary cerebral hemorrhage. Specific programs for therapeutic management based on this experience are discussed.

**AB-1222-73**

A drop attack was defined as falling without warning, not induced by any malfunction of the legs, not induced by change of posture or movement of the head, and not accompanied by vertigo or other cephalic sensation. All 33 patients attending a neurological clinic with a primary complaint fulfilling these criteria were women, and a further seven examples were found by questioning 200 consecutive patients at a gynecological clinic. No affected male was found.

In all but one patient, falls occurred only when walking. They were not due to wearing high-heeled shoes. The average age at onset was 44.5 years and in younger women onset was often during pregnancy. The

*Authors' abstract.

Stroke, Vol. 4, September-October 1973
accepted causes of drop attacks were not found with certainty in any of these patients. The sex incidence and the circumstances of the falls suggest that the cause may lie in differences between the two sexes in the mechanism of walking rather than in any central disturbance. Drop attacks in women commonly occur as an isolated symptom for many years, and although distressing have no serious prognostic implications.

AB-1223-73
Brain Scans in Autopsy Proved Cases of Intracerebral Hemorrhage—Sharma SM, Quinn JL II (Department of Radiology, McGaw Medical Center, Northwestern University Medical School, Chicago, Illinois 60611)—Arch Neurol 28:270-271 (Apr) 1973*

Contrary to the generally held belief that intracerebral hemorrhage and hemorrhagic infarcts frequently result in abnormal brain scans with sodium pertechnetate Tc 99m, the present study shows the Tc 99m brain scan to be positive in only one out of the nine patients with an autopsy proved diagnosis of an intracerebral hemorrhage.

The reasons for the discrepant findings may be as follows: (1) the short time interval between the injection of radionuclide and the commencement of brain scans (less than an hour in most of the patients); (2) brain scanning done too early in four out of nine patients after the onset of symptoms (two days); and (3) finally, the possible difference in the biological behavior of chlormerodrin Hg 203 (Neohydrin-203), pentetic acid (DTPA) labeled with radioactive copper (64Cu), sodium arsenate As 74, and Tc 99m.

AB-1224-73
Monitoring Antifibrinolytic Therapy in Subarachnoid Hemorrhage—Smith RR, Upchurch JJ (University of Mississippi Medical Center, Jackson, Mississippi)—J Neurosurg 38:339-344 (Mar) 1973*

A modification of the fibrin plate method was developed to measure fibrinolysis in patients with subarachnoid hemorrhage and those receiving antifibrinolytic agents. During the past two years, 21 patients with ruptured intracranial aneurysms received epsilon aminocaproic acid. Plasma and cerebrospinal fluid were monitored in 15 of these patients. Dosage factors, duration of action, and complications of therapy are presented. Fibrinolysis in normal plasma and cerebrospinal fluid is also discussed.

Cerebral Infarcts Complicating Neonatal Leptomeningitis. Acute and Residual Lesions—Friede RL (Institute of Pathology, Case Western Reserve University, Cleveland, Ohio)—Acta Neuropath (Berlin) 23:245-253, 1973 (Springer-Verlag, publisher)*

Cerebral infarcts are a complication of neonatal leptomeningitis found in approximately 30% of the autopsy cases. Observations in nine cases are presented, six acute and three with subacute or residual lesions.

Infarction was due to the formation of fibrinous thrombi in leptomeningeal, cortical and subependymal veins during the acute phase of the disease. Involvement of the intracranial sinus was not typical. Endarteritis changes were present, but neither complete obliteration nor formation of arterial thrombi was observed. Infarcts were located in cortex and underlying white matter, or deep in the periventricular white matter and basal ganglia; the latter localizations appear to be a consequence of ventriculitis. With longer survival the infarcts form multiple large cystic cavities, or abscesses by superinfection. Three cases with longer survival showed a characteristic clustering of multiloculated cavities in the central portion of the hemispheres obliterating fornices and corpus callosum, some communicating with a loculated distended ventricular system.

AB-1226-73
Circulation to the Brain of the Rat During Acute and Prolonged Respiratory Changes in the Acid-Base Balance—Pannier JL, Leuen I (Laboratory of Normal and Pathological Physiology, University of Ghent, Ghent, Belgium)—Pflügers Arch 338:347-359, 1973 (Springer-Verlag, publisher)*

The fraction of the cardiac output distributed to the brain was studied with a particle distribution method at different acutely induced arterial PaCO₂ levels in control rats and in rats kept during 24 hours before the experiment in an atmosphere containing either 10% CO₂ in air (prolonged hypercapnia) or 10% O₂ in N₂ (hypoxic hyperventilation producing prolonged hypocapnia). The curve relating the fraction of the cardiac output distributed to the brain and the PaCO₂ is shifted upward and to the left after prolonged hypercapnia, and downward and to the right after prolonged hypocapnia. A similar shift is observed when ortho-sympathetic vasoconstrictor activity is eliminated in the three groups of rats by alpha-adrenergic receptor blockade. The changes in the fraction of the cardiac output perfusing the brain are essentially due to modifications in the cerebral blood flow, since the cardiac output was not significantly influenced by the alterations in the PaCO₂. The results are discussed in relation to the changes occurring in the CO₂/HCO₃⁻ dissociation curve in blood and brain during prolonged respiratory changes in the acid-base balance.

AB-1227-73
Value of the Routine Use of the Cerebral Dynamic Radioisotope Study—Cowan RJ, Maynard CD, Meschan I, Janeway R (Departments of Radiology and Neurology, Bowman Gray School of Medicine, Winston-Salem, North Carolina), Shigeno K—Radiology 107:111-116 (Apr) 1973*

The results of 1,165 serial dynamic studies were reviewed. The routine addition of the dynamic study to the static image increased the detection of lesions by 33%. In patients with middle cerebral or carotid disease, the number of abnormal studies was doubled. Meningioma, arteriovenous malformation, and middle
cerebral artery occlusion produced characteristic patterns on the dynamic study. Specific combinations of dynamic study and static image findings increased the certainty of diagnosis. Decreased perfusion was due to cerebrovascular disease eight times more often than to tumor. The combination of normal perfusion and a positive gamma camera image occurred three times as frequently with tumor as with cerebrovascular disease.

AB-1228-73
The Effects of Epidural Masses on Spinal Cord Blood Flow. An Experimental Study in Monkeys—Ramsey R (Department of Radiology, University of California San Diego, University Hospital, San Diego, California), Dopman JL—Radiology 107:99-103 (Apr) 1973

Epidural masses were produced in 18 monkeys with percutaneously introduced balloon catheters. Masses in front of the cord displace the cord posteriorly and obstruct the subjacent central perforating arteries. The anterior spinal artery, however, is not obstructed unless the anterior mass is very large. Lateral epidural masses displace the cord without obstructing either anterior spinal or central perforating arteries.

AB-1229-73
Chronic Extradural Hematomas. A Study of 21 Cases—Iwakuma T, Brunngraber CV (Department of Neurosurgery, Norstadt Hospital, Hannover, West Germany)—J Neurosurg 38:488-493 (Apr) 1973

The authors report 21 cases of chronic extradural hematoma, including two encapsulated, five microscopically ossified, and two with a false aneurysm of the middle meningeal artery. Clinical and pathological findings are described, and the factors influencing the course discussed; the most important factors were found to be age, location, and source of bleeding.

AB-1230-73
Ligation of an Anterior Cerebral Artery for Aneurysms of the Anterior Communicating Artery Complex—Scott M (Department of Neurosurgery, Temple University Health Sciences Center, Philadelphia, Pennsylvania)—J Neurosurg 38:481-487 (Apr) 1973

The clinical data on nine patients with aneurysms of the anterior communicating artery complex treated by ligation of an anterior cerebral artery are presented. The long-term follow-up angiograms on five of the eight patients who survived surgery are discussed.

AB-1231-73
The Effect of Mannitol on Cerebral Blood Flow. An Experimental Study—Johnston IH, Harper AM (Wellcome Surgical Research Institute, University of Glasgow, Glasgow, Scotland)—J Neurosurg 38:461-471 (Apr) 1973

The effect of mannitol on cerebral blood flow was studied in anesthetized baboons, both at normal and raised intracranial pressure. At normal intracranial pressure, rapid intravenous infusion of mannitol (1.5 gm/kg in 10 min) led to a sharp transient rise in cerebral blood flow during and immediately after the period of infusion. This was associated with a reduction in cerebrovascular resistance and a variable change in cerebral metabolic rate (CMRO2). Other parameters measured did not change significantly. A similar response was seen during hypercapnia. Under conditions of raised intracranial pressure (supratentorial subdural balloon) mannitol infusion did not alter cerebral blood flow in three of four animals. In the remaining animal, however, a marked increase in blood flow occurred without any concomitant change in cerebral perfusion pressure. When a further infusion of mannitol was subsequently given to these animals while the intracranial pressure was artificially maintained, there was very little change in cerebral blood flow. The possible causes of the increase in cerebral blood flow at normal intracranial pressure and the clinical implications of these findings are discussed.

AB-1232-73

Arterial occlusions in the vertebrobasilar system have been reviewed in 44 patients. In each case a postmortem examination of the extracranial and intracranial cerebral arteries had been performed.

EDITOR’S NOTE: Unfortunately the title is not accurate; autopsy material with carotid occlusion is included. No significant clinical data are provided, so the paper does not assist the individual dealing with living patients.

AB-1233-73

Effects of regular ingestion of oral contraceptives on body weight, blood pressure and renin-angiotensin system in 20 young women during the first three months of administration were observed. Weight and blood pressure were not significantly changed. Changes of no apparent clinical significance in the renin-angiotensin system are described.

AB-1234-73
Experimental Arterial Thrombosis Formation In Vivo by Proteolytic Enzyme Perfusion and the Role of Elastin Layer—Kabemba JM, Mayer JE, Hammond GL (Department of Surgery and the Surgical Cardiovascular Research Laboratory, Yale University School of Medicine, New Haven, Connecticut)—Surgery 73:438-443 (Mar) 1973

The elastin layer remained after ten minutes of perfusion with proteolytic enzyme in 30 adult mongrel dogs. The study suggests that the elastin layer has an antithrombotic action and describes a method for producing experimental thrombosis.

*Authors’ abstract.

Stroke, Vol. 4, September-October 1973

819

The report concerns 70 patients who had a total of 71 operations for isolated valve replacement with the Model 2310 cloth-covered composite-seat Starr-Edwards ball-valve replacement. Operative mortality was 1.4%. During a median of 23 months after operation there was a 2.9% incidence of embolism. From the data presented, the authors advise the administration of anticoagulants for at least six to 12 months after operation.

The Response of the Brain to Hypoxia and Ischaemia—II. Pathology of Initial Ischaemic Injury (Shy-Drager Syndrome) (Morphology, American University of Beirut, Beirut, Lebanon)—Neurol Sci 17:271-279 (Nov) 1972

Unilateral and bilateral carotid ligations were performed on young adult Sprague-Dawley rats who were subsequently exposed to several forms of hypoxia. The appropriate tissue was examined histochemically. "Typical" lesions were observed. Pathogenesis is discussed without a significant statement.


Experimental cerebral ischemia (Rhesus monkeys) was studied. The ischemia was modified by hypocarbia and hypercarbia. Variable results were noted.

Experimental Ischemia of the Spinal Cord. Histologic Studies After Anterior Spinal Artery Occlusion—Fried LC (Division of Neurological Surgery, Virginia Commonwealth University, Medical College of Virginia, Richmond, Virginia 23219), Aparicio O—Neurology 23:289-293 (Mar) 1973

The authors accidentally discovered a model for producing ischemic infarction of the spinal cord. The experiment was conducted in 22 Rhesus monkeys. A variety of lesions are described.


Patients with central neurogenic hypotension were demonstrated to have changes in blood pressures. Cerebral blood flow, cerebral glucose, and oxygen consumption were reduced. Treatment is discussed.


Seventy nursing home patients were evaluated while taking various "vasodilators." No controls were observed. In a 12-week trial a proprietary treatment was said to relieve "a variety of disturbing symptoms common in geriatric patients."

Studies of Platelet Adhesiveness, Glucose Tolerance and Serum Lipoprotein Patterns in Patients With Coronary Artery Disease—Sullivan JM (Hypertension Unit, Peter Bent Brigham Hospital, Boston, Massachusetts 02115), Heine RA, Gorlin R—Amer J Med Sci 264:475-483 (Dec) 1972

This study re-affirms that female patients with diabetes melitus have a disproportionate risk for the development of atherosclerotic events.

Metabolic Studies in Subarachnoid Haemorrhage and Strokes. I. Serial Changes in Acid-Base Values in Blood and Cerebrospinal Fluid—Sambrook MA, Hutchinson EC, Aber GM (Departments of Neurology and Nephrology, Medical Research Unit, North Staffordshire Hospital Center)—Brain 96:171-190, 1973

Serial observations were made of CSF and blood acid-base values and sugar and lactic acid concentrations in 24 patients after subarachnoid hemorrhage and 13 additional patients with other types of stroke. The mortality was 79% in 14 patients with subarachnoid hemorrhage in whom there was a significant decrease in CSF pH, as compared to 20% in those patients in whom a fall in CSF pH did not occur. In the group with a higher mortality, there was a higher incidence of focal neurological signs, and a reduction in level of consciousness occurred more frequently. Only one patient with another type of stroke had a decrease in CSF pH, and this was felt probably related to an exacerbation of chronic bronchitis. It was felt that an increase in CSF lactic acid concentration secondary to a combination of red cell metabolism of sugar in the subarachnoid space and hyperventilation accounted for the change in CSF pH after subarachnoid hemorrhage. Hyperventilation occurring after subarachnoid hemorrhage or stroke was always associated with midbrain or pontine damage and no association was noted between changes in CSF pH and ventilation.

Metabolic Studies in Subarachnoid Haemorrhage and Strokes. II. Serial Changes in Cerebrospinal Fluid and Plasma Urea Electrolytes and Osmolality—Sambrook MA, Hutchinson EC, Aber GM (Departments of Neurology and Nephrology, Medical Research Unit, North Staffordshire Hospital Center)—Brain 96:191-202, 1973

Serial observations were made of the concentrations of plasma and CSF sodium, chloride, potassium and...
urea and of plasma and CSF osmolality in patients following subarachnoid hemorrhage and patients following a stroke. Changes observed in these values were related to the clinical findings and to the prognosis. Evidence of salt and water depletion was usually found in patients with a reduction in the level of consciousness and in those who had severe headache and meningism after hemorrhage. The relative stability of CSF sodium and chloride was reduced after subarachnoid hemorrhage but not after a stroke. A decrease in the concentration of CSF potassium was found in all patients after subarachnoid hemorrhage and the majority of patients after a stroke. An association was found between the severity of the fall in the CSF potassium concentration and the level of consciousness after subarachnoid hemorrhage. The mechanism underlying the changes in CSF potassium is obscure.

AB-1244-73
Evidence for Two Separate Effects of Adenosine Diphosphate on Human Platelets—Hampton JR, Nicholls DG, Mitchell JRA (Department of Medicine, Nottingham University, England)—Thromb Diath Haemorrh 28:419-430, 1972

The mechanism by which platelets from patients with arterial disease develop abnormal electrophoretic sensitivity to adenosine diphosphate (ADP) is reported. Only if ADP itself is present can plasma from such patients induce abnormal platelet sensitivity to ADP. The effects of ADP on human platelets appear to be twofold—one which allows platelets to interact with abnormal plasma, and the other which is reflected by changes in platelet electrophoretic mobility; the first is inhibited by cyanide, the second is not. The lecithin effect on normal platelets appears similar to that of abnormal plasma; however, if lecithin is incubated with plasma before addition to platelets, its effect is lost.

AB-1245-73

In order to compare the integrated counting rates measured over specific regions of the cerebral cortex from the time of intravenous injection of 99m Tc-pertechnetate up to the time of peak radioactivity, a small general-purpose computer was interfaced with a gamma scintillation camera. Comparisons were made on the above, the initial slope describing the rate of arrival of the tracer at various regions of the cortex, and between corresponding regions over each cerebral hemisphere. The authors felt that validation of this method will require extensive study in many patients with suspected cerebrovascular disease but feel their initial results are of potential value.

AB-1246-73
Ocular Findings in Systemic Lupus Erythematosus—Gold DH, Morris DA, Henkind P (Department of Ophthalmology, Montefiore Hospital and Medical Center, Bronx, New York)—Brit J Ophthalm 56:800-804 (Nov) 1972

The ocular findings in 61 outpatients with systemic lupus erythematosus seen in the Department of Neurology of the New York Medical Center over the last decade are reviewed, and the results of previous series on the subject are summarized. A relatively low incidence of lupus retinopathy was noted in the present series, and it was felt that this may likely be a reflection of better disease control in the current patient population. The existence of retinal changes in systemic lupus erythematosus in the absence of hypertension is emphasized and the relationship of the retinal lesions to the activity of the systemic disease is discussed.

AB-1247-73

A series of patients with low-tension glaucoma were reviewed and analyzed. Ten of these patients had a history of shock before becoming aware of what was shown to be an ischemic optic neuropathy with visual field loss. Within this group, only one patient had further progression of his field loss. In contrast, of the 28 patients without such a history of preceding shock, 18 showed progression. The groups were comparable in all other ways, and the authors conclude that shock may induce an ischemic optic neuropathy with an optic-disc appearance and visual loss similar to that seen in low-tension glaucoma. The prognosis in this group of patients appears to be satisfactory in terms of further progression.

AB-1248-73

The authors report the third documented case of spontaneous complete angiographical disappearance of a cerebral arteriovenous malformation. Speculation as to the mechanism of its disappearance is discussed, and the authors conclude that it was presumably secondary to thrombosis of the malformation.

AB-1249-73
Control of Hyperlipidemia in the Treatment and Prevention of Coronary Atherosclerosis—Kayden HJ (Department of Medicine, New York University School of Medicine,
In a review article, the author discussed the importance of the analysis of serum lipids in patients whose family has a history of lipid abnormalities or premature atherosclerosis. The classification of the serum lipid abnormalities is discussed and careful attention to family history in an analysis of serum lipids of family members is stressed. Treatment of hyperlipidemia through drug management is described. The author concludes that dietary restriction, drug therapy, and diligent supervision of the patient, along with repeated determinations of serum lipids by a reliable laboratory, give the greatest chance of success in controlling the abnormally elevated serum lipids and in retarding and reversing lipid deposition in the arterial system.

**AB-1250-73**

**The Entity of Buerger’s Disease**—Inada K (Department of Surgery, Gifu University School of Medicine, Gifu City, Japan), Katsumura T—Angiology 23:668-687 (Dec) 1972

Based on clinical experience with 206 cases of thromboangiitis obliterans, the authors discuss their observations in this disorder. They note that abnormalities in the abdominal aorta and its major branches were rarely found in contrast to those patients with arteriosclerosis obliterans. Complete angiographical studies including translumbar aortography were routinely performed on every case and formed the basis of this impression. They feel the underlying pathological mechanism is likely an arteritis, although operative findings performed on 55 cases (61 limbs) suggest that the progression of the occlusive changes in this disease was mainly due to secondary thrombosis. It is concluded that Buerger’s disease is a separate entity from arteriosclerosis obliterans, although they add that a patient with this disorder may have a heightened susceptibility to atherosclerosis.

**AB-1251-73**


Eight cases of angiomas of the head of the caudate nucleus are presented. The importance of a satisfactory angiographical examination to demarcate the limits of this abnormality is stressed as well as the fact that some of these angiomas may be surgically approachable. They report that 75% of their patients treated surgically had good results. The angiographical anatomy of the vascularization of the head of the caudate nucleus is discussed in detail.

**AB-1252-73**

A Method for the Measurement of Platelet Adhesiveness by Use of Dialysis Membranes in a Test-Cell—Lindsay RM (University Department of Medicine, Glasgow Royal Infirmary, Castle Street, Glasgow), Prentice CRM, Ferguson D, Muir WM, McNicol GP—Brit J Haematol 24:377-389, 1973

The properties of dialysis membranes were studied by devising a special test-cell in which the degree of retention of platelets in relationship to various membranes was measured. The test appears to be more sensitive and reproducible than a glass-bead column test. The normal range for platelet adhesiveness was found to be 31 ± 9% using whole blood and 19 ± 3% with platelet-rich plasma. The amount of adhesiveness was related in part to the presence of adenosine diphosphate. The system was sensitive enough to note a decrease in platelet adhesiveness following salicylate ingestion.

**AB-1253-73**

Effect of Detergents on Platelet Electrophoresis and Aggregation, and the Possible Relation of Plasma Surface Activity to Thrombosis—Hampton JR, Nicholls DG (Department of Medicine, Nottingham University, England)—Thromb Diath Haemorrh 28:408-418, 1972

The sensitivity of the electrophoretic response of human platelets to adenosine diphosphate may be increased by certain anionic, cationic and nonionic compounds which have detergent properties. Plasma from patients with arterial disease have a similar effect on normal platelets, and therefore the surface-active properties of the plasma from such patients may be abnormal. Cetyl pyridinium chloride did not induce any change in the electrophoretic response of platelets but protected platelet from other detergents and was shown to be an inhibitor of platelet aggregation.

**AB-1254-73**

Progress in the Magnetically Controlled Stereotactic Thrombosis of Intracranial Aneurysms—Alksne JF (University Hospital of San Diego County, San Diego, California 92103)—Confin Neurol 34:368-373, 1972

The stereotactic thrombosis of intracranial aneurysms using a magnetic probe is a safe and effective procedure for patients with aneurysms of the anterior communicating artery which are less than 1 cm in diameter. Iron particles are inserted and drawn to the aneurysm by the iron wire and will enhance the thrombosis of large aneurysms.

**AB-1255-73**


A patient with two episodes of amaurosis fugax in one eye and arteriographical evidence of occlusion of the opposite internal carotid artery was studied. Carotid compression of the open (symptomatic eye) side produced homolateral transient blindness, decreased b waves in the ERG, and slowing of the EEG. Poor...
ABSTRACTS

collateral circulation to the ophthalmic territory from the posterior circulation is postulated as the mechanism.

AB-1256-73
Mechanism of Chemical Control of Cerebral Vasomotor Activity—Shinohara Y (Department of Internal Medicine, Keio University School of Medicine, 35 Shinanomachi, Shinjuku-ku, Tokyo, Japan)—Neurology 23: 186-195 (Feb) 1973

The action of carbon dioxide on the cerebral vessels is abolished by the inhibition of carbonic anhydrase. The cerebral vasodilatation action of hypoxia and papaverine was not influenced or suppressed by inhibition of carbonic anhydrase. Minor changes in the pH of the CSF on the pial surface did not alter cortical blood flow. These data are consistent with the hypothesis that the final common pathway in cerebral vasomotor activity is a change in chemical control of the intracellular H⁺ of smooth muscle fibers in cerebral vessels. The mechanism of autoregulation may be different from that of chemical control since the vasodilating effect of drugs disappeared with the decrease in blood pressure or postanoxic encephalopathy while a slight effect of CO₂ remained.

AB-1257-73
Cerebral Blood Flow Dynamics in Hypotension and Cardiac Arrest—Hekmatpanah J (Division of Neurological Surgery, The University of Chicago Hospitals, Chicago, Illinois 60637)—Neurology 23:174-180 (Feb) 1973

The blood flow in pial vessels was studied in dogs and monkeys following hypotension and cardiac arrest. The change in capillary blood flow was related primarily to the degree of hypotension rather than to arrhythmia. A decrease of blood pressure to two-thirds of the normal value showed an inconspicuous change in blood flow; blood flow was markedly altered when blood pressure fell below 50%. Immediately after cardiac arrest, the blood flow stopped in the vessels which collapsed. In two to three minutes, red cells sludged; in five to ten minutes, microemboli were formed; and in 10 to 15 minutes, blood separated into formed elements and fluid. Resuscitation was possible within three minutes, difficult within three to five minutes, and impossible afterward. The “no reflo” phenomenon was observed during resuscitation, and it was believed to be related to intravascular sludging and clotting.

AB-1258-73
Blood Flow Changes in Carotid and Vertebral Arteries by Hyperbaric Oxygenation—Kanai N, Hayakawa T (Department of Neurosurgery, Osaka University Medical School, 3 Dojima-Hamadori, Fukushimaku, Osaka, Japan), Mogami H—Neurology 23:159-163 (Feb) 1973

The effect of hyperbaric oxygenation on blood flow in the common, internal and external carotid and the vertebral arteries was studied by use of transcutaneous ultrasonic blood rheography. Oxygen inhalation at 2 atmospheres resulted in marked reduction of blood flow in the carotid arteries while the blood flow in the vertebral artery was the same or slightly increased. The significance of the difference between the changes in blood flows in the carotid and vertebral systems is discussed in relationship to the clinical results of hyperbaric oxygen therapy for head injury and cerebrovascular disease.

AB-1259-73
Unilateral Asphyxial Brain Damage Produced by Venous Perfusion of One Carotid Artery—Selzer ME (Department of Neurology, Hospital of the University of Pennsylvania, Philadelphia, Pennsylvania 19104), Myers RE, Holstein SB—Neurology 23:150-158 (Feb) 1973

Severely deoxygenated and hypercapnic venous blood was perfused through one internal carotid artery in Rhesus monkeys. Animals sustaining one hour of such unilateral cerebral asphyxia showed, after three hours of recovery, severe unilateral brain swelling and necrosis in the perfused area. The affected cerebral tissue showed marked increases in water and sodium and chloride contents and decreases in potassium.

AB-1260-73
Blood and Cerebrospinal Fluid Lactate During Induced Hypotension—Magnness A, Yashon D, Locke GE, Hunt WE (Division of Neurological Surgery, The Ohio State University College of Medicine, Columbus, Ohio 43210)—J Surg Res 14:1-6 (Jan) 1973

Cerebral anaerobic metabolism was evaluated in dogs during induced arterial hypotension and trimethaphan infusion by comparison of lactate in cerebrospinal fluid and in arterial blood. The CSF data show that there is no significant difference between HOH and TIH lactate accumulation, and that from five to 30 minutes are required for significant elevation over control levels. The data of blood lactate levels show significant elevation over controls during HOH by five minutes and during TIH by 30 minutes. The advantage of employing blood lactate to monitor cerebral metabolism during hypotension is demonstrated.

AB-1261-73

A case of extensive giant cell proliferation in association with abundant pseudo-calcium deposits in a colligation necrosis is reported. Neuropathological and ultrastructural findings are demonstrated and the pathogenetic factors are discussed.

AB-1262-73
Aneurysm of Vein of Galen and Diffuse Meningeal Angiogenesis. Occurrence in a Neonate With Cardiac Failure—Stebbens WE (Department of Pathology, Veterans Administration Hospital, Albany, New York 12208),
Sahgal KK, Nelson L, Shaker RM—Arch Path 95:333-335 (May) 1973*

A four-day-old infant had severe cardiac and respiratory distress due to a cerebral arteriovenous fistula, and aneurysmal dilatation of the vein of Galen, the straight sinus, and the torcular. In addition, there was diffuse meningeal angiectasia over the lateral and ventral surfaces of both cerebral hemispheres. This is the fourth such case reported in the literature, and the association with a serious arteriovenous shunt is unusual because it suggests that the angiectasia is in all probability a secondary manifestation of the shunt.

AB-1263-73
Association Between Atherosclerotic Diseases and Carboxyhaemoglobin Levels in Tobacco Smokers—Wald N (D.H.S.S. Cancer Epidemiology and Clinical Trials Unit, Department of the Regius Professor of Medicine, University of Oxford, Radcliffe Infirmary, Oxford), Howard S, Smith PG, Kjeldsen K—Brit Med J 1:761-765 (Mar 31) 1973*

In a cross-sectional study carboxyhemoglobin (COHb) levels in tobacco smokers were found to provide a better indication of a person’s risk of having developed certain atherosclerotic diseases, including ischemic heart disease, than the smoking history. In the age group 30 to 69 years a person with a COHb level of 5% or more was found to be 21 times (lower 95% confidence limit 3.3 times) as likely to be affected by these diseases as another person of the same age and sex with similar smoking history and current smoking habits but with a COHb level of less than 3%.

AB-1264-73
Adenosine Diphosphate Induced Platelet Aggregation in Myocardial Infarction and Ischemic Heart Disease—Dreyfuss F, Zahavi J (University of Medicine B, Tel Aviv University Medical School, and Ichilov Municipal Govt-Hospital, Tel Aviv, Israel)—Atherosclerosis 17:107-120 (Jan-Feb) 1973*

Adenosine diphosphate (ADP) induced platelet aggregation has been studied by a nephelometric method in 66 men with myocardial infarction (MI). Most of them were followed for several months and some for up to two years. They were compared to 20 normal controls.

With ADP 5.9 μg/ml, curves of normal controls were monophasic with pronounced disaggregation. Day to day variations appeared occasionally in the rate of aggregation.

Within the first three days of the MI, in 80% of the patients, the curves were monophasic or biphasic pathologically, showing greater extent of aggregation and lack of minimal disaggregation. This abnormal pattern was noted in most patients for several months and in some for up to two years. Three peaks in abnormal aggregation and disaggregation after the acute MI were found: during the fourth to sixth day, the tenth to sixteenth day and the day of discharge from hospital. This latter observation represents most prob-ably a psychological stress phenomenon. Consequently platelets of MI patients are more responsive to added ADP. The abnormal pattern was more pronounced in patients with recurrent MI, severe congestive heart failure or pulmonary embolism. Yet neither diabetes nor hypertension apparently had any similar effect. No correlation was found between the age of normals or patients and any one of the calculated parameters. The increased responsiveness of platelets to ADP in MI patients indicates disturbed hemostasis in these patients. It also might play a role in the pathogenesis of atherosclerosis.

AB-1265-73
Cholesterol Accumulation and Content in Regions With Defined Endothelial Integrity in the Normal Rabbit Aorta—Bondejers G, Bijkerkerud S (Departments of Histology and Internal Medicine I, University of Goteborg, Goteborg, Sweden)—Atherosclerosis 17:71-83 (Jan-Feb) 1973*

To study the significance of the endothelial integrity for the accumulation of cholesterol during atherogenesis, the concentration and uptake in vivo of free and esterified cholesterol was determined in regions with intact and defective endothelium in the aorta of normal rabbits. The cholesterol content and the uptake of free and esterified cholesterol was higher in regions with defective endothelium. The higher uptake of esterified cholesterol suggests filtration of lipoproteins in regions with defective endothelium. In regions with intact endothelium, a direct relationship was found between the uptake of labeled free and esterified cholesterol with a ratio between the fractions of 20:1, suggesting active transport of cholesterol involving hydrolysis of cholesterol ester as a primary step. Furthermore, in the same regions, an inverse relationship was found between uptake and content of cholesterol, suggesting an adjustment of the cholesterol uptake to different requirements in different regions of the aorta. Finally, the results indicate that the intact endothelial lining may represent a structural barrier against the excessive influx of cholesterol, and it is suggested that the integrity of this barrier may be decreased during atherogenesis.

AB-1266-73

Tritiated thymidine radioautography was employed to study the effect of epinephrine on cellular proliferation in the aorta and pulmonary artery of rabbits with cholesterol atherosclerosis. Rabbits fed cholesterol for 90 days were given epinephrine intravenously in a single large dose or in multiple low daily doses. Labeled cell counts in animals killed at intervals ranging from one to 12 days after the start of treatment showed that both treatments, as compared with controls, increase the deoxyribonucleic acid synthesis both in intimal plaques and in the media. This effect was particularly evident in

*Authors’ abstract.
the animals treated with low daily doses which, otherwise, in light and electron microscopy studies showed less marked structural changes of the medial coat. No definite relationship was found to exist between increased rate of DNA synthesis and serum cholesterol levels. It is suggested that the increased DNA synthesis induced in the atherosclerotic vessels by epinephrine is not merely a consequence of the structural damage, but also should be regarded as a response of the arterial wall to functional and/or metabolic stimuli that are as yet undetermined. On the other hand, it is concluded that the contributing or enhancing effect of epinephrine on cholesterol atherogenesis might be due, at least partly, to the increased mitotic rate into the arterial wall.

ABSTRACTS

Propranolol and Hypertriglyceridemia—Barboriak JJ (Department of Pharmacology, Medical College of Wisconsin, Milwaukee, Wisconsin 53293). Friedberg HD—Atherosclerosis 17:31-35 (Jan-Feb) 1973*

Eight subjects with elevated fasting plasma triglyceride levels and type IV hyperlipoproteinemia, who received a 60 gm fat meal before and after two-week treatment with propranolol, showed an enhanced lipemic response to the meal after the treatment. In six subjects without fasting hypertriglyceridemia, treatment with propranolol led to a slight but consistent decrease in alimentary lipemia. Plasma cholesterol levels were not affected in either group.

Collateral Cerebral Blood Pressure. An Index of Tolerance to Temporary Carotid Occlusion—Moore WS (Veterans Administration Hospital, San Francisco, California 94121), Yee JM, Hall AD—Arch Surg 106:520-523 (Apr) 1973*

Seventy-eight patients underwent 107 carotid artery operations in which a decision to use an internal shunt was based solely upon the back pressure value distal to the proximally clamped internal carotid artery. The technique of back pressure measurement and angiographical correlation with back pressure values are described. Of the patients operated on, 89.7% had back pressures above 25 mm Hg and did not require a shunt. The validity of the test is confirmed as there were no deaths or strokes among the unshunted, neurologically intact patients.

Patients with a neurological deficit prior to operation were encountered with these methods.

Stroke Rehabilitation in a Midwestern County—Waylonis GW (Department of Physical Medicine, Riverside Methodist Hospital, Columbus, Ohio 43214), Keith MW, Aseff JN—Arch Phys Med Rehab 54:151-155 (Apr) 1973*

As part of a Regional Medical Program, a Stroke Rehabilitation Program was established at Licking County Memorial Hospital in 1969. During a 12-month period, all patients admitted with a diagnosis of stroke were evaluated and treated by a team of physicians and therapists. One year later, the surviving patients were re-evaluated and observations made on their progress. These observations were compared with those from a "control" group of stroke patients admitted in the year prior to the stroke program. It was found that 56% of the stroke patients had died by the end of the one-year period and that 95% of the deceased had died in the first 180 days after onset of the disease. Stroke was found to be a disease of the elderly: mean age at onset, 72.98 years; and mean age of the survivors, 71.07 years. In spite of an intensive rehabilitation program, more than 20% of the survivors remained totally dependent.

No contraindications or significant complications were encountered with these methods.

Cerebral Vascular Accidents in Cyanotic Congenital Heart Disease—Cottrill CM, Kaplan S (Children's Hospital, Cincinnati, Ohio 45229)—Amer J Dis Child 125:484-487 (Apr) 1973*

A study of 29 patients with cerebrovascular accidents complicating cyanotic congenital heart disease revealed that the predominant central nervous system lesion was cerebral venous thrombosis. Young, cyanotic children,
particularly those whose blood indices denote a hypochromic microcytic anemia, are at risk to develop central nervous system complications. Since cyanotic infants with hypochromic microcytic anemia may have hemoglobin and hematocrit levels in the normal range, measurement of cell indices and microscopic examination of blood smears are necessary to exclude iron deficiency anemia.

**AB-1272-73**

**Spinal Cord Blood Flow in Dogs. 1. The "Normal" Flow**—Griffiths IR (Department of Veterinary Surgery, University of Glasgow, Veterinary Hospital, Bearsden, Glasgow)—*J Neurol Neurosurg Psychiat* 36:34-41 (Feb) 1973

The spinal cord blood flow has been measured in anesthetized dogs using an inert radioactive gas ($^{133}$Xenon) clearance technique. The $^{133}$Xe was placed in the cord by direct injection. This study has demonstrated that the flows obtained from the white matter are reproducible and that there is little variation in blood flow in the white matter between different thoracolumbar segments in the same dog. No difference was found in blood flow between dogs anesthetized with halothane, trichlorethylene, or pentobarbitone.

**AB-1273-73**

**Spinal Cord Blood Flow in Dogs. 2. The Effect of the Blood Gases**—Griffiths IR (Department of Veterinary Surgery, University of Glasgow, Veterinary Hospital, Bearsden, Glasgow)—*J Neurol Neurosurg Psychiat* 36:42-49 (Feb) 1973

The effect of $\text{CO}_2$ on the spinal cord blood flow was investigated in nine dogs. The flow was closely correlated with the $P_{\text{aCO}_2}$ and at about 85 mm Hg was double the normocarbic flow. The effect of $P_{\text{aO}_2}$ was studied in a further nine dogs. Hypoxia markedly increased the flow which was maximal at $P_{\text{aO}_2}$ 30 to 40 mm Hg. The vasoconstrictor effect of hypoxia was absent or decreased in hypoxia. The response of the cord vessels to the blood gases was very similar to that of the brain.

**AB-1274-73**

**Traumatic Cerebral Aneurysms. Clinical Features and Natural History**—Benoit BG, Wortzman G (Department of Radiology, Toronto General Hospital, Toronto 2, Ontario, Canada)—*J Neurol Neurosurg Psychiat* 36:127-138 (Feb) 1973

Six cases of traumatic cerebral aneurysms are presented, four situated at the base of the brain, and two on peripheral branches. Serial radiography was obtained in five patients, and in each the aneurysms had changed: spontaneous thrombosis, enlargement and change in shape, or rupture with destruction occurred. If surgical treatment of the aneurysm is delayed after the diagnosis has been made by angiogram, repeated angiography is recommended.

*Authors' abstract.*

**AB-1275-73**

**Stenosis of the Contralateral Asymptomatic Carotid Artery—To Operate or Not?**—Levin SM (Department of Surgery, University of California, Mount Zion Hospital, San Francisco, California), Sondheimer FK—*Vasc Surg* 7:3-13 (Jan-Feb) 1973

Both internal carotid arteries were found to have greater than 50% stenosis in a series of 60 patients. Reconstructive surgery of only one carotid artery was carried out with follow-up examinations for more than two years. There were no strokes in this group. The second stenotic vessel was repaired only if symptoms developed following the initial surgery; only two patients required such additional surgery.

**AB-1276-73**

**Life-Threatening Arrhythmias in Subarachnoid Hemorrhage**—Parizel G (Coronary Care Unit, Department of Medicine, Middelheim Hospital, Antwerp)—*Angiology* 24:17-21 (Jan) 1973

Two patients are described with similar histories of sudden loss of consciousness followed by neck stiffness on awakening. Similarly, each had inverted T waves on ECG examination, prompting admission to coronary care units. Each subsequently developed circulatory arrest secondary to ventricular fibrillation; successful resuscitation resulted in recovery for both patients. Cerebrospinal fluid examination revealed subarachnoid bleeding in both patients. This report strongly suggests that changes on ECG examination in patients with subarachnoid hemorrhage must be interpreted carefully; primary myocardial involvement must be considered in all patients with electrocardiographic changes regardless of CNS alterations.

**AB-1277-73**

**Hemodynamic Comparison of Agents Useful in Hypertensive Emergencies**—Bhatia SK, Frohlich ED (Department of Medicine, University of Oklahoma Health Sciences Center, Oklahoma City, Oklahoma 73190)—*Amer Heart J* 85:367-373 (Mar) 1973

The hemodynamic effects of three antihypertensive agents (trimethaphan, sodium nitroprusside and diazoxide) were studied in 23 hypertensive patients. Each of the agents reduced blood pressure by about 25% but the immediate reduction by diazoxide returned toward pretreatment levels after 20 minutes. Reflexive increase in heart rate occurred with each agent with onset of hypertensive effect but increase in cardiac output and left ventricular ejection rate occurred only with diazoxide. The results suggest hypotensive effects can be achieved with nitroprusside and trimethaphan similar to those seen with diazoxide but without additional myocardial stimulation.

**AB-1278-73**

**Control of Common Carotid and Innominate Artery Hemorrhage Complicating Tracheostomy**—Fox JL (Department of Neurological Surgery, George Washington University

Stroke, Vol. 4, September-October 1973
ABSTRACTS

Medical Center, Washington, D. C.—J Neurosurg 38: 394 (Mar) 1973

Using a technique previously described, the author successfully occluded a ruptured right common carotid artery eroded from a tracheostomy. The surgeon's finger was inserted through the tracheostomy incision along the anterior chest wall. Movement forward and to the right was successful in producing tamponade of the bleeding vessel.

AB-1279-73
Experimental Arterial Embolism: A Study Using Scanning Electron Microscopy to Identify Changes in Luminal Surface Ultrastructure After Exposure to Implanted Emboli—Hamer JD (Department of Surgery, Queen Elizabeth Hospital, Edgbaston, Birmingham, England)—Surgery 73:500-506 (Apr) 1973

Electrically induced venous thrombi were inserted into the arteries of dogs. With the embolus in situ for seven days and postembolectomy blood flow impaired by 50%, all vessels underwent thrombosis. However, with unrestricted postoperative blood flow, only one of six arteries thrombosed after 24 hours of embolism. Changes in the internal elastic lamina and vasa vasora plus edema and hemorrhage within the media were noted in arteries exposed to emboli. Poorly polymerized fibrin remaining after embolectomy was demonstrated in those vessels showing occlusive thrombosis. Fibrin in a fiber or netlike form appears to be less frequently associated with postembolectomy thrombosis.

AB-1280-73

A 60-year-old right-handed man developed left-sided deafness, left facial paralysis, sensory loss in the left side of the face, and cerebellar signs of acute onset. A circumscribed hemorrhage in the caudal pontine tegmentum and adjacent cerebellum were found at necropsy. The findings are those of the lateral inferior pontine syndrome. The authors emphasize the use of topographical nomenclature as opposed to naming of individual arterial branch occlusions.

AB-1281-73
Pathogenesis of Cerebral Mycotic Aneurysms—Molinari GF (Section on Stroke and Head Injury, National Institute of Neurological Diseases and Stroke, Building 36, Bethesda, Maryland, 20014), Smith L, Goldstein MN, Satran R—Neurology 23:325-332 (Apr) 1973

Septic emboli were introduced through the internal carotid artery in dogs. One-half of the animals were treated with penicillin following introduction of emboli. Both coagulase-negative and coagulase-positive organisms formed the septic emboli, each introduced into separate groups. The results of the present study show that mycotic aneurysms can develop rapidly when a virulent pathogen has been introduced. Fibrosis occurs when pathogenesis has been retarded by incomplete therapy; however, even in this group, infection may spread to infarcted brain parenchyma resulting in brain abscess.

AB-1282-73
Atherosclerosis and Aneurysm Formation in a Saphenous Vein-Grft—De La Rocha AG, Peixoto RS, Baird RJ (Room 304, 399 Bathurst Street, Toronto, 2B, Ontario, Canada)—Brit J Surg 60:72-73 (Jan) 1973

A case is reported of a 63-year-old man who had a saphenous vein bypass graft inserted into the femoral artery. Within five years, aneurysmal dilatation required resection and replacement with an aorto-femoral prosthetic graft. Histological examination of the resected graft revealed extensive atherosclerosis with subintimal fibrosis and cholesterol deposition. Atheromatous deterioration and aneurysm formation are rare in vein-grfts.

AB-1283-73

Blood coagulation and fibrinolysis were studied in 722 men aged 54 years. Blood was drawn in the afternoon and in a subsample of 76 men in the morning. Fibrinolytic activity was higher and recalcification times of citrated plasma and PTT in silicone tubes were shorter in the afternoon than in the morning. Dividing groups according to physical activity during work and leisure time revealed those men with greater amounts of physical activity had shorter clotting times in both afternoon and morning. Fibrinolytic activity did not vary between the two groups. Therefore, there is a diurnal rhythm of fibrinolysis existing which is unrelated to physical activity. Physically active men have shorter clotting times.

AB-1284-73
Technique Isotopique d'Etude Quantitative des Variations du Volume Vasculaire Cérébral (V.V.C.) (Quantitative Isotope Studies of Cerebral Vascular Volume)—Nicolaidis S (Service de Neurochirurgie, Hôpital de la Salpêtrière, 47, Boulevard de l'Hôpital, F 75634 Paris Cedex 13), Jacquinot B, Hentschell F—Neurochir (Paris) 18:531-538 (Nov) 1972

Te 99m labeled red blood cells measured by a selective collimator and detection device enabled quantitative assessments of intracerebral vascular volume. Combination of this method with isotope techniques permits parallel measurements of cerebral blood flow and volume. Under certain pathological conditions these two variables may be negatively correlated.

AB-1285-73
A Study of Hypertension in the Inner City, A Student Hypertension Survey—McMahon FG (Tulane University School of Medicine, New Orleans, Louisiana 70112), Cole PA, Ryan JR—Amer Heart J 85:65-71 (Jan) 1973
Blood pressure was measured in 11,309 people in the inner city area of New Orleans. Hypertension was present in 36.4%. Age, obesity, coffee drinking, and the consumption of nerve and/or sleeping medications tended to increase prevalence of hypertension. Hypertension was found more frequently in blacks. Oral contraceptives and cigarettes did not appear to increase the prevalence of hypertension. Of 4,112 hypertensive individuals, 33% were new cases. Of those patients known to be hypertensive, 36% were being undertreated.

**ITEMS OF INTEREST**

**Arterial Microautografts: An Experimental Study**—Hunter KM (359 Palliser Square East, 115-9th Avenue South-east, Calgary, Alta, T2C 0P5), Donaghy RMP—Canad J Surg 16:23-27 (Jan) 1973

Free arterial autografts and rotation grafts 1.0 mm or less in diameter were placed in rabbits. Infection and technical difficulties accounted for most of the failures which appeared at a rate of 20%. The two anastomoses necessary for the free graft did not increase the risk of thrombosis when compared to the single anastomosis required in a rotation graft. The authors conclude about 90% of arterial grafts in rabbits will remain patent.

**Thromboembolism and Oral Contraceptives (Review)**—Hougie C (Department of Pathology, University of California School of Medicine, La Jolla, California 92037)—Amer Heart J 85:538-545 (Apr) 1973

**The Heart and the Eye**—Schrire V, Beck W, Chesler E (Cardiovascular-Pulmonary Research Group, Depart- of Medicine, Cardiac Clinic, Groote Schuur Hospital, Cape Town, South Africa)—Amer Heart J 85:122-131 (Jan) 1973

**The Sick Sinus Syndrome**—Ferrer MI (Department of Medicine, Columbia University College of Physicians and Surgeons, New York, New York)—Circulation 47:635-641 (Mar) 1973

**Tachycardia-Bradycardia Syndrome (So-Called “Sick Sinus Syndrome”). Pathology, Mechanisms and Treatment**—Kaplan BM, Langendorf R, Lev M, Pick A (Cardiovascular Institute, Michael Reese Hospital and Medical Center, Chicago, Illinois 60616)—Amer J Cardiol 31:497-508 (Apr) 1973

The above two articles review the assemblage of conditions called sick sinus syndrome, noting the multifaceted manifestations, including syncope and dizziness.
Abstracts

*Stroke*. 1973;4:814-828
doi: 10.1161/01.STR.4.5.814

*Stroke* is published by the American Heart Association, 7272 Greenville Avenue, Dallas, TX 75231
Copyright © 1973 American Heart Association, Inc. All rights reserved.
Print ISSN: 0039-2499. Online ISSN: 1524-4628

The online version of this article, along with updated information and services, is located on the World Wide Web at:
http://stroke.ahajournals.org/content/4/5/814.citation

Permissions: Requests for permissions to reproduce figures, tables, or portions of articles originally published in *Stroke* can be obtained via RightsLink, a service of the Copyright Clearance Center, not the Editorial Office. Once the online version of the published article for which permission is being requested is located, click Request Permissions in the middle column of the Web page under Services. Further information about this process is available in the Permissions and Rights Question and Answer document.

Reprints: Information about reprints can be found online at: http://www.lww.com/reprints

Subscriptions: Information about subscribing to *Stroke* is online at: http://stroke.ahajournals.org/subscriptions/