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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 EDESEL B. FORD INSTITUTE FOR MEDICAL RESEARCH

EFFECTS OF THE ANTIHISTAMINE PYRROBUTAMINE ON SOFT TISSUE WOUND HEALING. BALDRIDGE, O. L., JR. *J. Oral Surg.* 13:183, 1955.

A method for the study of wound healing is offered in an attempt to determine the effects of an antihistamine on the healing rate of soft tissue. The method involves the infliction of a standardized cutaneous defect in the flank of the guinea pig. On the basis of the experimental results described herein, the following conclusions are drawn. An injectable antihistamine, pyrrobutamine, produces a significant increase in the rate of wound healing. There appears to be an optimum dose in the guinea pig for beneficial effects on wound healing. Preoperative, as well as postoperative, administration of the antihistamine appears to be necessary to attain the maximum increase in the rate of wound healing.

THE COEXISTENCE OF MALIGNANT TUMORS IN THE TRACHEA AND A DISTAL SECONDARY BRONCHUS. BOLSTAD, D. S. *Ann. Oto. Rhin. & Laryng.* 64:422, 1955.

The rarity of separate tumors in the tracheobronchial tree is felt to be of sufficient note to be recorded. The case here reported demonstrates two separate lesions of the tract, widely enough separated as to be considered two independent tumors. Whether this is a simultaneous development of two distinct tumors of similar structure one cannot say. It is possible that the tracheal lesion may be an implant, inasmuch as it apparently was not present at the time of the first bronchoscopy. Whatever the source the occurrence of the two lesions is quite unusual.

EXPERIENCE WITH PHENYLINDANEDIONE IN THE MANAGEMENT OF ACUTE MYOCARDIAL INFARCTION. BRENNEMAN, G. M., AND PRIEST, E. M. *Am. Heart J.* 50:129, 1955.

The clinical use of 2 phenyl-1, 3-indanedione as an anticoagulant was reported in 1947. The drug has a coumarine-like action but is not a coumarin derivative. It is reported to have a rapid onset of action, a wide range of therapeutic safety, and few toxic reactions. This drug has been used at the Henry Ford Hospital as the routine oral anticoagulant since June, 1953. We are reporting our experience in 251 consecutive cases of proved myocardial infarction to whom the drug had been administered for a minimum of forty-eight hours. These cases were unselected except to exclude those patients in whom any type of oral anticoagulant was contraindicated, as judged by the usual and accepted criteria, and to exclude all those cases receiving the drug for less than forty-eight hours. Therapeutic levels of hypoprothrombinemia were rarely achieved in less time. Seven patients expired less than 48 hours following the initial dose of phenylindanedione and are omitted from this series. A series of 251 cases of acute myocardial infarction treated during the acute phase with phenylindanedione is reported. All cases treated for less than 48 hours are excluded. The over-all recovery rate was 90 per cent. The incidence of thromboembolic compli-

cations was 3.5 per cent. Major hemorrhagic complications occurred in only 1.6 per cent of the total cases. Two cases of skin eruption requiring the immediate discontinuation of the drug were observed. It is our belief that, at present, this is the oral anticoagulant of choice.

**AN EVALUATION OF DILATATION OF THE SPHINCTER OF ODDI.** BRUSH, B. E. PONKA, J. L., DAMAZO, F. AND WHITCOMB, J. Arch. Surg. 70:766, 1955.

The persistence of symptoms after biliary tract surgery is distressing to the surgeon and patient alike. The most frequent cause of persistence of symptoms is an incorrect or incomplete diagnosis. When gallstones are found on x-ray examination, it is usual to attribute all symptoms occurring in the upper right quadrant of the abdomen to their presence. It is of the utmost importance that patients with gall-bladder disease undergo a very thorough evaluation before concluding that the gall bladder is their only or even chief problem at the sphincter of Oddi. Anomalies in this region have been emphasized as producing symptoms which have been attributed to the gall bladder. Dilatation of the sphincter of Oddi by graduated dilators at the time of choledochostomy gives valuable information about the status of the sphincter. Dilatation of the sphincter permits better drainage of the common bile duct and should permit debris and gravel to pass into the duodenum. Thus the number of residual stones in the ducts and liver should be less. When carefully performed, dilatation of the sphincter does not add to morbidity or mortality over the usual choledochostomy procedure. When dilatation of the sphincter is unsatisfactory, the duodenum should be opened and the sphincter dealt with under direct vision. Graduated dilators should be passed through the sphincter of Oddi in every case in which the common bile duct is opened.

**EXPERIMENTAL PROSTATECTOMY IN THE RAT.** CHASE, W. E., AND SCOTT, W. W. J. Urol. 73:866, 1955.

In this group of experiments, the effects of total prostatectomy on other endocrine organs, particularly the pituitary, testes, and adrenals, have been studied in the young male albino rats. The evidence obtained in these series of comparatively few animals indicates that there is no apparent specific effect on the weights or cytological picture of the livers, kidneys, pituitaries, adrenals, testes and seminal vesicles after the prostate gland is completely removed. That the removal of a single end-organ such as the prostate gland should produce any changes in pituitary, testes or adrenals is a matter of conjecture. For example, it is quite possible that the other end-organs receiving stimulation from the testes, such as seminal vesicles, coagulating glands and even the penis and larynx, must also be removed completely before the pituitary-testis-end-organ cycle is disrupted enough to produce definite changes. Removal of the prostate alone apparently does not affect this cycle.

**PRIMARY MALIGNANT TUMORS OF THE HAND.** CLIFFORD, R. H., KELLY, A. P., JR. Plast. and Reconstruct. Surg. 15:227, 1955.

This is a study of the incidence of malignant tumors of the hand in a hospital population and the relationship of such tumors to those in the body as a whole. The

population studied is a group of 757,827 persons registered at Henry Ford Hospital and its Clinics. This number represents the total registrations, exclusive of patients seen in the Emergency Department. Included are many persons seen throughout their lives for all major and minor illnesses and many normal persons enrolled in preventive medicine programs. We have been impressed by the low incidence of malignancy involving the hand in our material. If our assumption, that this series represents an accurate portrayal of the general population, is correct, the average physician will not see more than a few of these cases. Under these circumstances, special efforts will be necessary to see that these patients receive adequate care. An incidence 0.008% of hand malignancy was found in 757,827 persons. In 9,741 tumors, those involving the hand comprised 0.6%. The relation of hand tumors to tumors of similar pathological categories has been demonstrated.

**THROMBOPHLEBITIS MIGRANS AND VISCERAL CARCINOMA.** DUNHAM, R. H. "THROMBOSIS AND EMBOLISM. I. International Conference," Basel 1954, p. 487: 490.

Thrombophlebitis migrans is frequently the initial manifestation of obscure visceral carcinoma, especially in the body or tail of the pancreas. This relationship is unexplained. Local histological and bacterial factors are not consequential, etiologically; usual measured factors in coagulation are unchanged. Apparently such recurrent thrombi occur predominantly in the presence of a mucinous type of carcinoma. The same coagulative phenomenon is exhibited in carcinoma metastatic to the pancreas. The incidence of thrombophlebitis increases as the gradient of malignancy is higher. Surgical removal of the original growth usually causes cessation of the thrombophlebitis. Carcinoma which from its location less frequently metastasizes to the liver has, inexplicably, a higher incidence of thrombophlebitis. Some resistance to anticoagulant therapy has been observed. A decrease in antitryptic substances may occur. These and other challenging tangibles offer newer investigative approaches in the study of this one facet of the problem of thrombogenesis.

**ENDOCARDIAL FIBROELASTOSIS: ROENTGEN APPEARANCE.** EYLER, W. R., ZIEGLER, R.F., SHEA, J. J., AND KNABE, G. W. *Radiology* 64:797, 1955.

Endocardial fibroelastosis is being recognized with increasing frequency and has now been described as a cause of cardiac failure and death in patients of all age groups. Nine sample cases have been abstracted and are presented, of which eight were in infancy and early childhood, and one in a twenty-nine year old woman. The disease may be associated with other cardiac anomalies, and requires complete study for classification. Roentgen examination in infants with the disease usually shows a globular heart, and prominent vessels during failure.

**TOTAL COLECTOMY IN ULCERATIVE COLITIS.** FALLIS, L. S., AND BARRON, J. *West J. Surg., Obst. & Gyn.* 63:452, 1955.

When operative intervention is indicated in ulcerative colitis the ultimate goal of the surgeon should be extirpation of the entire colon and rectum. Under ideal conditions the three-fold operation of ileostomy, removal of the entire colon and

resection of the rectum may be carried out at one sitting. On other occasions graded procedures may be advisable. Ileostomy alone often is a lifesaving measure but always it should be considered only as a preliminary step of a plan which ultimately will culminate in removal of all the colon and rectum. This presentation deals with the indications for the various types of operative procedures and with the complications arising there from. Special attention will be focused on the description of a modification of technic which accomplishes removal of the colon and rectum through and abdominal incision.

RELATIONSHIP OF CORTICOTROPIN (ACTH) TO THE HEALING OF GASTROINTESTINAL ANASTOMOSES. GEOGHEGAN, T., AND BRUSH, B. E. Arch. Surg. 70:871, 1955.

Several surgeons have noted that wounds in patients under treatment with corticotropin (ACTH) or cortisone heal without delay, although early experimenters demonstrated that these agents inhibit healing. In a small series of patients treated with corticotropin (ACTH) and cortisone after gastrointestinal anastomoses treatment with corticotropin and cortisone did not cause leakage at the suture lines. Post-mortem examination of the anastomoses in two patients showed satisfactory healing. In experimental colon anastomoses in ten dogs corticotropin in extremely high doses did not alter the strength or histological characteristics of the anastomoses as compared with ten non-treated controls.

CARCINOMA OF THE MALE BREAST. JACKSON, P. P., AND MUNNELL, E. R. Canad. M. A. J. 72:814, 1955.

Carcinoma of the male breast is not essentially different from carcinoma of the female breast, except in prognosis. It is commonly considered to carry an extremely grave prognosis. Although the prognosis is poorer in male than in female breast carcinoma, it is certainly not hopeless. We have reported here a survival rate of two out of four cases for over ten years, with three others surviving ten, eight and six years respectively before succumbing to metastases. Twelve cases of male breast malignancy observed over a 31-year period are presented. Of four cases observed for more than 10 years, two still survive. A radical Halsted mastectomy is recommended for all operable cases of male breast carcinoma.

MYOCARDIAL INFARCTION IN WOMEN. JAMES, T. N., POST, H. W., AND SMITH, F. J. Ann. Int. Med. 43:153, 1955.

This is a review of 146 cases of women with myocardial infarction. The average age of menopause was 47.4 years, and the average age of initial infarction was 16.6 years later. There is a sharp rise in incidence of myocardial infarction after the fifth decade of life in this series. This is difficult to account for solely on the basis of a gradual increase of atherosclerosis during this period. Hypertension and/or diabetes was present in 69.9% of the entire series, 63.6% of the living patients, 77.6% of the fatal cases, and 90.9% of the premenopausal group. Of the 11 women who had their initial infarction prior to menopause, only one failed to have an accompanying condition that could conceivably have contributed to atherosclerosis. In

addition to the well recognized effect of estrogens on cholesterol metabolism and experimental atherosclerosis there are other important effects of estrogens on the blood vessels and the blood. Some of these are discussed. Factors contributing to the relative immunity of premenopausal women to myocardial infarction are reviewed.

DEVIATIONS FROM NORMAL WEIGHT IN CHILDREN. *IN WEIGHT CONTROL; A COLLECTION OF PAPERS PRESENTED AT THE WEIGHT CONTROL COLLOQUIUM.* JOHNSTON, J. A. Ames, Iowa, Iowa State College Press, 1955, pp. 132-142.

The pattern of growth is a highly individual one and this fact tends to be obscured rather than clarified by the averaged process. The concept of physiological age rather than chronological is discussed. The failure of weight to reflect composition is pointed out. A number of factors which affect the nitrogen and calcium content of the body are illustrated. It is suggested that lacking objective measures of these on body composition, useful inferences may be made from a careful history and physical examination.

BRUNNER-TYPE GLANDS IN REGIONAL ENTERITIS. KAWEL, C. A., JR., AND TESLUK, H. *Gastroenterology* 28:810, 1955.

A study of a series of cases of regional enteritis confirms observations that aberrant Brunner-type glands are sometimes encountered in the resected ileum in this disease. Such changes were found in 16 of 34 cases studied. A microscopic description of these aberrant glands is presented with a discussion of possible etiologic factors. A clinical application in prognosis is suggested, since the subsequent recurrence rate was 67 per cent in the group of 16 cases of regional ileitis showing Brunner-type gland development in the resected ileum; this is contrasted with the entire lack of recurrences in 18 cases of regional ileitis exhibiting no Brunner-type glands in the resected area.

THE FATE OF FEMORA WITH PATHOLOGIC FRACTURES DUE TO MALIGNANT TUMORS, STABILIZED BY INTRAMEDULLARY NAILS, AS SHOWN BY SERIAL ROENTGENOGRAMS. LYFORD, J., III. *Radiology* 64:197, 1955.

The treatment of fractures of long bones by intramedullary-nail fixation has become a well accepted procedure. Since 1948 there have appeared several reports of femoral stabilization with intramedullary nails following pathologic fractures, and it has become apparent that this procedure offers a valuable adjunct in the management of these difficult cases. How adequate such intramedullary support really is, and what changes take place in the presence of the intramedullary nails in bones involved by malignant lesions, are questions of great interest. Two cases are reported in which pathologic fractures of the femur were stabilized by intramedullary nailing. In one case the fracture was due to a carcinoma metastatic from the breast and in one to an osteogenic sarcoma. In each instance the patient remained mobile and relatively free from pain until death, about eight months after occurrence of the fracture. Serial roentgenograms showed progressive replacement of the shaft of the involved femur by tumor tissue.

SITUS INVERSUS AND ACUTE CHOLECYSTITIS. MUNNELL, E. R., AND PONKA, J. L. Arch. Surg. 71:151, 1955.

A case of cholecystitis with situs inversus which eventually was treated by cholecystectomy is reported. Greater vigilance on the part of the clinician and radiologist alike is to be sought, since situs inversus can be easily overlooked.

\*X-RAY DIFFRACTION POWDER DATA FOR STEROIDS. PARSON, J., AND BEHER, W. T. Anal. Chem. 27:514, 1955.

X-ray diffraction powder data and powder diffraction photographs for 27 steroids are presented. Visual comparison of the powder patterns for known and unknown steroids was found to be sufficient for identification.

VITREOUS HEMORRHAGE ABSORPTION. SCHIMEK, R. A. AND STEFFENSEN, E. H. Am. J. Ophth. 39:677, 1955.

The management of vitreous hemorrhage always has been an irksome problem for the ophthalmologist. The difficulties in estimating clinically the actual amount of blood in the vitreous and the variable absorption make clinical evaluation of therapy unreliable. This present report gives the results of an experimental study on rabbit eyes of (1) the effects of intravitreal injection of hyaluronidase and of streptokinase-streptodornase on liquefaction of the vitreous, and (2) the influence of parenteral injections of ACTH on absorption of measured amounts of autogenous blood injected into the vitreous. Intravitreal injection of 150 units of hyaluronidase liquefied the vitreous in rabbit eyes with only mild inflammatory reaction. Larger doses caused marked inflammation, and some retinal necrosis, while smaller doses did not liquefy the vitreous. Intravitreal injection of streptokinase-streptodornase did not liquefy vitreous except in doses producing necrosis and marked inflammation. Systemic injections of ACTH slowed the absorption of blood from the vitreous of rabbit eyes.

PRESBYCUSIS, SCHUKNECHT, H. F. LARYNSCOPE. 6:402, 1955.

In the cochlea, as in all the other organs of the body, there are senescent changes with the passage of time. The classical manifestation of cochlear aging is high tone deafness caused by atrophic changes in the basal coil.

In the past few years I have examined the cochleae of 72 cats, on whom we performed tests of auditory threshold. Behavioral tests were performed on 27, cortical tests on 32, and both cortical and behavioral tests on 13. Three of these 72 animals (4%) had objectively demonstrable hearing losses prior to experimentation, and on histological examination were found to have degenerative lesions in the basal coil.

The pathology in each of the animals typifies Type I presbycusis; the principal features were atrophic degenerative changes in the membranous cochlear labyrinth, including afferent and efferent nerve fibres, which began at the basal end and proceeded toward the apex. The changes parallel closely the pathology described by others for human ears with high tone deafness and is identical to that which I have seen in human ears.

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\*From the Edsel B. Ford Institute for Medical Research.

After consideration of all the evidence it seems that the degenerative change as it proceeds up the cochlear duct affects almost equally and simultaneously the various structures within it, including the afferent and efferent nerve fibres. The reason why the atrophic change selects the basal end is as great a mystery as the process of aging itself. These cochlear changes probably are a manifestation of the same degenerative process affecting supporting tissues elsewhere in the body.

The second type of presbycusis is due to decrease in the population of neurons in the auditory nervous pathways. Ordinarily its onset is in older age, and is superimposed upon the epithelial atrophy already described. The typical findings were present in a human ear which was received in an excellent state of preservation and on which a hearing test had been done 5 hours before death. Thirty minutes after death the right ear drum was removed partially, the stapes was dislocated and the middle ear was filled with 20% formalin solution. Three hours and 50 minutes after death at autopsy the temporal bones were removed and placed in Helly's solution. Histological examination revealed typical epithelial atrophy to the 3.3 mm point. In addition there was 30% to 50% loss of spiral ganglion cells extending from 3.3 to 14.2 mm without accompanying change in the organ of Corti or other structures of the membranous labyrinth.

A corollary to atrophy of the spiral ganglion exists in the brain for it is well established that the aging brain suffers from a loss of nerve cells. The process develops independently of cerebral arteriosclerosis, but may co-exist with varying degrees of it.

The evidence indicates that there are two types of presbycusis. The first, "epithelial atrophy," is characterized by degenerative changes which begin at the basal end of the cochlear duct and proceed toward the apex, affecting almost equally and simultaneously the various structures within it, including the afferent and efferent nerve fibres. The process begins in middle age, progresses very slowly for decades, and manifests itself clinically by progressive limitation of high tone hearing. It is the otological manifestation of an aging process which affects all tissues, a close corollary existing in the skin where the changes are so characteristic they are used as a yardstick to measure the age of the individual.

The second type, termed "neural atrophy," is characterized by degeneration of spiral ganglion cells at the basal end of the cochlea as well as neurons of the higher nervous auditory pathways and usually is superimposed upon varying degrees of epithelial atrophy. Its onset is late in life, it progresses slowly for years, and is characterized clinically by high tone deafness with disproportionately severe loss in auditory discrimination. It is the otological manifestation of an aging process affecting the central nervous system which is characterized by a loss of neuron population and has a corollary in the cerebral cortex where loss of neurons results in senile dementia.

\*ISOLATION AND PROPERTIES OF SUCCINIC DEHYDROGENASE. SINGER, T. P., KEARNEY, E. B., AND ZASTROW, N. *Biochim. et Biophys. Acta* 17:154, 1955.

In previous communications the authors have described the solubilization, assay, and partial purification of succinic dehydrogenase. The purpose of the present note

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\*From the Edsel B. Ford Institute for Medical Research.

is to outline the preparation of the enzyme in an essentially homogeneous state and to designate its salient properties. This enzyme is the primary dehydrogenase in the chain of proteins which link the oxidation of succinate to the reduction of cytochrome c in mitochondrial or purified particulate preparations.

A CLINICAL COMPARISON OF LABORATORY METHODS USED IN CONTROLLING ORAL ANTICOAGULANT THERAPY. SMITH, F. J., AND SCHELLING, V. "THROMBOSIS AND EMBOLISM. I. International Conference," Basel, 1954.

In oral anticoagulant therapy abnormal bleeding is rare when the prothrombin percentage, as measured by the Quick test, is 40% or above. The Owren test and the Ware modification of the Owren test are more sensitive to changes in blood coagulation brought out by anticoagulants in man than is the Quick test. The therapeutic ranges of Owren and Ware spoken of as "30-10%" are in reality 57 and 58% to 39 and 44% in terms of the Quick test and extremely close to Brambel's range of 50-40%. These three therapeutic ranges are relatively safe from bleeding and are believed to be quite satisfactory for prophylactic or long-term ambulatory anticoagulant therapy. Doubt is expressed that much greater ranges of prothrombin depression, which include higher risks of bleeding, can be clearly justified on the basis of results. If greater depressions of prothrombin are desired than those recommended by Owren and Ware, the Quick test will have to be used since the Owren type test becomes unreadable at levels shown much below 40% Quick.

THE USE OF TOPICAL HYDROCORTISONE IN THE TREATMENT OF INFLAMMATORY LESIONS OF THE CORNEA, SCLERA AND CONJUNCTIVA. STEFFENSEN, E. H. Ann. N.Y. Acad. Sci. 61:561, 1955.

In the past, a variety of preparations of hydrocortisone have been tried clinically on anterior segment eye lesions. The most promising of these is 9-alpha-fluorohydrocortisone acetate. Aside from its equal effectiveness in lower concentrations, as yet, there appears to be no other advantage in using this newer preparation. The 9-alpha-fluorohydrocortisone acetate suspensions and ointment elicit more subjective response of irritation. As yet, no local harmful effects have been noted, nor have there been any systemic reactions from its topical use in the eye.



