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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

RHEUMATOID LUNG DISEASE — REPORT OF A CASE WHICH DEVELOPED
IN CHILDHOOD. G. L. BRINKMAN AND L. CHAIKOF. *Am. Rev. Respiratory Dis.*
80:732, 1959.

A case of rheumatoid lung disease is described in which roentgenographic abnormality was first noted at the age of six years, and death from pulmonary insufficiency resulted at the age of fifteen. At autopsy the lungs were markedly cystic but not emphysematous. There was extensive thickening of the alveolar septae. There were no distinct granulomas in any of the viscera. These changes are compared with the findings described in previously reported cases examined at autopsy.

THROMBOTIC THROMBOCYTOPENIC PURPURA OF LONG DURATION.
S. F. CAHALANE AND R. C. HORN, JR. *Am. J. Med.* 27:333, 1959.

The clinical and autopsy findings in a case of thrombotic thrombocytopenic purpura of at least three and probably many more years' duration are reported. The presence of the characteristic vascular lesions material obtained three years before death and a positive serologic test for syphilis, later ascertained to represent a biologic false positive reaction, was discovered eighteen years before death. The literature on thrombotic thrombocytopenic purpura is reviewed and nineteen cases of prolonged survival are analyzed. It is pointed out that endocardial vegetations and occlusion of large blood vessels occur in cases of prolonged thrombotic thrombocytopenic purpura. The occurrence of disordered serum proteins is emphasized. It is suggested that platelet-derived fibrinogen may form the occlusive material in the arterioles and capillaries.

THE COMBINATION OF OXYGEN AND OPTIMUM FRACTIONATION IN
RADIATION THERAPY OF ADENOCARCINOMA. L. A. DUSAULT, W. R. EYLER,
AND G. D. DOBBEN. *Am. J. Roentgenol.* 82:688, 1959.

The results of irradiating spontaneous mammary adenocarcinoma in C₃H mice at the rate of 2,000 r per week to totals of 6,000 r or 8,000 r can be improved by allowing the mice to breathe 95 per cent oxygen and 5 per cent carbon dioxide during treatment; however, the advantage of breaking the total dose into fractions given three times a week as compared to daily treatment is still apparent. Although skin reactions appear to be the same, systemic effects, as measured by number of mice dying before completion of the treatment series, are increased by the gas mixture. These can be minimized by keeping the time of breathing it as short as possible.

DIVERTICULOSIS OF THE COLON. J. D. FOX AND J. L. PONKA. *M. Arts & Sci.*
13:16, 1959.

A brief resume of the problem of diverticulosis is presented. The various roentgen manifestations of this condition are illustrated and described. With an ever-increasing aging population in the United States, this condition is due to gain in frequency and prominence. About 3 per cent of the total population (5,000,000 persons) have diverticulosis, of whom 20 per cent (1,000,000) will have diverticulitis; 15 per cent

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(150,000) of these will require operative treatment. The incidence of associated carcinoma in cases of diverticulosis and diverticulitis ranges from 6 to 10 per cent. Hence, the importance of carefully observing these patients since their symptoms may mask a silent carcinoma. Annual physical examination, including sigmoidoscopic and barium enema examinations, is advised for all persons having diverticulosis. Surgical treatment is advised only for the complications of diverticulitis and for all cases in which the roentgen diagnosis is equivocal with that of carcinoma.

IN VITRO STUDIES ON VITILIGO. F. HU, R. P. FOSNAUGH, AND P. F. LESNEY. *J. Invest. Dermat.* 33:267, 1959.

Data from cytological studies of 18 cases of vitiligo are presented. Included are 15 cases of typical vitiligo, 2 cases of congenital vitiligo and 1 case classified as pseudovitiligo. Our results appear to indicate that a favorable response to combined methoxsalen and ultra-violet light therapy depends on 3 basic mechanisms: 1) the presence of melanocytes which are capable of forming pigment (shown by dopa reaction), 2) the capacity for proliferation and/or migration of active melanocytes from adjacent pigmented areas to vitiliginous areas, and 3) the ability of epithelial cells to receive pigment from the active melanocytes (shown by silver technic). We would like to propose that a factor, equal in importance to the presence of melanocytes capable of forming melanin pigment, is operative in cases of vitiligo which fail to repigment following methoxsalen therapy. It is our opinion that this factor is closely related to the transfer of pigment from the melanocytes to the epithelial cells. We believe that the best method for demonstrating this ability of pigment transfer is by silver staining.

RELATIONSHIP OF THE ORAL ANTICOAGULANTS TO THE BLOOD COAGULATION MECHANISMS. S. A. JOHNSON, E. M. PRIEST, AND M. J. CALDWELL. *Angiology* 10:435, 1959.

The interrelations of prothrombin, Factor VII and PTC as affected by administration of the oral anticoagulants were investigated. When these three blood coagulation components were greatly reduced, fat soluble vitamin K₁ and water soluble vitamin K₁ were given to the patients. In spite of the very minimal differences in molecular configuration between these two compounds, different blood coagulation components appeared in the plasma and serum of the patient. Both vitamin K₁ compounds reduced the prothrombin time.

SUBCUTANEOUS FASCIOTOMY IN THE TREATMENT OF DUPUYTREN'S CONTRACTURE. A. P. KELLY, JR. AND R. H. CLIFFORD. *Plast. & Reconstruct. Surg.* 24:505, 1959.

The subcutaneous fasciotomy is a procedure which offers negligible morbidity and worth-while correction of the deformity caused by Dupuytren's contracture. Its limitations are the frequency of recurrence of the deformity and the danger, inherent in a blind procedure, of injury to important structures. In young patients whose poor health precludes the more formidable fasciectomy, fasciotomy may bring appreciable relief and make one less aggravation in their lives. In instances of advanced contracture, it may release the fingers and allow mobilization and gradual stretching of the nerves, vessels and skin before a fasciectomy. For the patient with arthritic changes, the

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atrophic, or the thick gross hand, fasciotomy should be considered. For middle-aged and elderly patients, it is a very satisfactory procedure which can be supplanted by a fasciectomy or repeated at the earliest evidence of recurrence. It is unquestionably the procedure of choice in older patients where the trouble is limited to a single bandlike deformity which shows no appreciable progression. The surgeon treating Dupuytren's contracture should carefully select his cases and use radical fasciectomy, partial fasciectomy, or fasciotomy, since each has a definite place in the proper treatment of this disease. It is only by a selective approach that we can give the patient the maximum benefit.

PRIMARY TENDON REPAIRS — A STUDY OF 789 CONSECUTIVE TENDON SEVERANCES. A. P. KELLY, JR. *J. Bone & Joint Surg.* 41-A:581, 1959.

Antibiotics, regional anaesthesia, and improved surgical facilities have made repair of tendon injuries easier and more attractive than previously. The results of this study indicate that crushing fractures and vascular insufficiency are still problems of great magnitude. It is incumbent upon the surgeon to recognize that the therapeutic advances in the past decade have not appreciably altered tissue reaction to trauma, and that the success of primary repair depends on proper evaluation of these factors as well as upon surgical skill. I have attempted to delineate the areas where primary repair is still a worth-while venture.

SIMPLIFIED TECHNIQUE FOR DIRECT VISION PULMONARY VALVOTOMY. C. R. LAM AND R. E. TABER. *J. Thoracic & Cardiovas. Surg.* 38:309, 1959.

It is proposed that open pulmonary valvotomy without hypothermia and without the pump-oxygenator is feasible and safe. Valvotomies have been carried out in 48 patients with a single mortality, which occurred in the youngest patient in the series. A second fatality occurred in a patient in whom pulmonic stenosis was absent, and in whom, at autopsy, two atrial septal defects were found. The operation is suitable only for pulmonic stenosis of the valvular type. Differentiation of this type from isolated infundibular stenosis and other congenital defects should be possible with the diagnostic techniques available to the cardiovascular team.

THE INCREASING INCIDENCE OF CARCINOMA OF THE THYROID IN A SURGICAL PRACTICE. J. M. MILLER, R. C. HORN, AND M. A. BLOCK. *J.A.M.A.* 171:1176, 1959.

A significant increase has been observed in the incidence of cancer in patients with thyroid malignancy. For the patients with a clinically undiagnosed thyroid cancer, qualitative and quantitative changes in patient population, greater number of operations for nontoxic nodular goiter, and improved clinical selection may account for most of the increase. The increased number of frank thyroid cancers is more difficult to explain on such grounds and suggests that the incidence of thyroid cancer in the general population is increasing. Physicians should regard the approach to preventive surgery of thyroid cancer as being in a dynamic state.

VENTILATORY RESPONSE TO INCREASING ARTERIAL CO₂ TENSION EMPLOYING A REBREATHING METHOD IN NORMAL INDIVIDUALS AND IN PATIENTS WITH CARDIAC DISEASE. H. G. PAULI, F. E. NOE, AND E. O. COATES, JR. *J. Lab. & Clin. Med.* 54:26, 1959.

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Ventilatory response to an increasing arterial carbon dioxide tension was studied in 11 normal individuals and 20 cardiac patients, using a rebreathing method for gradual increase of CO₂ in the inspired air. A linear relationship between ventilation and arterial CO₂ tension was confirmed in both the normal individuals and cardiac patients. A diminution of the respiratory "threshold" for CO₂ with consequent increase in resting ventilation was found in all cardiac patients. Respiratory "responsiveness" to CO₂ was significantly diminished in the group of 7 patients with long-standing mitral stenosis. Studies after successful commissurotomy in two individuals suggested that these changes were reversible. Impaired mechanics of breathing may be responsible for the diminished responsiveness to CO₂ in individuals with long-standing mitral stenosis, as appears to be the case in some patients with primary hypoventilation states.

NEW CLINICAL CONCEPT OF SYSTEMIC LUPUS ERYTHEMATOSUS — ANALYSIS OF 100 CASES. C. E. RUPE AND S. N. NICKEL. J.A.M.A. 171:1055, 1959.

Increasing clinical awareness and study of the L. E. cell phenomenon have greatly expanded the understanding of the natural history of lupus erythematosus, revealing its prolonged, frequently benign course. The disease is much more common in men than has been previously reported. The natural history of lupus erythematosus as shown in this analysis suggests a classification of cases into chronic continuous, severe intermittent, and acute fulminating types. The prognosis in the individual case can be more accurately predicted if sex and type of organ involvement are taken into account. In this series a female patient with a butterfly rash, systemic involvement, and no arthritis had the worst prognosis and a male patient lacking evidences of renal involvement had the best. The frequent association of streptococcic infections preceding the onset of lupus erythematosus and repeated tissue response in the individual patient suggest a prophylactic possibility. Therapy with steroids may further change the prognosis in lupus erythematosus. At present the apparent increasing incidence of lupus erythematosus and the more frequent recognition of the earlier, milder case make a statistical appreciation of the effects of steroids and treatment difficult.

CLINICAL FEATURES OF CONTACT DERMATITIS DUE TO NEOMYCIN — REPORT OF CASES. H. REYNOLDS, J. F. HILDEBRAND, C. S. LIVINGOOD, AND R. P. FOSNAUGH. A.M.A. Arch. Dermat. 80:455, 1959.

Neomycin sensitivity is not common. However, the onset may be insidious and its recognition depends upon a heightened index of suspicion, rather than on the appearance of the classical signs of acute contact dermatitis. A total of 28 patients with neomycin sensitivity have been observed by us. Illustrative cases are described.

DIHYDROSTREPTOMYCIN DEAFNESS. G. E. SHAMBAUGH, JR., E. L. DERLACKI, W. H. HARRISON, H. HOUSE, W. HOUSE, V. HILDYARD, H. SCHUKNECHT, AND J. J. SHEA. J.A.M.A. 170:1657, 1959.

Cases of irreversible hearing loss attributable to dihydrostreptomycin are continuing to occur, usually without the knowledge of the prescribing physician, because of the latent period of from several weeks to as long as six months between administration of the drug and onset of the hearing loss. There is no known effective

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treatment for this type of nerve deafness. In view of the ototoxicity of dihydrostreptomycin and, in particular, in view of the unique latent period, this antibiotic should be omitted from commercial combinations of antibiotics or, if it is included, its presence should be clearly indicated in the name.

PULMONARY ALVEOLAR PROTEINOSIS: REPORT OF THREE CASES. J. C. SIERACKI, R. C. HORN, JR., AND S. KAY. *Ann. Int. Med.* 51:728, 1959.

Three new cases of pulmonary alveolar proteinosis are reported. The histologic findings in biopsy material from the lungs are essentially identical and do not differ from those originally detailed by Rosen et al. The granular and crystalline inclusions in the proteinaceous intra-alveolar deposit that characterizes the disease are emphasized. Periodic-acid-Schiff-positive material, similar to the amorphous intrapulmonary deposit, was found in phagocytes in the supraclavicular lymph nodes of case 1. This study supports the concept that pulmonary alveolar proteinosis is a new disease, but a factor or factors common to all, or most, of the cases that might point to etiologic possibilities remain unidentified.

THE KIDNEYS IN SURGERY OF THE ABDOMINAL AORTA. D. E. SZILAGYI, R. F. SMITH, AND J. G. WHITCOMB. *A.M.A. Arch. Surg.* 79:252, 1959.

Certain problems related to renal physiology and anatomy that arise in surgery of the abdominal aorta are discussed. Some aspects of renal ischemia caused by cross clamping of the aorta and of the effects of angiographic contrast media on renal function are described. Instances of technical difficulties due to vascular anomalies (aberrant renal arteries and vein) are cited. Examples of the association of abdominal aortic aneurysm with horseshoe kidney and with ureteral obstruction are given. The following conclusions are offered: Although cross clamping of the aorta distal to the renal arteries has not been found responsible for any specific physiologic injury, its harmful potentialities must be kept in mind. The safe period of cross clamping of the aorta above the renal arteries has been found to be about 30 minutes for kidneys without manifest organic disease. In operative procedures requiring longer clamping, renal circulation must be maintained by some form of bypass. In aortography, the use of the least toxic contrast medium, in the smallest possible amount, with multiple exposure technique for the avoidance of repetition of injection is recommended. The usefulness of the pre- and postaortographic serum creatinine as functional index of renal function is stressed. In course of operative dissection of the abdominal aorta the possibility of the presence of accessory renal arteries must be remembered. Whenever the aortic dissection reaches above the level of the inferior mesenteric artery, the renal vein must be looked for, and if it is not found in its normal anatomical location must be sought in a retroaortic position. In dealing with horseshoe kidneys associated with an aneurysm of the abdominal aorta, bisection of the renal isthmus, suture of the cut ends, and resection of the separated kidneys allow the removal of the aneurysm in the routine manner. When an abdominal aortic aneurysm is complicated by ureteral obstruction, the resection of the aneurysm at the earliest safe moment is indicated.

OPERATION OF A BUBBLE TYPE PUMP-OXYGENATOR. R. E. TABER AND L. A. TOMATIS. *S. Clin. North America* 39:1539, 1959.

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The assembly and operation of a bubble oxygenator of the DeWall-Lillehei type has been described, and some lessons learned in 300 perfusions have been reported. A compact stainless steel model of a bubble oxygenator is undergoing clinical trial. Some data about a practical disc type oxygenator are presented.

RELATIONSHIP OF ENAMEL HYPOPLASIA TO ABNORMAL EVENTS OF GESTATION AND BIRTH. W. F. VIA, JR. AND J. A. CHURCHILL. *J. Am. Dent. A.* 59:701, 1959.

Dental examinations and medical histories including prenatal, birth, and subsequent development information have been obtained for 312 children. A neurological examination revealed that 219 of these children had some form of cerebral disorder, whereas 93 had no evidence of cerebral disorder. Enamel hypoplasia was seen in 119 (54 per cent) of the children with cerebral disorders, whereas only 8 (9 per cent) of the normal children had enamel hypoplasia. The highest incidence of hypoplasia was seen in those children with choreoathetosis (100 per cent) and simple spastic diplegia (84 per cent). The children in the focal cerebral seizure and hemiplegia group had the least hypoplasia (38 percent). The abnormal factors of gestation and birth studied were: Rh incompatibility, maternal diabetes, toxemia of pregnancy, prematurity, breech presentation, twinning, cesarean section, labor in excess of 20 hours, intrapartum hemorrhage and placenta previa, and poor respiratory response at birth. Among the 312 children studied, enamel hypoplasia and one or more of the abnormal factors occurred in 93. A definite correlation was found between the time the factors occurred and the time the enamel hypoplasia was estimated to have occurred.



