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Abstracts Of Recent Publications Of The Professional Staff Of The Henry Ford Hospital And The Edsel B. Ford Institute For Medical Research

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ABSTRACTS OF RECENT PUBLICATIONS OF THE PROFESSIONAL
STAFF OF THE HENRY FORD HOSPITAL AND THE
EDEL B. FORD INSTITUTE FOR MEDICAL RESEARCH

*STUDIES ON THE MECHANISM OF AMINONUCLEOSIDE-INDUCED NEPHROSIS IN THE RAT. P. BARTLETT, B. GERULAT, AND S. SHELATA. Fed. Proc. 18:186, 1959.

Structural similarity of adenosine and the aminonucleoside, 6-dimethylamino-9-(3'-amino-ribofuranosyl)-purine, suggests that the mechanism by which the latter induces nephrosis in the rat might involve interference with adenosine metabolism at the nucleoside, nucleotide, or nucleic acid level. Results of initial studies of this aspect of the metabolism of aminonucleoside labeled with tritium by the Wilzbach procedure form the basis of the present report. Both kidney and liver tissue, obtained from normal adult rats rendered nephrotic by daily subcutaneous injections of 1.5 mg. labeled aminonucleoside (10 microcuries per mg.) per 100 gm. body weight for a period of 10 days, have been processed by the procedure of LePage and Heidelberger for the isolation of the barium salts of RNA and DNA. Under these conditions no incorporation of radioactivity was apparent in either kidney RNA or kidney and liver DNA. Our measurements do, however, indicate the presence of the isotope in liver RNA. Isotope was also found in 4% perchloric acid extracts of kidney and of liver tissue made prior to removal of phospholipids and isolation of the nucleic acid fractions. Work now in progress should enable us to determine the chemical nature of the radioactivity of the perchloric acid extracts and the liver RNA.

*EFFECT OF DIETARY BILE ACIDS ON IN VIVO CHOLESTEROL METABOLISM IN THE RAT. W. T. BEHER AND G. D. BAKER. Proc. Soc. Exper. Biol. & Med. 98:892, 1958.

A 3-week period of feeding a diet containing 0.5% cholic acid did not alter serum and adrenal total cholesterol levels. However, a slight but significant increase in liver total cholesterol was observed. Dietary dehydrocholic acid had no effect on serum, liver or adrenal total cholesterol levels. Cholic acid increased serum bile acid had no effect. Dietary cholic acid reduced rates of synthesis and mobilization of cholesterol in both liver and adrenal. Dehydrocholic acid produced similar results but to a lesser degree. Accumulation and mobilization of serum cholesterol were retarded by dietary cholic acid, and slightly by dehydrocholic acid.

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Abstracts

RELATIONSHIP OF LITTLE'S DISEASE TO PREMATURE BIRTH. J. A. CHURCHILL. A.M.A. J. Dis. Child. 96:32, 1958.

A study of 76 patients with Little's disease revealed that they could be segregated into two groups having relatively distinct clinical characteristics. One group, called simple spastic diplegia, was found to be composed of persons who, for the most part, had had low birth weights. In sharp contrast, low birth weight was not a prominent feature of the other group, which was called complex diplegia. The significance of low birth weight (prematurity) in the pathogenesis of simple spastic diplegia is discussed.

MYXOMA OF THE RIGHT ATRIUM, WITH VARIABLE RIGHT-TO-LEFT SHUNT; CLINICAL AND PHYSIOLOGIC OBSERVATIONS AND REPORT OF A CASE WITH SUCCESSFUL OPERATIVE REMOVAL. E. O. COATES, JR., AND ELLET H. DRAKE. New England J. Med. 259:165, 1958.

A case myxoma of the right atrium presenting unusual diagnostic features is reported. The demonstration by appropriate arterial-blood studies of a right-to-left shunt (through a patent foramen ovale), varying with change in position, provided an important clue to the correct diagnosis. Findings at cardiac catheterization closely resembled those of Ebstein's syndrome. A definitive diagnosis was obtained

Abstracts

by angiocardiography. Successful surgical removal of the tumor was accomplished by open-heart operation, using a pump oxygenator and a stopped heart. In view of the fact that cure is now possible, the detection of intracardiac myxomas during life has become of major importance.

PHILOSOPHY OF THE MANAGEMENT OF CORONARY OCCLUSION. L. C. DICKSON, JR. *Postgrad. Med.* 24:3, 1958.

The physician managing a patient with a coronary occlusion will be wise to make an honest estimate of the restrictions necessary and try to avoid those that are unnecessary and arbitrary. He should issue the restrictions to the patient, with explanations as to why they are necessary. The patient will take them with much better grace from a doctor than from nurses, aides, orderlies or, in some instances, even from the junior staff members. If the patient is harboring hostility, he should be given a chance to vent his feelings. A leading remark, such as, "All this instruction as to what you can and can't do must be making you pretty mad," often will open the floodgates and allow the patient to relieve himself of stored-up tension. It is important to remember that the patient detests helplessness, and an under-

Abstracts

standing and tolerance of his negative feelings in the catastrophic situation of myocardial infarction may make a real difference in his immediate progress and ultimate prognosis.

LEIOMYOSARCOMA OF THE NASOPHARYNX. G. D. DOBBEN. A.M.A. Arch. Otolaryngol. 68:211, 1958.

A previous report of a leiomyosarcoma of the nasopharynx cannot be found in the medical literature. Geschickter, in classifying sarcomas of the nasopharynx, listed two cases as myosarcomas. One of these was a rhabdomyosarcoma, and he has illustrated this tumor. The second case, which is listed as being myosarcoma, has no further explanation. An original case report of a leiomyosarcoma of the nasopharynx has been presented with the radiological and histological findings.

INTERMITTENT HYDRARTHROSIS (PERIODIC BENIGN SYNOVITIS). D. C. ENSIGN AND J. W. SIGLER. Postgrad. Med. 24:30, 1958.

We can only express our own thinking on this fascinating clinical picture by saying that intermittent hydrarthrosis or periodic benign synovitis is a condition which we often suspect, seriously consider, and occasionally diagnose; however, we rarely find it in cases which are thoroughly studied and systematically followed. Like the other instances of periodic disease, its cause is still shrouded in mystery. Again quoting from an authority of the past, we conclude with the opening sentences from the discussion by Moore which was the first article in English on this subject, published 94 years ago: "The subject of periodicity, or the tendency manifested by certain phenomena of life to recur after equal or nearly equal intervals of time, is still one of the curiosities of medical science. It has been often observed, yet not explained."

THE IMMOBILIZATION OF FRACTURES. J. L. FLEMING. Indust. Med. & Surg. 27:410, 1958.

A famous surgeon who, when asked how long a certain fracture should be immobilized, said "until it is healed." The statement, "until it is healed," is essentially correct; its only fault is its incompleteness. Healed for what? Weight-bearing or just to support the weight of a distal phalanx? For a sitting job or for hopping freight trains? Healed for whom? A child or an octogenarian? An athlete or an executive? This paper emphasizes the temporal relationship between immobilization and motion as they vary with the location of the injury and with the many imponderables inherent in the patient. A planned approach, specifically designed for the individual patient, will afford the largest number of successful results with the smallest number of permanently disabled patients.

Abstracts

*DIABETOGENIC EFFECTS OF GROWTH HORMONE; ROLE OF THE ADRENALS IN NITROGEN LOSS. O. A. GAEBLER, R. GLOVINSKY, T. VITTI, AND T. G. MASKALERIS. *Diabetes* 8:57, 1959.

A highly purified bovine growth hormone preparation was tested in normal and depancreatized bitches. In normal animals, its nitrogen storing action was similar to that of other purified growth hormone preparations; in depancreatized animals, the diabetogenic effects were very severe, despite absence of noteworthy amounts of corticotropin or thyrotropic hormone. Induction of nitrogen storage in the depancreatized dog with the present growth hormone preparation did not occur unless the dose of insulin was greatly increased, thus confirming our previous findings. The role of insulin in this connection is briefly discussed. The nitrogen loss produced by growth hormone in depancreatized dogs, which was prevented by adrenalectomy in earlier experiments, is readily reproduced with corticotropin or hydrocortisone; it may therefore be mediated by the adrenals. Unfavorable effects of growth hormone on carbohydrate utilization in depancreatized dogs, which were reduced but not prevented by adrenalectomy in earlier experiments, could not be reproduced with corticotropin or hydrocortisone. Prolonged pretreatment of a depancreatized dog with hydrocortisone did not prevent occurrence of severe glucosuria when growth hormone was also given. It did cause wild excitement and polydipsia, without noteworthy glucosuria.

LABORATORY IDENTIFICATION AND CLASSIFICATION OF STAPHYLOCOCCI. J.E. GREER. *Am. J. M. Tech.* 24:390, 1958.

The current prevalence of nosocomial infections and the importance of the staphylococcal problem make the rapid and accurate identification of pathogenic staphylococci a necessity. The important characteristic for laboratory diagnosis such as production of coagulase, *alpha*-hemolysin, and mannitol fermentation are given. Media for staphylococci are described. Phage typing is, of course, the final step in the labeling of pathogenic staphylococci. It is a test for the susceptibility of bacteria to virus infection. It can show two strains to be different, or that they be identical. It cannot prove two strains to be from identical sources. Phage results may be obtained from various typing centers, but cultures should not be sent without performing all the previously mentioned tests and forwarding the results, together with other pertinent information, along with the culture.

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Abstracts

NEOMYCIN SUSCEPTIBILITY FOR DIFFERENTIATING COAGULASE-POSITIVE FROM COAGULASE-NEGATIVE STAPHYLOCOCCI. J. E. GREER AND R. R. MENARD. *Antibiotics Annual* 1957-58, p. 149.

A study of 814 coagulase-positive and 336 coagulase-negative staphylococci has shown neomycin susceptibility and the coagulase reaction to be correlated in 800 (98.3 per cent) of the coagulase-positive and 310 (92.3 per cent) of the coagulase-negative staphylococci. This offers a method of differentiation similar to the bacitracin differentiation of group A from other beta-hemolytic streptococci. The effect of various techniques and commercial products was also studied.

NUMERICAL DESIGNATION OF STAPHYLOCOCCAL ANTIBIOGRAMS. J. E. GREER. *Antibiotics Annual* 1958-59, p. 881.

Several workers have reported the use of antibiograms in identifying strains of staphylococci. Such use is increasing, for antibiograms are clinically essential and are epidemiologically useful where phage typing is not available. The accuracy of the antibiograms in the identification of strains may be increased by extending the list of antimicrobial agents used (barring similar modes of action and cross resistance), but the number of possible antibiograms increases exponentially ($C = 2^n$). Thus, with only five antibiotics used there are 32 possible antibiograms. The naming of all the antibiotics used, however, plus stating the reaction of the bacteria to each antibiotic, is cumbersome whether written or spoken. A scheme is herewith proposed for a numerical designation of antibiograms.

DENTISTRY'S ROLE IN INTERDEPARTMENTAL HOSPITAL RELATIONS. F. A. HENNY. *J. Oral Surg.* 16:285, 1958.

Dentists are an integral part of the total health team and have much to contribute to the care of hospitalized patients. Because of the increasing quality of dental education, it is anticipated that dentistry will play an increasing part in hospital organizations. To meet these responsibilities and to produce an ever higher level of quality of patient care, dentistry long ago established special fields of interest and study which today are the recognized dental specialties. Basically these include oral pathology, oral roentgenology, orthodontics, prosthodontics, pedodontics, dental anesthesiology, periodontics, oral surgery and dental research, in addition to the broad field of operative dentistry.

Abstracts

HIGH-POTENCY PROGESTATIONAL AGENTS IN HUMAN PREGNANCY. C. P. HODGKINSON, E. J. IGNA AND A. P. BUKEAVICH. *Ann. New York Acad. Sc.* 71:753, 1958.

Sixty-one obstetrical patients, whose early pregnancies were complicated by uterine bleeding, presumably of decidual origin, were treated with 17 α -hydroxyprogesterone caproate and 17 α -ethynyl-19-nortestosterone. In all, 63 patients were treated, but 2 were eliminated because their bleeding episode resembled that of implantation, and treatment was begun after bleeding had spontaneously ceased. This report includes only those patients whose therapy was initiated during the phase of active bleeding and in whom the clinical diagnosis of threatened abortion had been made. The results were appraised according to the apparent influence of the drugs upon (1) total pregnancy salvage, (2) duration of gestation, and (3) the dynamics of abortion.

HIGH POTENCY PROGESTERONE DRUGS AND THREATENED ABORTION. C. P. HODGKINSON, E. J. IGNA AND A. P. BUKEAVICH. *Am. J. Obst. & Gynec.* 76:279, 1958.

In threatened abortion characterized by active uterine bleeding, a comparative appraisal was made of the influence of two high-potency progestational agents upon: (1) total pregnancy salvage, (2) duration of gestation, and (3) dynamics of abortion. In the luteoid-treated group the pregnancy salvage was 39.4 per cent; a tendency to early delivery was noted in 40 per cent of the patients; and the dynamics of abortion were delayed for 4 weeks or longer in 46 per cent of patients who aborted. These results were contrasted with those in a control group of 297 patients evaluated by similar standards in which the pregnancy salvage was 15.5 per cent and the delayed abortion rate 3.36 per cent. The potential pregnancy salvage for obstetrical patients who have active bleeding during early pregnancy was adduced to be 46.8 per cent. On this basis 84 per cent of the salvageable pregnancies were preserved by the luteoid agents.

OBSTETRIC HEMORRHAGE. C. P. HODGKINSON. *J. Michigan M. Soc.* 57:988, 1958.

Hemorrhage, for this presentation, is defined as abnormal bleeding from the internal pudendal vascular system, including the utero-ovarian axis, incident to or as the result of pregnancy and its cognate functions. It occurs for three reasons: (1) a break in the continuity of the vessel walls; (2) lessened efficiency of the mechanical hemostatic power of the myometrium; or, (3) deficient blood coagulation.

Abstracts

The treatment of obstetric hemorrhage should be preplanned and aggressively executed. Therapeutic efforts can be categorized into three general disciplines: emergency, diagnostic, and definitive. Definitive therapy depends on precise diagnosis of placenta praevia, poorly contracted uterus, hypofibrinogenemia, or one of the many indications for surgical intervention.

COMPLICATIONS OF LEFT HEART CATHETERIZATIONS USING THE RIGHT TRANSTHORACIC APPROACH. D. KAVANAGH-GRAY AND E. H. DRAKE. *Am. Heart J.* 56:143, 1958.

We have reported the complications encountered during our series of left heart catheterizations. Of the 113 patients catheterized, hypotension developed in 3, sufficient chest pain to require analgesics was present in 19, hemoptysis appeared in 2, and routine, 24-hour chest roentgenograms revealed air or fluid in a pleural cavity in 8. In 3 instances, major complications have occurred in the form of embolic phenomena and cardiac tamponade. There have been no deaths. The incidence of complications has been significantly higher in cases in which the left atrium was not entered on the first attempt. It has been our impression, and that of other investigators, that puncturing the base of the aorta carries the greatest risk. The safety of the procedure, as carried out here, compares favorably with that of other investigators. It is our conclusion, therefore, that left heart catheterization, utilizing the right transthoracic approach to the atrium, is sufficiently safe to use in cases of diagnostic problems involving the aortic or mitral valves.

NEUROLOGIC MANIFESTATIONS OF MYXEDEMA. S. N. NICKEL AND B. FRAME. *Neurology* 8:511, 1958.

The present study has demonstrated that the nervous system in patients with myxedema is profoundly affected. The intellectual deterioration and the organic mental syndrome have received major emphasis for many years, but more recently there has been interest in the occurrence of coma in myxedema as attested by the many individual case reports in the literature. The occurrence and extent of peripheral nerve involvement in myxedema remain unsettled. Although the abnormal reflexes in myxedema are quite striking, the changes are not those usually seen in peripheral neuritis. Sufficient knowledge is available to postulate mechanisms of action for the neurologic manifestations of myxedema. One of the predominant features in the disease is the tendency for myxedematous collections to occur in various tissues throughout the body. It is most commonly seen in the subcutaneous tissue, especially about the eyes, but also occurs in serous cavities such as the pericardium and pleura. Some of the neurologic signs of myxedema could result from a similar interstitial

Abstracts

accumulation of myxedematous material in the nervous system. From the evidence gathered in this study, neurologic manifestations form a prominent part of the clinical syndrome in myxedema. It is felt that, with closer observation, these changes will be found to occur more often than heretofore emphasized.

ENDOMETRIOSIS AND INFERTILITY. J. P. PRATT. *Internat. J. Fertility* 3:151, 1958.

Estimation of the incidence of endometriosis depends upon when and by whom the diagnosis is made. Most of the reported cases of this disease have been observed in a special group of women who consulted a physician for a specific complaint. For this reason, they do not represent a cross section of the general population. The incidence of infertility is likewise elusive. Mere association of endometriosis and infertility is not satisfactory evidence that a causal relation exists. The symptoms of endometriosis vary with the location of the condition, because the symptoms are an expression of the reaction of the host tissue. The management of endometriosis is highly individualized. Conservatism is emphasized.

PHENPROCOUMON (MARCUMAR) I. AN AGENT FOR SHORT-TERM ANTI-COAGULANT THERAPY. E. M. PRIEST AND H. G. PAULI. *Am. J. Cardiol.* 2:61, 1958.

One hundred and sixty patients received short-term anticoagulant treatment with phenprocoumon (marcumar). The effects of different initial doses of phenprocoumon were studied in 134 cases. Phenprocoumon proved to be a potent anticoagulant. Thirty or 36 mg of phenprocoumon produced the desired hypocoagulability of the blood as promptly as an initial dose of 51 mg, when these doses were followed on the second and third day, depending on findings in the Quick test, by doses which ranged from 0 to 9 mg. After therapeutic levels (prothrombin complex time 25 to 35 sec) had been reached, these were maintained with daily phenprocoumon doses of usually 3 or 4.5 mg. Both low and excessively high prothrombin time values were only rarely encountered with this dosage plan. Thus, in general, the desired depression of the blood clotting mechanism was easily maintained. The incidence of hemorrhagic complications was 3.75 per cent. Vitamin K₁ (mephyton or konakion) was an effective antagonist against undue depression of the blood clotting mechanism. These findings were compared with those reported by the original Swiss workers and by American and British students. It is concluded that phenprocoumon is an effective agent for short-term anticoagulant therapy and that selected therapeutic prothrombin levels can be maintained with comparative facility.

Abstracts

PERCEPTIVE HEARING LOSS. H. F. SCHUKNECHT. *Laryngoscope* 68:429, 1958.

Perceptive hearing loss here refers to that type due to disorders of the auditory pathways and cortex which is in accordance with the recent terminology suggested by the Committee for Conservation of Hearing of the American Academy of Ophthalmology and Otolaryngology. No one has yet evolved a completely clear concept of the psycho-acoustic manifestations resulting from lesions of the auditory pathways and centers. It is already apparent, however, that such lesions result in losses of intelligibility, varying from the mildest, detected only by special discrimination tests, to severe auditory aphasia. I am certain, however, that further physiological experimentation and clinical study will provide a better basis for the regional and functional diagnosis of disorders involving the auditory pathways.

*THE STRUCTURE OF SCHMIDT'S ALUMINUM HYDROXIDE GEL. P. SOUSZ SANTOS, A. VALLEJO-FREIRE, J. PARSONS AND JOHN H. L. WATSON. *Experientia* 14:318, 1958.

Aluminum hydroxide gels are used as adsorbents for proteins, enzymes, and viruses, particularly for preparing vaccines. By x-ray diffraction and electron microscopy it is shown that the gel aluminum hydroxide (SCHMIDT'S gel) is composed of particles, different by reason of their structure, morphology and dimensions to those of WILLSTATTER'S C-gamma gel, but similar to those which compose WILLSTATTER'S C-Beta gel.

RENAL DISORDERS AND DIABETES MELLITUS. F. W. WHITEHOUSE. *Postgrad. Med.* 24:54, 1958.

A number of renal complications associated with diabetes mellitus have been discussed, including glycogen nephrosis, acute and chronic pyelonephritis, necrotizing renal papillitis and diabetic nephropathy. Only assiduous care of the diabetes throughout his life can prevent or postpone these serious complications in the diabetic patient. Hence, good control is mandatory for the prevention of pyelonephritis. An earlier and higher incidence of diabetic nephropathy in the poorly controlled diabetic also has been demonstrated. When significant degenerative lesions have occurred, the progressively downhill course is difficult to halt. The patient must be not only encouraged during these months and years of trial but also kept as symptom-free as possible. Future advances in the knowledge of the nature of diabetes and its complications will help improve our over-all care of the diabetic patient.



