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1980 Publications of the Staff of Henry Ford Hospital

Selected Abstracts and Titles

Abstracts

Edited by George C. Bower, MD

Adams K, Grant I, Reed R. Normal neuropsychological abilities of alcoholic men in their late thirties. *Am J Psychiatry* 1979;136:1263-69.

The neuropsychological performance of alcoholic men in their late 30s (mean age, 37 years), some of whom had been abstinent for three weeks and others for 18 months, was compared with that of a group of men who drank occasionally. There were no differences between the alcoholic groups and the comparison group that could not be attributed to normal aging. The number of years of alcoholism or estimated lifetime alcohol use, dietary adequacy, and medical or blackout history did not relate to neuropsychological impairment. The authors suggest that a simple "dose-effect" relationship between alcohol use and cognitive decline cannot be assumed.

Bassett EJ, Keith MS, Armelagos GJ, Martin DL, Villaneuva AR. Tetracycline-labeled human bone from ancient Sudanese Nubia (A.D. 350). *Science* 1980;209:1532-34.

Nubian bone recovered from an X-group cemetery (A.D. 350 to 550) exhibits a pattern of fluorescence identical to that of modern tetracycline-labeled bone. When it is viewed under ultraviolet light at 490 angstroms, fluorophors are visible as a characteristic yellow-green fluorescence on surfaces that were actively mineralizing at the time of exposure. Contamination of stored grains provided the proper environment for cultivation of tetracycline-producing *Streptomyces*. Evidence for exposure to antibiotics in an archeological population is relevant to studies of the evolution of R factors and to the interpretation of health and disease within the population.

Berguer R, Higgins RF, Reddy DJ. Intimal hyperplasia: An experimental study. *Arch Surg* 1980;115:332-35.

Intimal hyperplasia is a common cause of the narrowing and failure of vein grafts in arterial circuits. Various factors may contribute to this. An experimental dog model that isolated the contribution of blood velocity from other possible causes was developed. Intimal hyperplasia was clearly greater in those segments of vein grafts with low-flow velocities.

Block MA, Jackson CE, Greenawald KA, Yott JB, Tashjian AH Jr. Clinical characteristics distinguishing hereditary from sporadic medullary thyroid carcinoma: Treatment implications. *Arch Surg* 1980;115:142-48.

Distinctive differences between the hereditary and sporadic varieties of medullary thyroid carcinoma include the uniform bilaterality, consistent association of C cell hyperplasia, and the frequent association with other endocrine lesions as characteristics of the hereditary type. Total thyroidectomy is required for hereditary medullary thyroid carcinoma. Lateral cervical lymph node dissections do not appear necessary for the hereditary type when not palpable, detected only by family screening, and when biopsy of midjugular lymph nodes shows no evidence of metastasis. For palpable medullary thyroid carcinoma, the eradication of all cervical locations is unlikely to result in normal or undetectable levels of serum calcitonin postoperatively, even though such appears more likely for the sporadic variety.

Brown R, Babcock R, Talbert J, Gruenberg J, Czurak C, Campbell M. Renal function in critically ill postoperative patients: Sequential assessment of creatinine, osmolar, and free water clearance. *Crit Care Med* 1980;8:68-72.

Sequential assessment of renal function in 50 critically ill postoperative patients was done by simultaneous determinations of osmolar, free water, creatinine and sodium clearances, and fractional excretion of sodium. The traumatic and nontraumatic critically ill surgical patients had a characteristic pattern of creatinine clearance (Ccr) which was age related. This was manifested in the trauma patient by Ccr which were initially greater than expected (140-190 ml/min. $1.73 M^2$). In the uncomplicated postoperative patients, a positive correlation was found between increased cardiac index and the indexed glomerular filtration rate. Decreases in free water clearance and Ccr were useful in predicting the onset of renal failure before the development of the oliguric state. The authors conclude that frequent assessment of those renal functions which are most adversely affected by accidental or surgical trauma is most appropriately monitored by serial measurement of creatinine and free water clearance.

Carlin AS, Stauss FF, Grant I, Adams KM. Drug abuse style, drug use type, and neuropsychological deficit in polydrug users. *Addict Behav* 1980;5:229-34.

Seventy-nine polydrug users were classified into one of two behavioral categories ("streetwise" vs "straight") and into two motivational groupings ("recreational use" vs "self-medicating"). Detailed medical and drug use histories were obtained, and all subjects received neuropsychological examination with the Halstead-Reitan Battery three weeks after entry into treatment. Neuropsychological impairment was related to different variables in the two groupings. "Streetwise" users who were impaired reported very heavy alcohol and opiate consumption. "Straight" users who were impaired used fewer drugs of all kinds except depressants, but had frequent positive medical histories.

Carretero OA, Scicli AG. The renal kallikrein-kinin system. *Am J Physiol* 1980;238:F247-55.

Kallikrein are enzymes that generate kinins, potent vasodilator peptides, from plasma substrates called kininogens. In the kidney, kallikrein is localized and released into the urine in the distal tubule. Urinary kinins are formed in this part of the nephron and also in the collecting duct, papilla, and pelvis. There is evidence that renal kallikrein reaches the kidney vascular compartment, where it could release kinins. Although kinins infused into the renal artery produce the release of prostaglandins, vasodilatation, diuresis, and natriuresis, the role of endogenous intrarenally formed kinins is not known. Increase in concentration of endogenous kinins by inhibition of their destruction produces an increase in sodium and water excretion, while a decrease in their concentration has the opposite effect. Although these findings need to be confirmed by more specific methods, they suggest that the renal kallikrein-kinin system is involved in the regulation of sodium and water excretion by the distal nephron. In essential hypertension and in different models of experimental hypertension, kallikrein excretion is decreased. One exception is mineralocorticoid-induced hypertension, in which urinary kallikrein excretion is increased. In rats bred to be susceptible to the hypertensive effect of salt, urinary kallikrein excretion is conspicuously low even before they develop hypertension. It could be that high sodium intake promotes hypertension in these rats because their capacity to excrete sodium is decreased due to an alteration in the kallikrein-kinin system.

Douglass MC, Cruz C, Pelachyk JM. Kaposi's sarcoma and immunosuppression. *Curr Conc Skin Disorders* 1980;1:7-16.

Immunosuppressive therapy is being used in the treatment of a growing number of clinical disorders. However, it has been associated with an increased incidence of malignancies, as has been well documented in kidney transplant recipients. In this

relatively young population, 6% develop neoplasms between 1 and 158 months (mean 37) after transplantation. Of 630 malignancies in 604 organ transplant recipients, 20 were Kaposi's sarcoma (3.2%); if nonmelanoma skin cancers and carcinomas in situ of the uterine cervix are excluded, as is done in many cancer surveys, the incidence of Kaposi's sarcoma rises to 4.9%. Both of these figures are markedly different from the incidence of Kaposi's sarcoma in the general population in the U.S. (0.06% of all malignant tumors) and in Canada (0.05%). But what was once uncommon is beginning to be seen with growing frequency. Patients other than transplant recipients who are receiving immunosuppressive therapy also have been reported to develop Kaposi's sarcoma. The behavior of Kaposi's sarcoma in a patient on immunosuppressive therapy is significantly different from that of the spontaneously occurring disease seen in the United States.

Folger GM Jr, Sabbah HN, Stein PD. Evaluation of the anatomy of congenitally malformed aortic valves by orifice view aortography. *Am Heart J* 1980;100:152-59.

Employing a cine-aortographic technique whereby the patient is rotated so as to cause en face viewing of the aortic valve, it is possible to determine aortic valve area accurately. This technique of orifice-view aortography is particularly useful in children where the assessment of aortic stenosis, often necessary prior to the development of symptoms, is at times difficult and occasionally not possible by conventional means. Of considerable importance in such individuals may be knowledge of aortic valve anatomy, especially as it pertains to operability by simple valvular commissurotomy as opposed to aortic valve replacement.

This study presents the results of a critical review of our experience using this technique with congenital aortic valvular malformations in regards to the ability to delineate accurately the appearance of the aortic valve.

Grodsinsky C. Surgical treatment of chronic pancreatitis: A review after a ten-year experience. *Arch Surg* 1980;115:545-51.

Seventy-five operative procedures were done in 63 patients to correct one or more complications of chronic pancreatitis. Operations included resection, pancreaticojejunostomy, choledochoduodenostomy, draining and/or excision of pseudocysts, sphincteroplasty, and bypass surgery for relief of duodenal obstruction. All patients were followed for up to 10 years, with 22 being followed up longer than five years. Recurrent pancreatitis occurred in three patients after resection and in two after drainage procedures, but attacks were milder with only an occasional occurrence. Operative procedures to relieve specific complications of chronic pancreatitis provided good results. However, because internal drainage of pseudocysts associated with chronic pancreatitis was frequently accompanied by recurrence of symp-

toms, excision offered better results. When the pancreatic duct was dilated, good results were obtained by pancreaticojejunostomy. In the absence of dilation, after strict preoperative selection of patients, and in the presence of diffuse parenchymal fibrosis, subtotal pancreatectomy is the procedure of choice.

Gross SC, Barr I, Eyer WR, Khaja F, Goldstein S. Computed tomography in dissection of the thoracic aorta. *Radiology* 1980;136:135-39.

Eleven patients presenting with thoracic aortic dissection were studied by computed tomography (CT). CT was usually performed with knowledge of the angiographic diagnosis. In eight cases, CT was definitive. This group included all six patients who received intravenous contrast material by bolus infusion. An algorithmic approach to patients with possible aortic dissection is suggested.

Hricak H, Thoeni RF, Margulis AR, Eyer WR, Francis IR. Extension of gastric lymphoma into the esophagus and duodenum. *Radiology* 1980;135:309-12.

In 81 patients with gastric lymphoma, spread of tumor beyond the stomach was analyzed based on radiographs and medical records. Tumor extension into the esophagus was present in 10% of patients, and spread across the pylorus into the duodenal bulb was seen in 33%. When the gastric fundus alone was involved, transcardial extension was seen in four of 10 patients, and when only the antrum was involved, transpyloric extension was present in six of seven patients. One-third of the patients with gastric lymphoma secondary to disease in adjacent structures had contiguous involvement of the esophagus or duodenum. This study shows that transcardial extension cannot be used to differentiate gastric lymphoma from adenocarcinoma, and it confirms the frequent occurrence of transpyloric tumor extension in patients with gastric lymphoma.

Jackson CE, Brownlee RW, Schuman BM, Micheloni F, Ghironzi G. Observations on gastric cancer in San Marino. I. Familial factors. *Cancer* 1980;45:599-602.

The Republic of San Marino (RSM) is a 23-square mile independent country within Italy with a population of 20,000. A large percentage of deaths have been found to be due to gastric cancer (9.2% of all death certificate diagnoses for 1969 through 1973). The frequency of gastric cancer in the families of all 36 patients (78% male) who were born and died in RSM with this diagnosis for this period was compared with the frequency in relatives of age and sex-matched controls. Although 42-44% of both groups had relatives with death certificate diagnoses of stomach cancer, 25% of the patients had first degree relatives affected versus 5.6% of the controls. A high prevalence has also been reported in the

area of Italy near RSM. San Marino's size and stability of population provide unique opportunities for elucidating genetic and environmental etiologic factors in stomach cancer.

Jara FM, Lewis JW Jr, Magilligan DJ Jr. Operative experience with infective endocarditis and intracerebral mycotic aneurysm. *J Thorac Cardiovasc Surg* 1980;80:28-30.

The surgical management of eight patients with infective endocarditis and intracerebral mycotic aneurysm is presented. Three patients had craniotomy before valve replacement and four patients had valve replacement before craniotomy. There were no deaths related to the valve replacement or craniotomy. Two of the eight patients died in the hospital of continuing sepsis resulting from undrained foci of infection. It is concluded that the drug-addicted patients with a mycotic aneurysm and hemodynamic decompensation from endocarditis can be successfully treated by staging the operations according to the more severe problem.

Javier R, Dumler F, Park JH, Bok DV, Riley RW, Levin NW. Long-term treatment with minoxidil in patients with severe renal failure. *J Cardiovasc Pharmacol* 1980;2:S149-55.

Clinical trials have confirmed the effectiveness of minoxidil as an antihypertensive drug in patients with normal or mildly decreased renal function. In previous studies the number of patients with severe renal failure has been small or the duration of follow-up not long. We have treated 58 patients, most of them on maintenance hemodialysis, with minoxidil for refractory hypertension. In most patients treatment of hypertension was reduced to two drugs plus minoxidil, and blood pressure decreased significantly from $205/120 \pm 10/5$ to $150/80 \pm 5/5$ mm Hg ($P < 0.001$) without evidence of orthostatic hypotension and independent of the degree of renal failure. Retinopathy, when present, improved in all patients. In five of 11 patients with malignant hypertension, renal function improved enough so as to make maintenance dialysis unnecessary. The most common side effects were hypertrichosis and weight gain, while drowsiness and orthostatic hypotension were infrequent. Asymptomatic and uncomplicated pericardial effusions occurred in six patients, none of whom required discontinuation of minoxidil. Long-term minoxidil therapy is highly effective in the management of patients with refractory hypertension and advanced renal failure. Our results also suggest that the indications for minoxidil therapy may be broader than initially thought.

Marzilli M, Goldstein S, Trivella MG, Palumbo C, Maseri A. Some clinical considerations regarding the relation of coronary vasospasm to coronary atherosclerosis: A hypothetical pathogenesis. *Am J Cardiol* 1980;45:882-86.

This study explores the relation between coronary arterial spasm and the development of coronary atherosclerosis. The clinical history and coronary angiographic and electrocardiographic data in 212 consecutive patients with ischemic heart disease were correlated. These patients were classified into four groups: Group 1, patients without angiographic evidence of atherosclerosis; Group 2, patients with single vessel disease; Group 3, patients with double vessel disease; and Group 4, patients with significant narrowing of major coronary arteries. Although spontaneous angina occurred in all four groups, it was more common (55%) in the patients in Group 1, who were predominantly female and young. Spontaneous angina was confirmed in Group 1 with several techniques, including thallium-201 scintigraphy, ergonovine administration and electrocardiography during attacks of pain. Prior myocardial infarction was present with similar frequency in all four groups. A patient is discussed whose spontaneously occurring coronary arterial spasm later progressed to fixed arteriosclerotic narrowing requiring coronary bypass surgery. These observations and a review of the literature lend support to the hypothesis that coronary arterial spasm can be a possible antecedent leading to the later development of fixed atherosclerotic coronary arterial obstruction.

Nichols RD, Pinnock LA, Szymanowski RT. Metastases to parotid nodes. *Laryngoscope* 1980;90:1324-28.

The differential diagnosis of masses in the preauricular and retro-mandibular regions includes a number of diseases in addition to primary tumors of the parotid. The lesions most commonly misdiagnosed as parotid tumors are intraparotid lymph nodes involved with inflammatory or neoplastic disease. Metastatic tumors in parotid nodes are unusual but must be considered. We present 12 patients with isolated metastases to parotid lymph nodes. Nine of the patients had primary tumors in the local afferent lymphatic bed. Three patients had metastases from unknown or distant sites. The majority of tumors that metastasize to the parotid are of cutaneous origin. Six of the patients had squamous cell carcinomas, three had adenocarcinomas, two melanomas, and one a small cell carcinoma. The treatment of parotid metastases from local tumors is surgical removal of the parotid and associated regional nodes with postoperative irradiation therapy in certain instances. Management of the facial nerve should follow those principles appropriate for primary parotid tumors.

Riddle JM, Magilligan DJ Jr, Stein PD. Surface topography of stenotic aortic valves by scanning electron microscopy. *Circulation* 1980;61:496-502.

Surface features of 19 stenotic aortic valves from patients undergoing valve replacement were investigated by scanning electron microscopy. Villi, prominent on five valves, were disturbed either singularly or in clusters and differed in shape. Endothelial cells had microvilli and bulbous surface projections. Endothelial dis-

ruption with a focal loss of endothelial cells was uniformly observed. Erythrocytes were found scattered over the exposed subendothelial surface or enmeshed within fibrin networks on 11 of the valves. Activated leukocytes were seen on four valves and showed veil-like projections as well as microvilli. Platelets, observed on three valves, displayed pseudopodial formation and hyalomeric spreading, signifying an increased degree of membrane response. Most platelet aggregates were composed entirely of dendritic forms (reversible aggregates), but a few also contained spread forms (irreversible aggregates). Focal deposits of crystalline material, presumably containing calcium, were observed in areas of endocardial disruption.

Talbert J, Gruenberg JC, Brown RS. Peritoneal lavage in penetrating thoracic trauma. *J Trauma* 1980;20:179-81.

Fifty-one patients with penetrating wounds of the thorax at or below the fourth intercostal space were evaluated with peritoneal aspiration and lavage. Nineteen gunshot wounds and 32 stab wounds were studied, and there was a 22% incidence of diaphragmatic penetration and/or intra-abdominal injury. There were ten true positive and one false positive studies. There were 39 true negative and one false negative lavages. Peritoneal aspiration and lavage is a test of high sensitivity (91%) and specificity (98%). It has proven to be a useful screening technique in patients with penetrating wounds of the thorax. Peritoneal aspiration and lavage identify patients with diaphragmatic penetration and intra-abdominal injury and minimize negative exploration.

Teasdall RD, Frayha RA, Shulman LE. Cranial nerve involvement in systemic sclerosis (scleroderma): A report of 10 cases. *Medicine* 1980;59:149-59.

In contrast to other connective tissue diseases, neurological lesions and in particular cranial nerve involvement are rarely encountered in systemic sclerosis (scleroderma). Recently, we have encountered trigeminal sensory neuropathy and other cranial nerve lesions in ten patients with this disease. The purpose of this study is to present these cases and to discuss possible mechanisms for the neurological deficits.